



samtec

THE CATALOG

2021

A DIFFERENT BREED OF CAT

INNOVATIVE TECHNOLOGIES • SUDDEN SERVICE®

Founded in 1976, Samtec is much more than just another connector company. We put people first, along with a commitment to **exceptional service**, **quality products** and **innovative technologies** that take the industry further faster. This is enabled by our unique, **fully integrated business model**, which allows for true **collaboration and innovation** without the limits of traditional business models.

We believe that taking care of our customers and our employees is paramount in how we approach our business, and this belief is deeply ingrained throughout Samtec worldwide.

INNOVATIVE TECHNOLOGIES

From standard cataloged products to unique high-performance design, Samtec's **SOLUTION BLOCKS** are designed to support any interconnectivity need, regardless of application, performance requirements or environment.

Silicon-to-Silicon



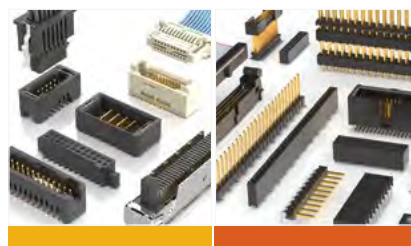
**HIGH-SPEED
BOARD-TO-BOARD**

**HIGH-SPEED
CABLE**

OPTICS

RF

Core Board-to-Board



MICRO/RUGGED

**FLEXIBLE
STACKING**

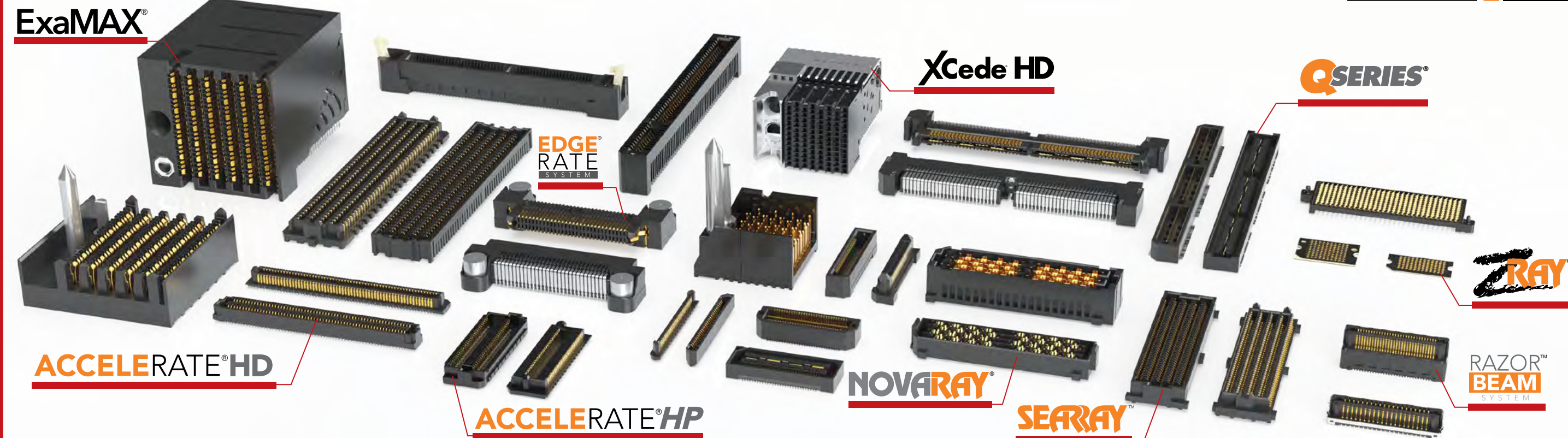
SUDDEN SERVICE®

Samtec is the service leader in the industry, offering unmatched technical support, free product samples and access to online resources, and innovative online tools to help streamline the design process.



HIGH-SPEED BOARD-TO-BOARD

OPEN-PIN-FIELD ARRAYS | GROUND PLANE STRIPS | EDGE CARDS | ULTRA-MICRO | BACKPLANE



samtec

HIGH-SPEED CABLES

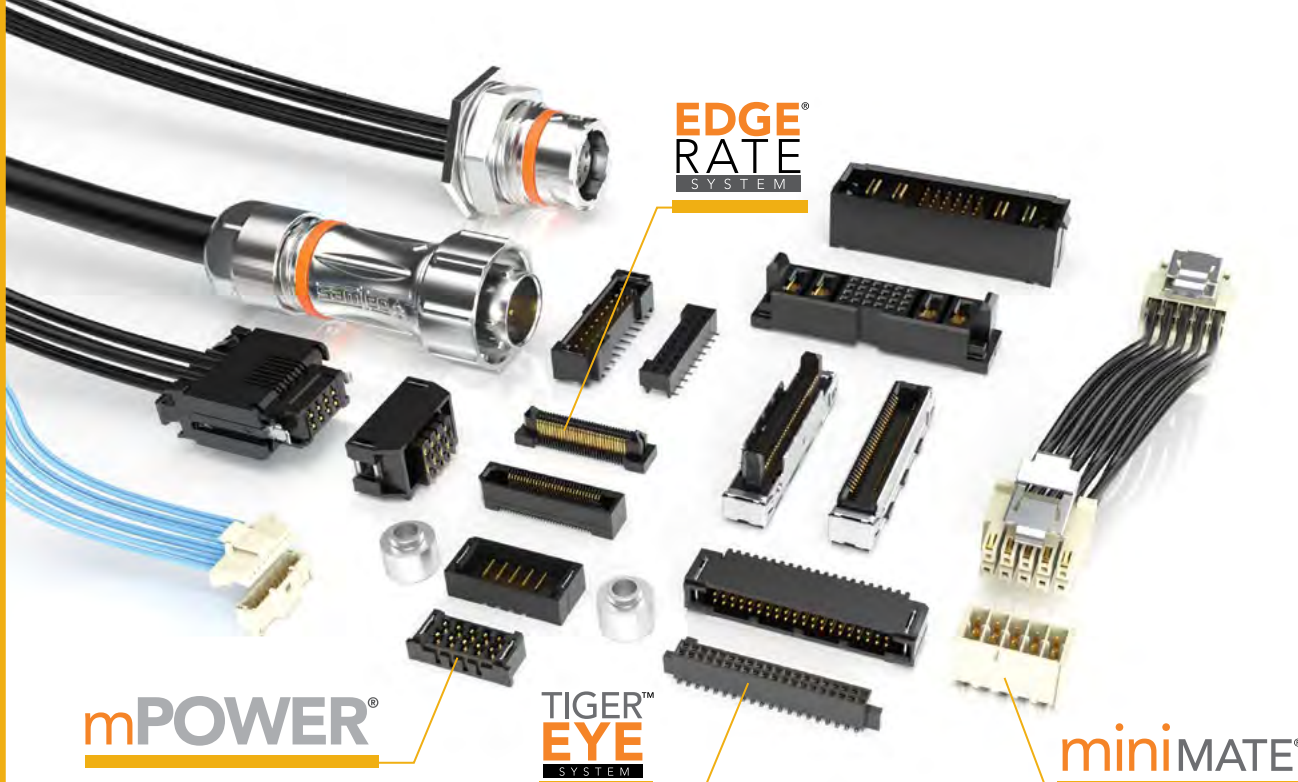
FLYOVER[®] | MID-BOARD & PANEL | BACKPLANE | MICRO COAX & TWINAX



samtec

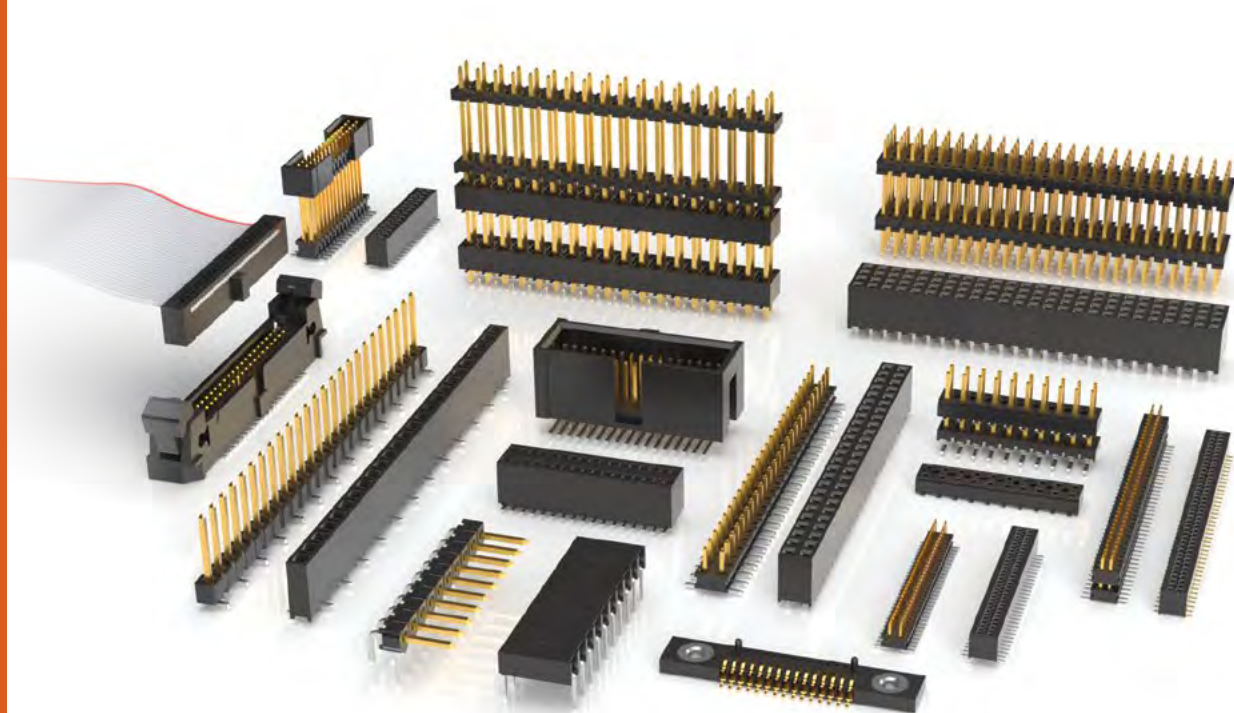
MICRO/RUGGED

RUGGED MICRO SYSTEMS | BLADE POWER | MICRO DISCRETE WIRE | MICRO SEALED I/O



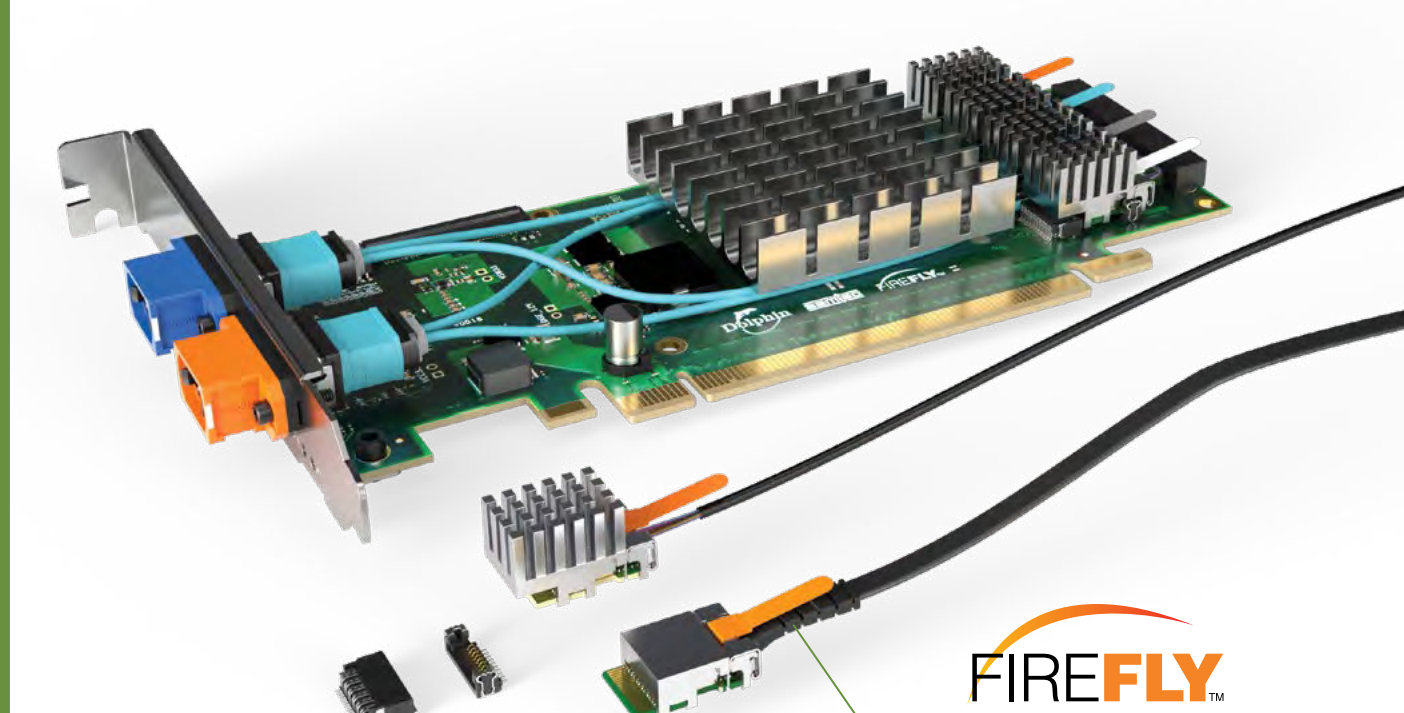
FLEXIBLE STACKING

LOW PROFILE | PASS-THROUGH | ONE-PIECE | SKYSCRAPERS | SHROUDED HEADERS | IDC SYSTEMS



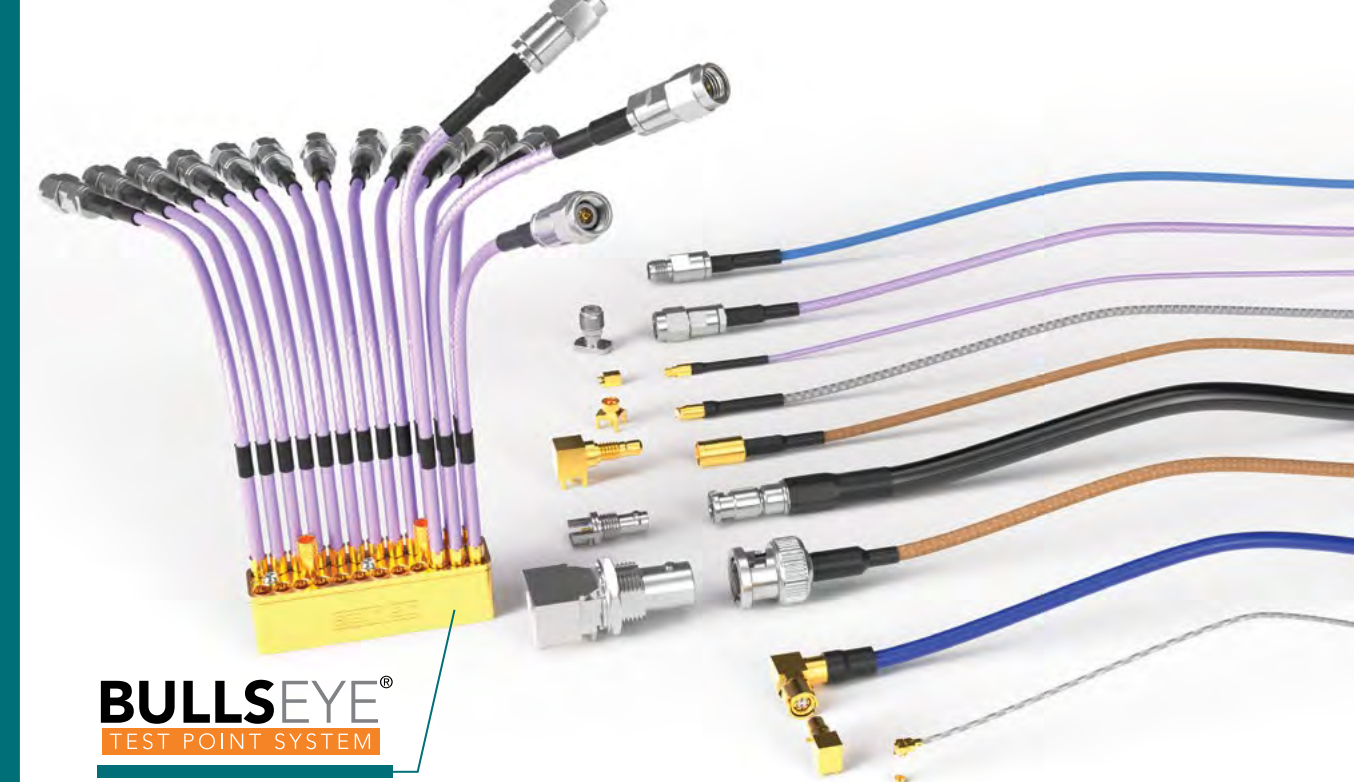
OPTICS

MICRO FLYOVER SYSTEM[™] | EXTENDED TEMP | PCI EXPRESS[®]-OVER-FIBER



RF

PRECISION RF | 50 Ω SOLUTIONS | 75 Ω SOLUTIONS | ORIGINAL SOLUTIONS



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OPTICS

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FLEXIBLE STACKING

Board Stacking

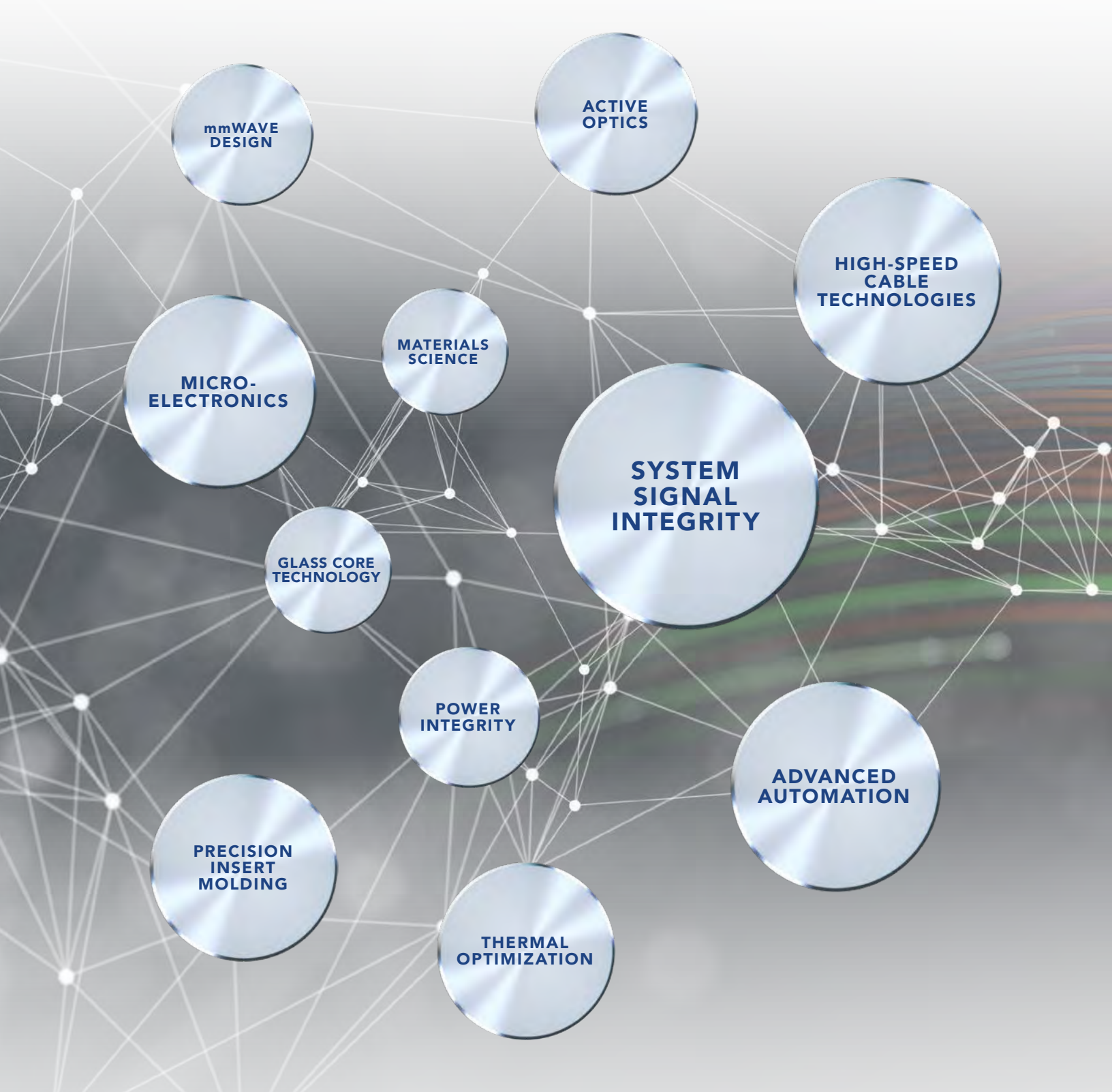
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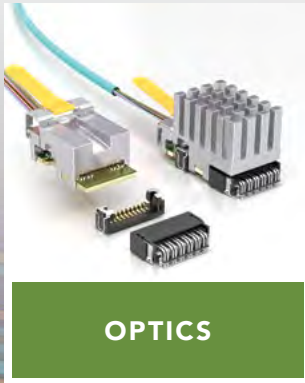
INTEGRATION LEADS TO

Samtec's integrated approach provides high-level design and development of advanced interconnect systems and **TECHNOLOGIES**, along with industry-leading expertise that allows us to offer effective strategies and support for **optimizing the entire signal channel of high-performance systems.**



INNOVATION

Samtec is structured like no other company in the interconnect industry. We work in a fully integrated capacity that enables true collaboration and results in uniquely innovative **PRODUCTS** because **our technology teams are not limited by the boundaries of traditional business units.**



OPTICS



HIGH-SPEED CABLES



PRECISION RF



HIGH-SPEED / HIGH-DENSITY
BOARD-TO-BOARD



MICRO RUGGED / POWER

SUDDEN SERVICE®

Samtec's Sudden Service® provides unmatched global service, free access to data and industry leading tools, along with engineering support, to help you design, develop, test and deliver the best solution for any complex application.

GLOBAL OPERATIONS & SUPPORT NETWORK



MANUFACTURING

7 Global Manufacturing Locations



SUPPORT CENTERS

11 Global Support Locations



SALES LOCATIONS

125+ Regional Sales Representatives

AWARD-WINNING SERVICE

#1 in Bishop's Customer Survey of the Electronic Connector Industry.



Samtec has been consistently rated as the #1 connector company in North America, Europe and Asia. This is the highest overall rating in the Bishop & Associates' U.S., Europe and Asia Customer Surveys of the Electronic Connector Industry.

UNMATCHED LEAD-TIMES

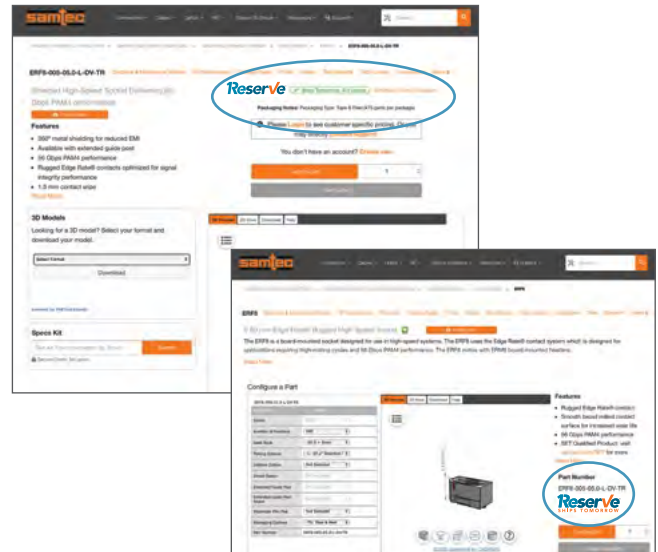
Innovative Programs & Systems Enable Deliveries in Days, Not Weeks.

Reserve
SHIPS TOMORROW

NEW!

This new designation allows customers to **quickly and easily identify availability of over 200,000 of Samtec's most popular connectors and cables** - guaranteed to ship in 1-day.

Look for the **Reserve** badge throughout **samtec.com** to quickly determine if your part number is eligible, along with current availability, quantity breaks and pricing. Hundreds of part numbers are being added daily!



24HOUR
SUDDEN SAMPLE™

Free product samples, shipped in **24-hours** or less have been a cornerstone of Samtec Sudden Service® since the company was founded. Visit **samtec.com** to quickly request your sample.

2DAYS
WORLD DIRECT™

An innovative shipping program that **bridges the gap between manufacturing facilities and customers**, allowing for manufacturing flexibility without increased costs, and with even faster lead-times. Contact **ecustomerservice@samtec.com** to learn more.

24/7 WORLDWIDE ACCESS

Samtec is the Electronics Industry's Service & Technology Leader.

Technical Support

Signal Integrity Group: **sig@samtec.com**

Application Support Group: **asg@samtec.com**

Interconnect Processing Group: **ipg@samtec.com**

Supply Chain Support

MySamtec™ Real-Time Account Access: **account.samtec.com**

Personal Account Managers & CSRs: **ecustomerservice@samtec.com**

Upfront, Aggressive 24-Hour Quotes: **pricing@samtec.com**



Online Tools

FIND, DESIGN & VALIDATE YOUR SOLUTION

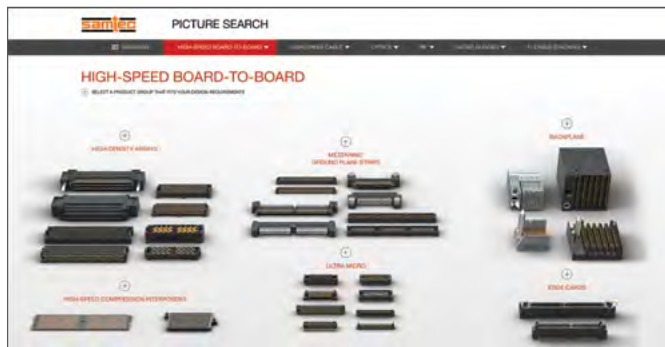
Samtec has developed innovative search, design, and validation tools to help customers quickly and easily find the right solution. Whether you prefer to search by product name or characteristics, browse through pictures, or build an assembly by entering physical specifications, Samtec offers a tool to make your search easier than ever.



Picture Search

VISUALLY FIND YOUR SOLUTION

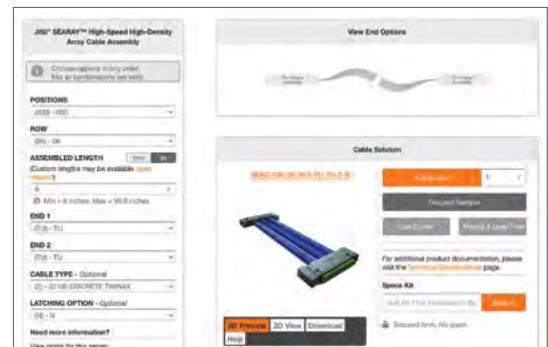
Browse through a highlight reel of Samtec's most popular products to find the ideal solution for your application, view specifications, check availability, order samples and more. To find your solution, visit samtec.com/picturesearch.



Cable Builder

HIGH-SPEED ASSEMBLIES DESIGNED IN MINUTES

Input specific options to quickly build a complete high-speed cable assembly, view specs, prints, 3D models, and instantly request samples and quotes. Visit samtec.com/cablebuilder.



Solutionator

DESIGN IN A MINUTE

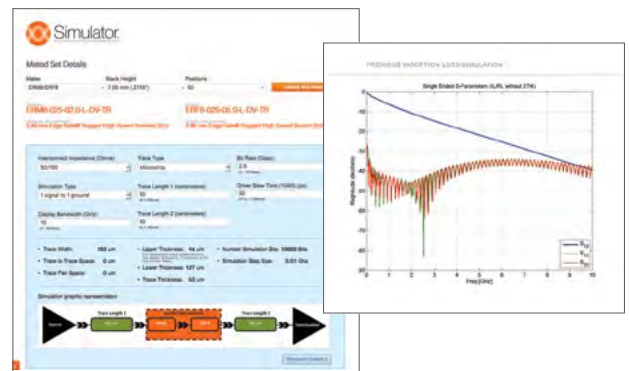
Quickly build mated connector sets using a wide variety of user-defined search parameters and filters, view specs and order samples all with one online design tool. Visit samtec.com/solutionator to start building.



Simulator

SIMULATE IN A MINUTE

Innovative design tool blends data to project performance in a user-defined system, providing insertion loss, crosstalk, eye diagrams, sample requests and more. Visit samtec.com/simulator.



Samtec is committed to the continuous evolution of our award-winning website, providing customers with innovative design tools, technical resources and support needed to make **finding, designing and ordering** the right product as easy and streamlined as possible.



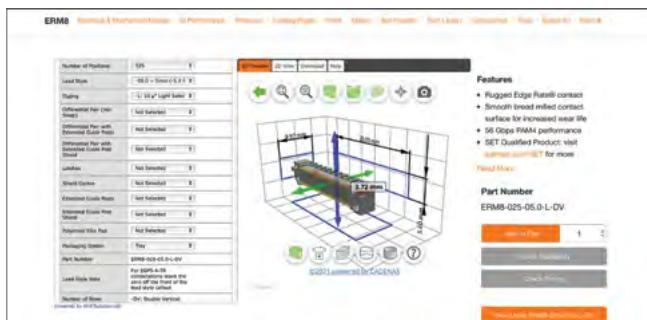
Downloads

3D MODELS, SPECS, PRINTS & MORE

Samtec's extensive library of downloadable resources is unmatched in the industry. From 3D Models and Test Reports, Interconnect Symbols and Footprints, Product Videos, Design Guides, Specifications and so much more – Samtec offers immediate and unlimited access to all the documentation you need to select the right solution for your application. Visit samtec.com to start exploring.

3D Models

Quickly configure, preview and download models in more than 150 different formats, including AutoCad, Solid Edge, Inventor and many more.



Test Reports

Samtec provides immediate access to a variety of testing and qualification reports for our products, including high-speed characterization, thermal, frequency and time domain, Extended Life Product™, Severe Environment Testing, and others.



PCB Footprint / eCAD Models

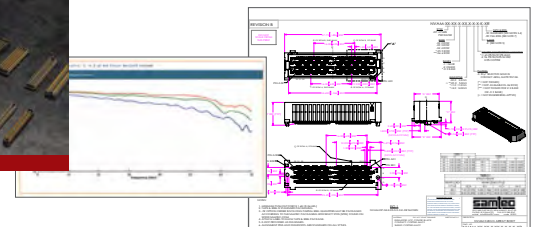
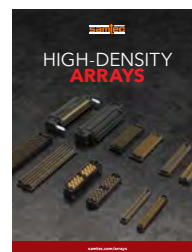
Instantly view, download and design with over 200,000 ready-to-use eCAD models.

These detailed models have been formatted to work with leading schematic captures and include accurate assembly, silkscreen and 3D features.



Technical Library

Samtec's online Technical Library contains a wealth of resources, including Prints & Specifications, White Papers, Application Notes, Test Reports, Product Videos, Design Guides, Processing Information and much more.

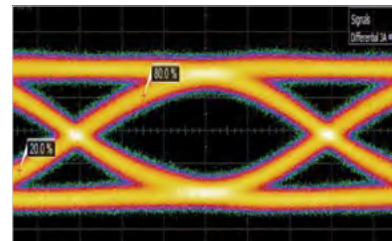


MODIFIED & CUSTOM SOLUTIONS

INDUSTRY-LEADING SUPPORT & EXPERTISE

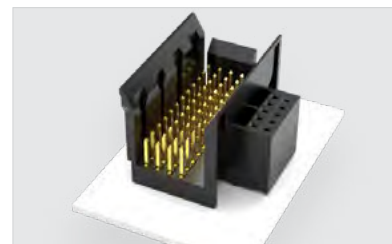
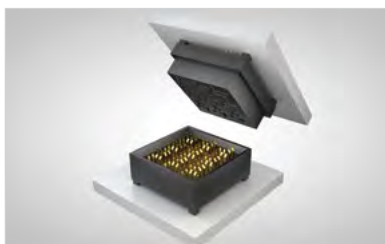
Visit samtec.com/custom for details.

- Full engineering, design and prototype support
- Design, simulation and processing assistance
- Dedicated Application Specific Product engineers and technicians
- Industry-leading Customer Service
- Quotes and samples turned around in 24 hours
- Flexible, quick-turn in-house manufacturing
- Customer specific testing - AS9102 FAIs available
- ITAR compliant with U.S. based manufacturing
- Contact the Application Specific Products Group at asp@samtec.com to discuss your application



EXPRESS MODIFICATIONS & ENGINEERED CUSTOMS

- Up to 50 μ " Gold and Tin Lead plating available
- Polarized positions
- Modified stack heights, latching and screw downs
- Modified contacts, bodies, stamping, plating, wiring, molding and much more
- Ruggedizing features including strain relief, plastic housings, screw downs, latches, locks, etc.
- Mix-and-match cable end options for application specific requirements
- Many non-cataloged cable standards available, including 75 Ω micro coax & high-density twinax solutions
- Solutions for Optics in extreme environments (in development): Samtec MIL-coat protected, salt-fog impenetrable, mitigation for tin whiskers, fungal resistant, extreme shock and vibration, full support for liquid immersion cooling



HIGH-SPEED HIGH-DENSITY ARRAYS

EXTREME DENSITY • HIGH-PERFORMANCE • MAXIMUM DESIGN FLEXIBILITY

16-17

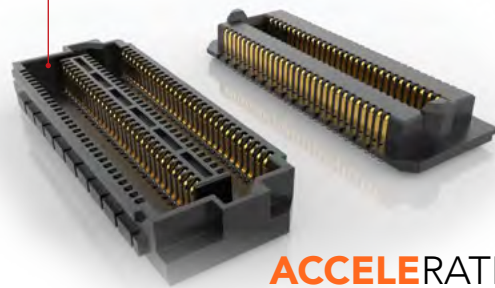
NOVARAY® EXTREME DENSITY & PERFORMANCE ARRAYS (NVAM, NVAF)



NOVARAY®

18-19

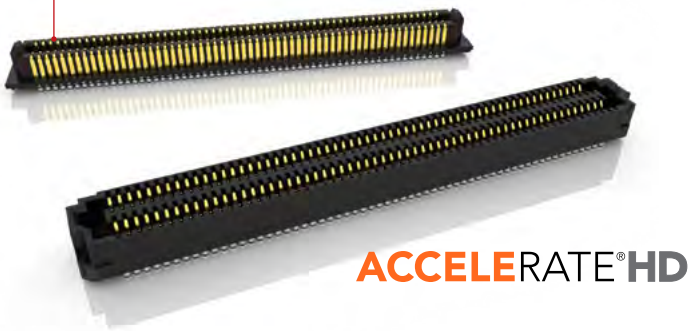
0.635 mm PITCH ACCELERATE® HP HIGH-PERFORMANCE ARRAYS (APM6, APF6)



ACCELERATE®HP

20-21

0.635 mm PITCH ACCELERATE® HD HIGH-DENSITY ARRAYS (ADM6, ADF6)



ACCELERATE®HD

22-25

1.27 mm PITCH SEARAY™ OPEN-PIN-FIELD ARRAYS (SEAF, SEAM)



SEARAY™

26-27

SEARAY™ 0.80 mm PITCH OPEN-PIN-FIELD ARRAYS (SEAM8, SEAF8)



SEARAY™.8mm

28-29

1.27 mm PITCH LP ARRAY™ LOW-PROFILE ARRAYS (LPAM, LPAF)

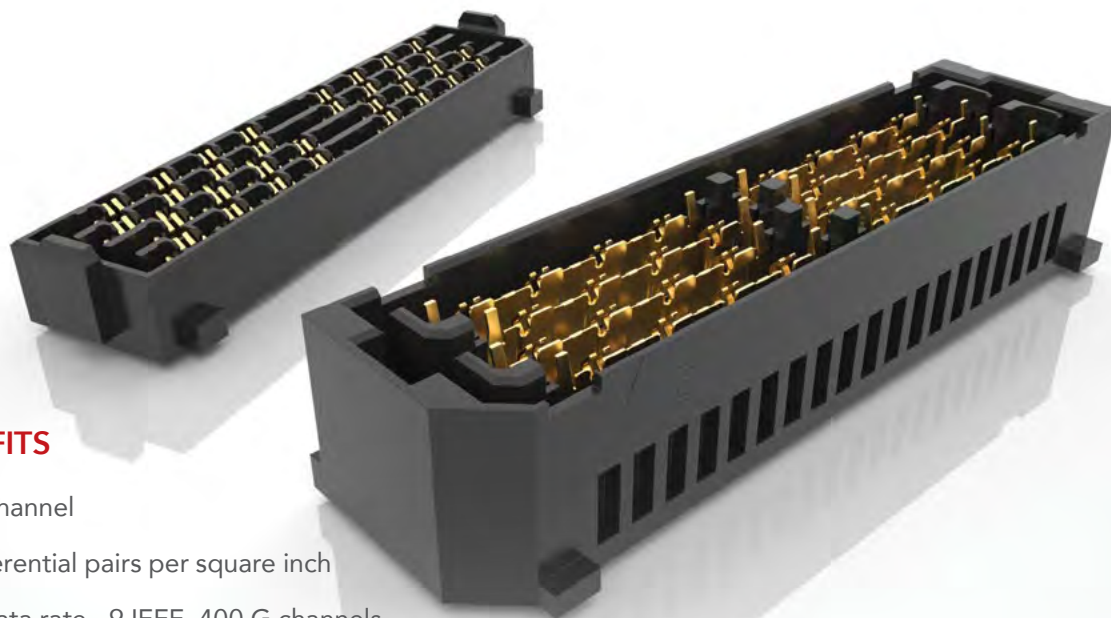


LPARRAY™



EXTREME PERFORMANCE HIGH-DENSITY ARRAYS

(0.80 mm) .0315" x (1.80 mm) .071" PITCH



FEATURES & BENEFITS

- 112 Gbps PAM4 per channel
- 112 fully shielded differential pairs per square inch
- 4.0 Tbps aggregate data rate - 9 IEEE, 400 G channels
- Extremely low crosstalk to 40 GHz+
- Incredibly tight impedance control
- Minimal variance in data rate as stack height increases
- 40% less space vs traditional arrays with the same data throughput

NRZ	PAM4
56 Gbps	112 Gbps



High-speed mezzanine connector and cable in one product family



BGA attach to board for greater density and optimized trace breakout region



Guaranteed two points of contact to ensure a more reliable connection

KEY SPECIFICATIONS

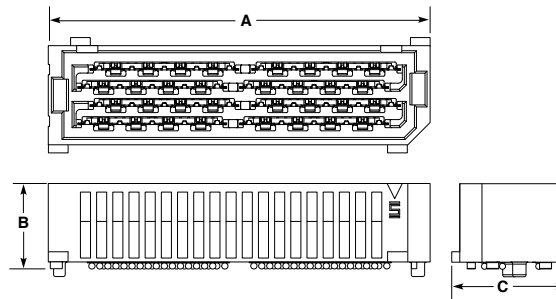
STACK HEIGHTS	TOTAL PAIRS	INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	CURRENT RATING	WORKING VOLTAGE	LEAD-FREE SOLDERABLE
7 mm & 10 mm	Up to 32 pairs	Black LCP	Copper Alloy	Au or Sn over 50 μ " (1.27 μ m) Ni	2.1 A per pin (signal) 9.6 A per pin (ground)	200 VAC	Yes

0.80 mm x 1.80 mm PITCH • EXTREME PERFORMANCE ARRAYS

SERIES	STYLE	NO. OF ROWS	NO. OF BANKS	LEAD STYLE	PLATING OPTION	SOLDER TYPE	K	"X"R
NVAM Terminal	-DP = 4 pairs per wafer	-02 -03	-1 = 1 Bank	-02.0 = (2 mm) .0787" (NVAM only)	-S = 30 μ" (0.76 μm) Gold on contact area, Matte Tin on solder tail	-2 = Lead-Free Solder Charge	-K = (3.50 mm) .138" DIA Polyimide film Pick & Place Pad	-TR = Tape & Reel -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks)
NVAF Socket		-04	-2 = 2 Banks	-05.0 = (5 mm) .1969"				

NVAM

Board Mates:
NVAF



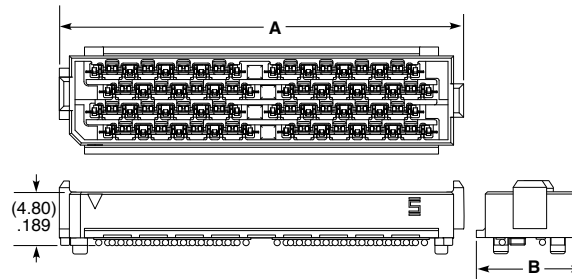
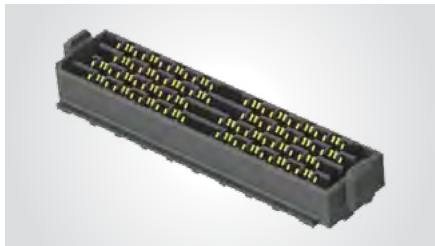
PRELIMINARY

NO. OF BANKS	A	LEAD STYLE	B	NO. OF ROWS	C
-1	(21.75) .856	-02.0	(5.46) .215	-02	(7.80) .307
-2	(37.75) 1.486	-05.0	(8.46) .333	-03	(9.60) .378
				-03	(11.40) .449

View complete specifications at: samtec.com?NVAM

NVAF

Board Mates:
NVAM



PRELIMINARY

NO. OF BANKS	A
-1	(20.25) .797
-2	(36.25) 1.427

NO. OF ROWS	B
-02	(6.00) .236
-03	(7.80) .307
-03	(9.60) .378

MATED HEIGHTS*		
NVAF LEAD STYLE	NVAM LEAD STYLE	
	-02.0	-05.0
-05.0	(7.00) .276	(10.00) .394

*Processing conditions will affect mated height.

AGGREGATE DATA RATE (NRZ)					
448 Gbps	672 Gbps	896 Gbps	1344 Gbps	1792 Gbps	
1 Bank			2 Bank		
2 Row	3 Row	4 Row	2 Row	3 Row	4 Row
8 Pairs	12 Pairs	16 Pairs	24 Pairs	32 Pairs	

Notes:

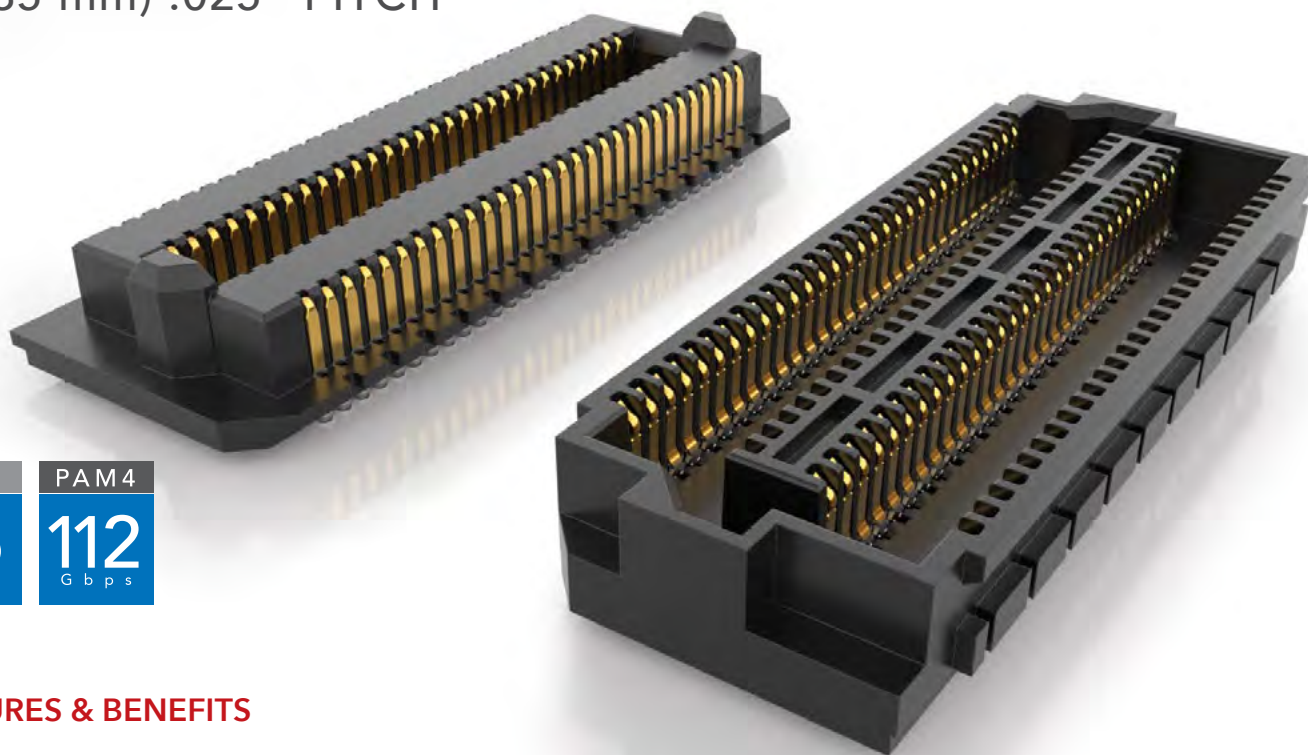
Some sizes, styles and options are non-standard, non-returnable

View complete specifications at: samtec.com?NVAF

ACCELERATE[®]HP

HIGH-PERFORMANCE ARRAY SYSTEM

(0.635 mm) .025" PITCH



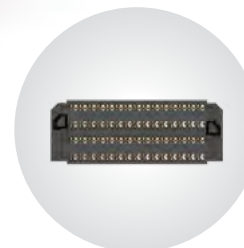
NRZ	PAM4
56 Gbps	112 Gbps

FEATURES & BENEFITS

- Flexible open-pin-field and cost optimized, extreme performance solution
- Low-profile 5 mm stack height and up to 10 mm
- 0.635 mm pitch
- Four row design with up to 400 total pins; roadmap to 1,000+ pins
- Data rate capable of PCIe[®] Gen 5 and 100 GbE
- In Development: Cable assembly designs, 6, 8 and 10 rows, additional position counts



Solder ball technology
for simplified processing



APF6 Sereis; 120 pins
(actual size show)

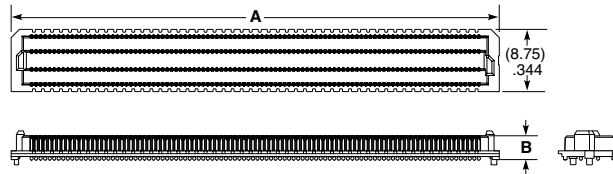
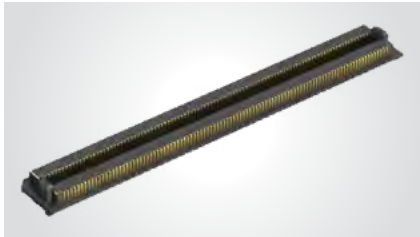
KEY SPECIFICATIONS

STACK HEIGHTS	TOTAL PINS	INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	OPERATING TEMP RANGE	LEAD-FREE SOLDERABLE
5 mm - 10 mm	40 - 400	Black LCP	Copper Alloy	Au or Sn over 50 μ" (1.27 μm) Ni	-55 °C to +125 °C	Yes

(0.635 mm) .025" PITCH • 112 Gbps PAM4 OPEN-PIN-FIELD ARRAYS

SERIES	NO. OF POSITIONS	LEAD STYLE	PLATING OPTION	NO. OF ROWS	SOLDER TYPE	OPTION
APM6 Terminal	-020, -060, -100 (per row)	-01.5 = 1.5 mm (APM6 only)	-L = 10 μ " (0.25 μ m) Gold on contact area, Matte Tin on tail	-04 = Four Rows	-2 = Lead-Free Solder Balls	(Leave blank for no alignment pin) -A = Alignment Pin
APF6 Socket		-06.5 = 6.5 mm (APM6 only) 03.50 = 3.5 mm (APF6 only)	-S = 30 μ " (0.76 μ m) Gold on contact area, Matte Tin on tail			

APM6 Board Mates: APF6



NO. OF POSITIONS PER ROW	A	LEAD STYLE	B
-020	(17.82) .701	-01.5	(3.33) .131
-060	(43.22) 1.701	-06.5	(8.33) .328
-100	(68.62) 2.701		

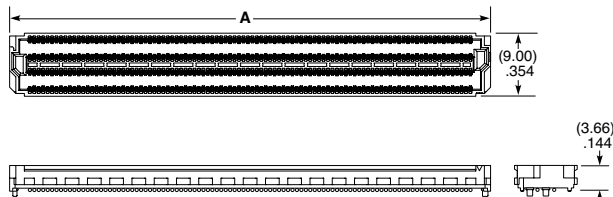
PRELIMINARY

View complete specifications at: samtec.com?APM6

MATED HEIGHTS *		
APF6 LEAD STYLE	APM6 LEAD STYLE	
	-01.5	06.5
-03.5	(5.00 mm) .197"	(10.00 mm) .394"

* Processing conditions will affect mated height.

APF6 Board Mates: APM6



NO. OF POSITIONS PER ROW	A
-020	(17.82) .701
-060	(43.22) 1.701
-100	(68.62) 2.701

PRELIMINARY

Notes:

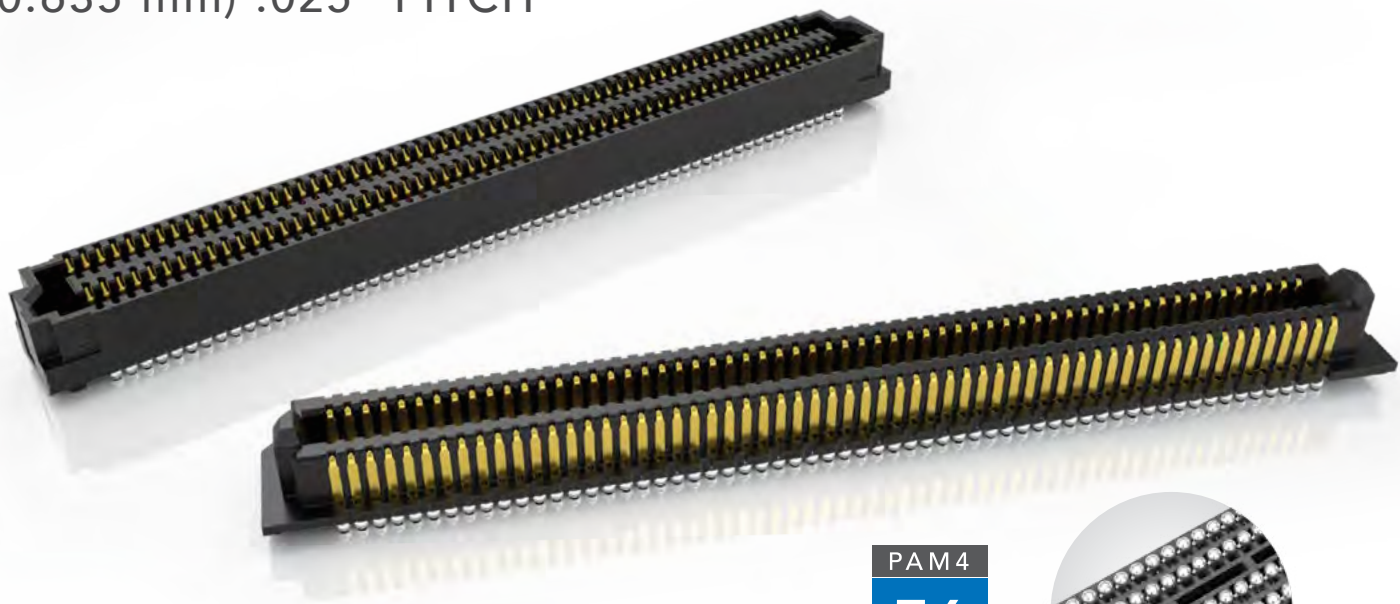
Some sizes, styles and options are non-standard, non-returnable

View complete specifications at: samtec.com?APF6

ACCELERATE[®]HD

HIGH-DENSITY SLIM BODY ARRAYS

(0.635 mm) .025" PITCH



FEATURES & BENEFITS

- Up to 240 positions in 4-row design (400 positions in development)
- Low-profile 5 mm stack heights
- Slim 5 mm width body design
- Edge Rate[®] contact system optimized for signal integrity performance
- Open-pin-field for grounding and routing flexibility
- Right-angle (ADF6-RA) and other stack heights in development
- PCIe[®] 5.0 capable
- Compatible with mPower[®] (UMPT/UMPS) for a power signal solution

PAM4
56
G b p s



Solder ball technology
for simplified processing

HIGHER DENSITY THAN PREVIOUS GENERATION STRIPS



Actual Size Shown
(68.22 mm x 5.00 mm)

ADM6/ADF6 Series (400 total positions)

KEY SPECIFICATIONS

PITCH	TOTAL POSITIONS	INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	OPERATING TEMP RANGE	CURRENT RATING	WORKING VOLTAGE	LEAD-FREE SOLDERABLE
(0.635 mm) .025"	40 - 240	Black LCP	Copper Alloy	Au or Sn over 50 µ" (1.27 µm) Ni	-55 °C to +125 °C	1.34 A per pin (4 pins powered)	Testing now	Yes

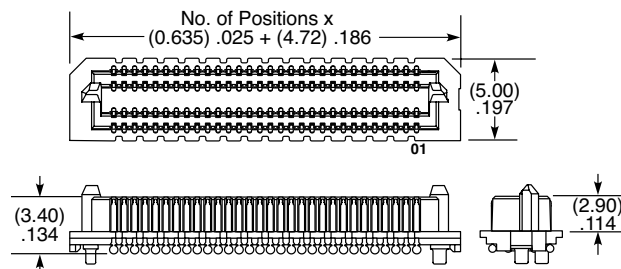
(0.635 mm) .025" PITCH • SLIM BODY OPEN-PIN-FIELD ARRAYS

SERIES	NO. OF POSITIONS	LEAD STYLE	PLATING OPTION	NO. OF ROWS	SOLDER TYPE	OPTION	"X" R
ADM6 Terminal	-10, -20, -30, -40, -50, -60 (per row)	-01.5 = 1.5 mm (ADM6 only)	-L = 10 μ " (0.25 μ m) Gold on contact area, Matte Tin on tail	-04 = Four Rows	-2 = Lead-Free Solder Ball	(Leave blank for no alignment pin)	-TR = Tape & Reel
ADF6 Socket		-03.50 = 3.5 mm (ADF6 only)				-A = Alignment Pin	-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

ADM6

Board Mates:
ADF6

Standoffs:
JSO



View complete specifications at: samtec.com?ADM6

MATED HEIGHTS *

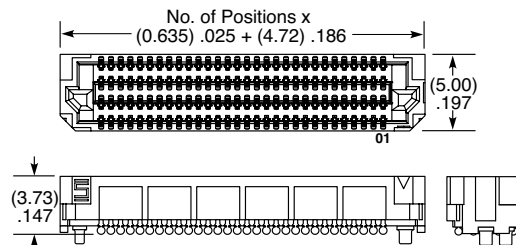
ADF6 LEAD STYLE	ADM6 LEAD STYLE
	-01.5
-03.5	(5 mm) .197"

* Processing conditions will affect mated height.

ADF6

Board Mates:
ADM6

Standoffs:
JSO



Notes:

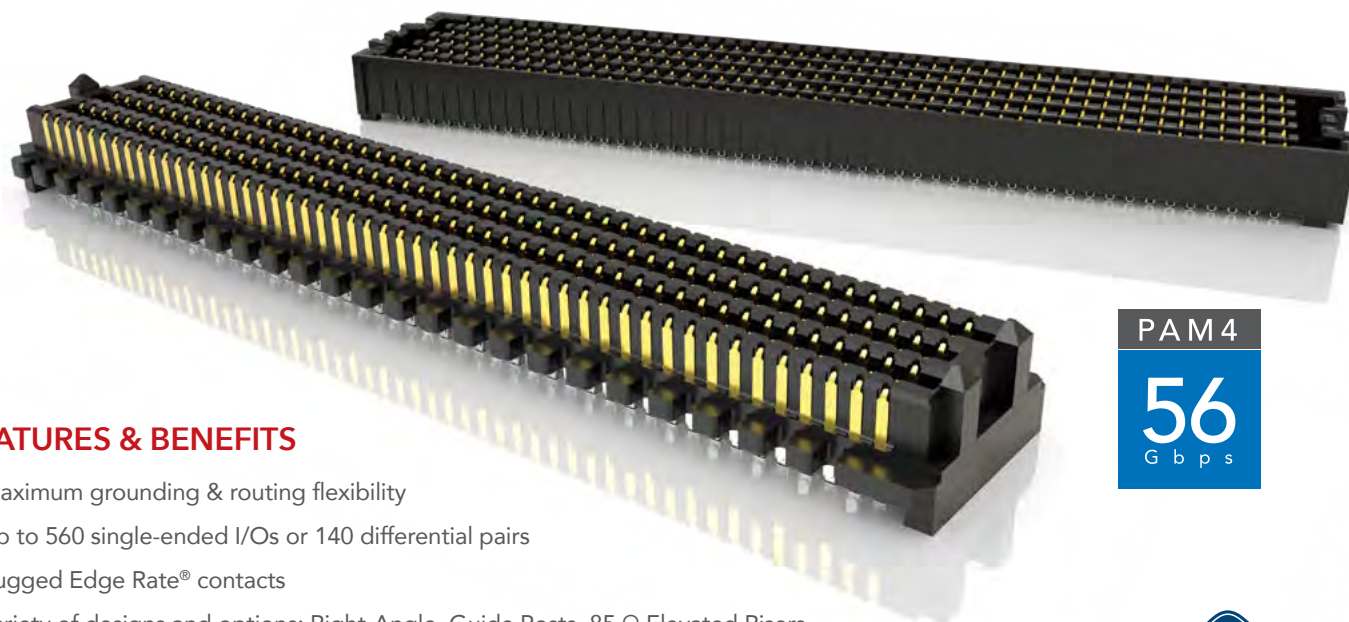
Some sizes, styles and options are non-standard, non-returnable

View complete specifications at: samtec.com?ADF6



HIGH-DENSITY OPEN-PIN-FIELD ARRAYS

(1.27 mm) .050" PITCH

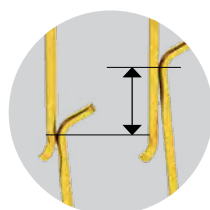


FEATURES & BENEFITS

- Maximum grounding & routing flexibility
- Up to 560 single-ended I/Os or 140 differential pairs
- Rugged Edge Rate® contacts
- Variety of designs and options: Right-Angle, Guide Posts, 85 Ω Elevated Risers, 85 Ω Tuned, Press-Fit and Press-Fit Right-Angle, Guide Post Field Termination Kits
- Compatible with UMPT/UMPS for power/signal flexibility
- Cable mates (SEAC Series) and Jack Screw Standoffs (JSO Series) also available
- Standards: VITA 47, VITA 57.1 FMC, VITA 57.4 FMC+, VITA 74 VNX, PISMO™ 2
- Supports high-speed protocols such as Ethernet, PCI Express®, Fibre Channel & InfiniBand

PAM 4
56
G b p s

**EDGE
RATE**
CONTACT



(1.12 mm) .044"
Nominal Wipe

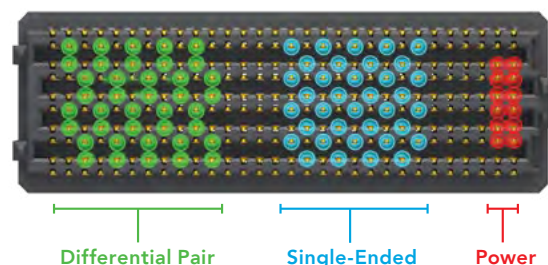


Solder Charges



Power / Signal
Applications

MAXIMUM GROUNDING & ROUTING FLEXIBILITY



KEY SPECIFICATIONS

PITCH	STACK HEIGHTS	TOTAL PINS	INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	OPERATING TEMP RANGE	CURRENT RATING	WORKING VOLTAGE	LEAD-FREE SOLDERABLE
1.27 mm x 1.27 mm	7 mm - 18.5 mm	40 - 560	Black LCP	Copper Alloy	Au or Sn over 50 μ " (1.27 μ m) Ni	-55 °C to +125 °C	2.7 A per pin (10 adjacent pins powered) 7 mm stack height	240 VAC	Yes

Note: Some lengths, styles and options are non-standard, non-returnable

(1.27 mm) .050" PITCH • SEAM/SEAF SERIES

SERIES	POSITIONS PER ROW	LEAD STYLE	PLATING OPTION	NO. OF ROWS	SOLDER TYPE	A	K	"X" R
SEAM Terminal	-10, -15, -20, -30, -40, -50	Specify LEAD STYLE from chart	-L = 10 μ " (0.25 μ m) Gold on contact area, Matte Tin on solder tail	-04 -05 -06 -08 -10	-1 = Tin/Lead Alloy Solder Charge -2 = Lead-Free Solder Charge			-A = Alignment Pin -K Polyimide Film Pick & Place Pad -TR = Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)
SEAF Socket	SEAM & SEAF: -10 only available in -04 Row SEAM: -15 only available in -04 Row with -02.0 Lead Style, and -10 Row with any Lead Style; SEAF: -15 only available in -04 or -10 Row with -5.0 Lead Style		-S = 30 μ " (0.76 μ m) Gold on contact area, Matte Tin on solder tail	SEAM: -04, -05 & -06 (Rows not available with -06.5 Lead Style)				

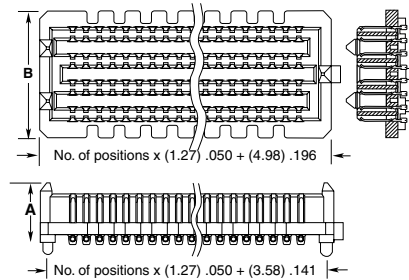
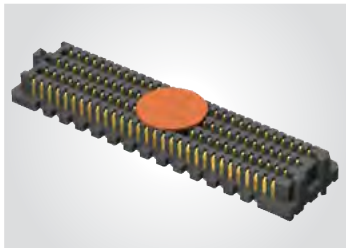
SEAM

Board Mates:

SEAF, SEAFP

Standoffs:

JSO



LEAD STYLE	A	NO. OF ROWS	B
-02.0	(4.60) .181	-04	(7.06) .278
-03.0	(5.59) .220	-05, -06	(9.60) .378
-03.5	(6.10) .240	-08	(12.14) .478
-06.5	(9.14) .360	-10	(14.68) .578
-07.0	(9.60) .378		
-09.0	(11.60) .457		
-11.0	(13.60) .535		

ALSO AVAILABLE

See website for 14 row option.

View complete specifications at: samtec.com?SEAM

SEAF

Board Mates:

SEAM, SEAMP,

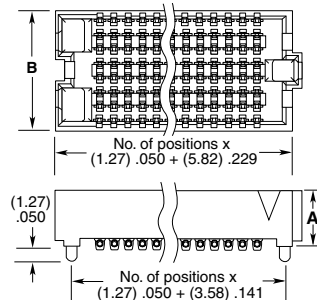
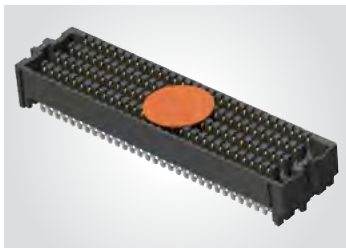
SEAR, SEAMI

Cable Mates:

SEAC

Standoffs:

JSO



LEAD STYLE	A	NO. OF ROWS	B
-05.0	(5.05) .199	-04	(5.66) .223
-06.0	(6.05) .238	-05, -06	(8.20) .323
-06.5	(6.55) .258	-08	(10.74) .423
-07.5	(7.54) .297	-10	(13.28) .523

View complete specifications at: samtec.com?SEAF

MATED HEIGHTS

SEAM LEAD STYLE	SEAF LEAD STYLE			
	-05.0	-06.0	-06.5	-07.5
-02.0	7 mm	8 mm	8.5 mm	9.5 mm
-03.0	8 mm	9 mm	9.5 mm	10.5 mm
-03.5	8.5 mm	9.5 mm	10 mm	11 mm
-06.5	11.5 mm	12.5 mm	13 mm	14 mm
-07.0	12 mm	13 mm	13.5 mm	14.5 mm
-09.0	14 mm	15 mm	15.5 mm	16.5 mm
-11.0	16 mm	17 mm	17.5 mm	18.5 mm

STANDARDS

VITA 47
VITA 57.1 FMC
VITA 57.4 FMC+
VITA 74 VNX
PISMO™2

Visit www.samtec.com/standards for more information.

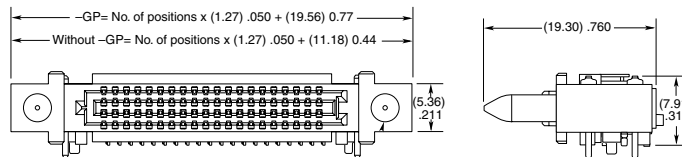
Notes:
IPC-A-610F and
IPC J-STD-001F Class 3 solder joint.

(1.27 mm) .050" PITCH • RIGHT-ANGLE & GUIDE POST

SERIES	POSITIONS PER ROW	01	PLATING OPTION	NO. OF ROWS	SOLDER TYPE	RA	OPTIONS	"X"R
SEAM Right-Angle Terminal	-20 -30 -40		-L = 10 μ" (0.25 μm) Gold on contact area, Matte Tin on solder tail	-04 -06 -08	-1 = Tin/Lead Alloy Solder Charge		-GP = Guide Post/Hole	-TR = Tape & Reel
SEAF Right-Angle Socket	-50		-S = 30 μ" (0.76 μm) Gold on contact area, Matte Tin on solder tail	-10 -08 & -10 Row options require fixturing to process	-2 = Lead-Free Solder Charge		-K = Polyimide Film Pick & Place Pad	-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)
							-LP Latch Post (Available with SEAF in -06 Row with 30 positions only; Required for mating to SEAC)	

SEAM-RA

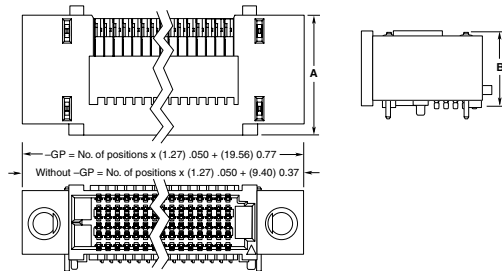
Board Mates:
SEAF, SEAF-RA, SEAFP



SEAF-RA

Board Mates:
SEAM, SEAFP

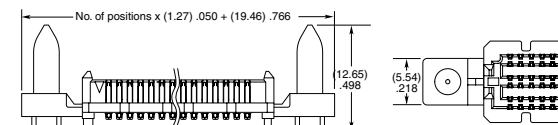
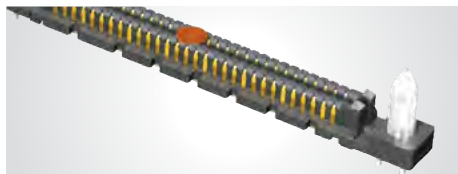
Cable Mates:
SEAC



NO. PINS PER ROW	A	B
-04	(13.77) .542	(7.91) .311
-06	(16.31) .642	(10.45) .411
-08	(18.85) .742	(12.99) .511
-10	(21.39) .842	(15.53) .611

View complete specifications at: samtec.com?SEAM-RA & samtec.com?SEAF-RA

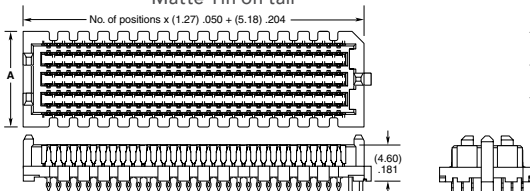
SERIES	POSITIONS PER ROW	02.0	PLATING OPTION	NO. OF ROWS	SOLDER TYPE	A	GP	K	"X"R
SEAM Terminal with Guide post	-20, -30, -40, -50		-L = 10 μ" (0.25 μm) Gold on contact area, Matte Tin on solder tail	-04 -06 -08	-1 = Tin/Lead Alloy Solder Charge				-TR = Tape & Reel
SEAM-GP Board Mates: SEAF-RA-GP			-S = 30 μ" (0.76 μm) Gold on contact area, Matte Tin on solder tail	-10 -08 & -10 Row options require fixturing to process	-2 = Lead-Free Solder Charge				-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

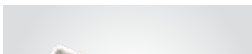
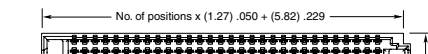


View complete specifications at: samtec.com?SEAM

Note: Some lengths, styles and options are non-standard, non-returnable

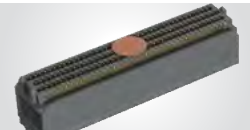
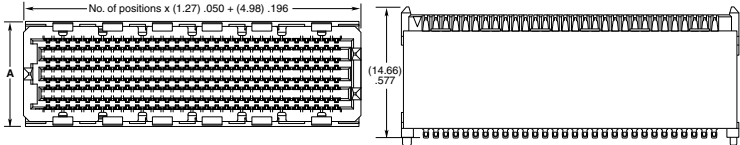
(1.27 mm) .050" PITCH • PRESS-FIT & 85 Ω OPEN-PIN-FIELD ARRAYS

SERIES	POSITIONS PER ROW	LEAD STYLE	PLATING OPTION	NO. OF ROWS	OPTION	PACKAGING										
SEAMP Terminal	-10, -20, -30, -40, -50	-02.0 (SEAMP only)	-L = 10 μ" (0.25 μm) Gold on contact area, Matte Tin on tail	-04, -06, -08, -10	-GP Guide Post (SEAMP only)	-TR = Tape & Reel										
SEAFP Socket		-05.0 (SEAFP only)	-S = 30 μ" (0.76 μm) Gold on contact area, Matte Tin on tail	SEAFP: -04 & -06 Rows only		-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)										
SEAMP Board Mates: SEAF, SEAF-RA-GP, SEAFP				<table><tr><th>NO. OF ROWS</th><th>A</th></tr><tr><td>-04</td><td>(7.06) .278</td></tr><tr><td>-06</td><td>(9.60) .378</td></tr><tr><td>-08</td><td>(12.14) .478</td></tr><tr><td>-10</td><td>(14.68) .578</td></tr></table>			NO. OF ROWS	A	-04	(7.06) .278	-06	(9.60) .378	-08	(12.14) .478	-10	(14.68) .578
NO. OF ROWS	A															
-04	(7.06) .278															
-06	(9.60) .378															
-08	(12.14) .478															
-10	(14.68) .578															
																

SEAFP Board Mates: SEAM, SEAM-RA			<table><tr><th>NO. OF ROWS</th><th>A</th></tr><tr><td>-04</td><td>(5.61) .221</td></tr><tr><td>-06</td><td>(8.15) .321</td></tr></table>	NO. OF ROWS	A	-04	(5.61) .221	-06	(8.15) .321
			NO. OF ROWS	A					
-04	(5.61) .221								
-06	(8.15) .321								
Cable Mates: SEAC									

View complete specifications at: samtec.com?SEAMP & samtec.com?SEAFP. Visit samtec.com?SEAFP-RA for right-angle socket.

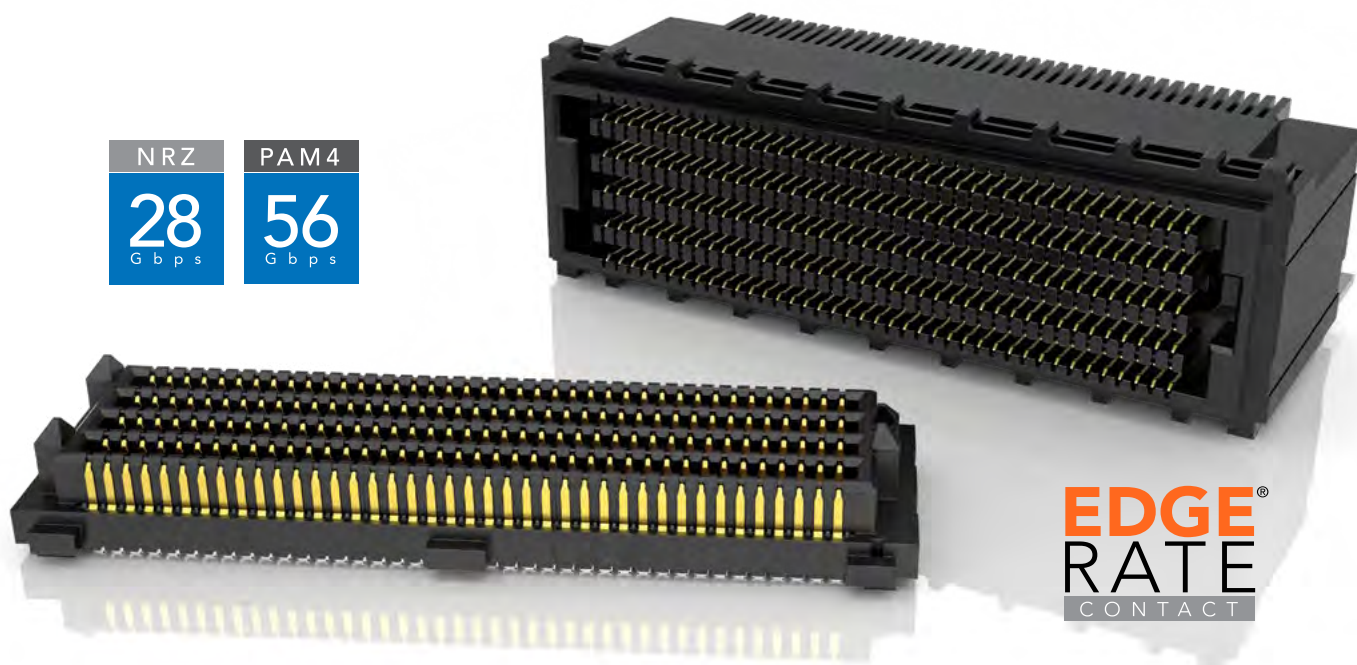
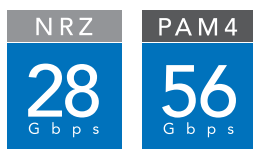
SERIES	POSITIONS PER ROW	LEAD STYLE	NO. OF ROWS	085														
SEAR 85 Ω Tuned Riser	-40, -50	-10.0 = 20 mm Mated Height -20.0 = 30 mm Mated Height -30.0 = 40 mm Mated Height	-06, -08, -10															
SEAR Board Mates: SEAF		<table><tr><th>POSITIONS PER ROW</th><th>A</th></tr><tr><td>-40</td><td>(71.42) 2.812</td></tr><tr><td>-50</td><td>(84.12) 3.312</td></tr></table> <table><tr><th>NO. OF ROWS</th><th>B</th></tr><tr><td>-06</td><td>(11.43) .450</td></tr><tr><td>-08</td><td>(13.97) .550</td></tr><tr><td>-10</td><td>(16.51) .650</td></tr></table>			POSITIONS PER ROW	A	-40	(71.42) 2.812	-50	(84.12) 3.312	NO. OF ROWS	B	-06	(11.43) .450	-08	(13.97) .550	-10	(16.51) .650
POSITIONS PER ROW	A																	
-40	(71.42) 2.812																	
-50	(84.12) 3.312																	
NO. OF ROWS	B																	
-06	(11.43) .450																	
-08	(13.97) .550																	
-10	(16.51) .650																	

SERIES	POSITIONS PER ROW	11.0	PLATING OPTION	NO. OF ROWS	SOLDER TYPE	A	K	"X"R						
SEAMI 85 Ω Tuned Terminal	-40 -50		-L = 10 μ" (0.25 μm) Gold on contact area, Matte Tin on solder tail -S = 30 μ" (0.76 μm) Gold on contact area, Matte Tin on solder tail	-08 -10	-1 = Tin/Lead Alloy SolderCharge -2 = Lead-Free Solder Charge			-TR = Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)						
SEAMI Board Mates: SEAF   <table><tr><th>NO. OF ROWS</th><th>A</th></tr><tr><td>-08</td><td>(13.41) .528</td></tr><tr><td>-10</td><td>(15.95) .628</td></tr></table> Note: Some lengths, styles and options are non-standard, non-returnable View complete specifications at: samtec.com?SEAF & samtec.com?SEAMI									NO. OF ROWS	A	-08	(13.41) .528	-10	(15.95) .628
NO. OF ROWS	A													
-08	(13.41) .528													
-10	(15.95) .628													

SEARAYTM.8mm

ULTRA HIGH-DENSITY, HIGH-SPEED OPEN-PIN-FIELD ARRAYS

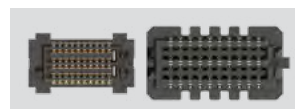
(0.80 mm) .0315" PITCH



EDGE[®]
RATE
CONTACT

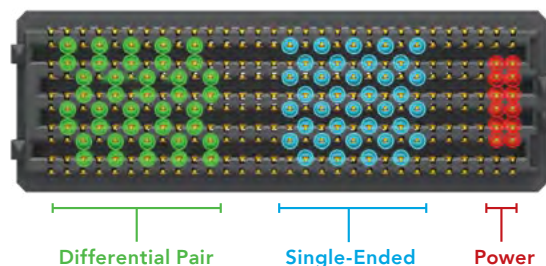
FEATURES & BENEFITS

- 0.80 mm (.0315") pitch grid
- 50% board space savings versus .050" (1.27 mm) pitch arrays
- Performance up to 28 Gbps NRZ/56 Gbps PAM4
- Rugged Edge Rate[®] contact system
- Up to 720 I/Os
- 7 mm and 10 mm stack heights
- Solder charge terminations for ease of processing
- Lower insertion/withdrawal forces



0.80 mm pitch vs. 1.27 mm pitch
(actual size shown; 60 pins)

MAXIMUM GROUNDING & ROUTING FLEXIBILITY



KEY SPECIFICATIONS

PITCH	STACK HEIGHTS	TOTAL PINS	INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	CURRENT RATING	LEAD-FREE SOLDERABLE
0.80 mm	7 mm & 10 mm	up to 720 I/Os	Black LCP	Copper Alloy	Au or Sn over 50 μ " (1.27 μ m) Ni	1.3 A per pin (10 adjacent pins powered)	Yes

(0.80 mm) .0315" PITCH • ULTRA HIGH-DENSITY ARRAYS

SERIES	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	NO. OF ROWS	SOLDER TYPE	OPTION	K	"X"R
SEAM8 Terminal	-10, -20, -30, -40, -50	-S02.0 = 2 mm Body Height (SEAM8 only)	-L = 10 μ" (0.25 μm) Gold on contact area, Matte Tin on solder tail	-04 -06 -08 -10	-2 = Lead-Free Solder Crimp	-GP = Guide Post (-S02.0 lead style only) (Mates with SEAF8-RA-GP)	Leave blank for SEAM8	Tape & Reel is standard. Leave blank for Tape & Reel.
SEAF8 Socket		-S05.0 = 5 mm Body Height (SEAM8 only)	-S = 30 μ" (0.76 μm) Gold on contact area, Matte Tin on solder tail				-K = Polyimide film Pick & Place Pad	-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)
		-05.0 = 5 mm Body Height (SEAF8 only)						

NO. OF ROWS	A
-04	(4.30) .169
-06	(6.30) .248
-08	(8.30) .327
-10	(10.30) .406

LEAD STYLE	B
-S02.0	(4.54) .179
-S05.0	(7.54) .297

SEAF8	NO. PINS PER ROW	1	PLATING OPTION	NO. OF ROWS	SOLDER TYPE	RA	OPTION	"X"R
	-20, -30, -40, -50		-L = 10 μ" (0.25 μm) Gold on contact area, Matte Tin on solder tail	-08 -10	-2 = Lead-Free Solder Crimp		-GP = Guide Post Holes	Tape & Reel is standard. Leave blank for Tape & Reel.
			-S = 30 μ" (0.76 μm) Gold on contact area, Matte Tin on solder tail					-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

SEAF8 LEAD STYLE	SEAM8 LEAD STYLE
-05.0	-S02.0 (7.00) .276
	-S05.0 (10.00) .394

*Processing conditions will affect mated height.

View complete specifications at: samtec.com?SEAF8

SEAF8	NO. PINS PER ROW	1	PLATING OPTION	NO. OF ROWS	SOLDER TYPE	RA	OPTION	"X"R
	-20, -30, -40, -50		-L = 10 μ" (0.25 μm) Gold on contact area, Matte Tin on solder tail	-08 -10	-2 = Lead-Free Solder Crimp		-GP = Guide Post Holes	Tape & Reel is standard. Leave blank for Tape & Reel.
			-S = 30 μ" (0.76 μm) Gold on contact area, Matte Tin on solder tail					-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

NO. OF ROWS	A	B
-08	(16.48) .649	(11.46) .451
-10	(18.48) .728	(13.46) .530

NO. PINS PER ROW	C	D
-20	(29.62) 1.166	(24.12) .950
-30	(37.62) 1.481	(32.12) 1.265
-40	(45.62) 1.796	(40.12) 1.580
-50	(53.62) 2.111	(48.12) 1.894

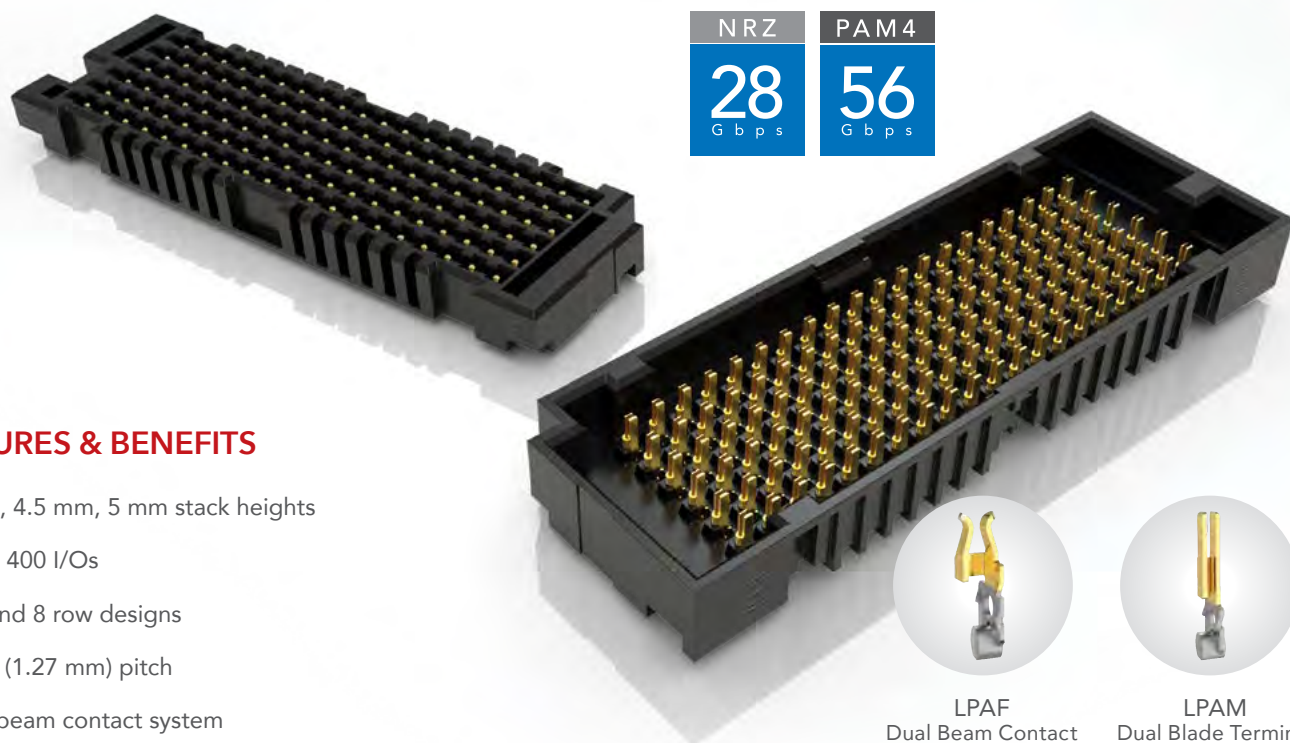
Notes:
Some sizes, styles and options are non-standard, non-returnable

View complete specifications at: samtec.com?SEAF8-RA



LOW-PROFILE OPEN-PIN-FIELD ARRAYS

(1.27 mm) .050" PITCH



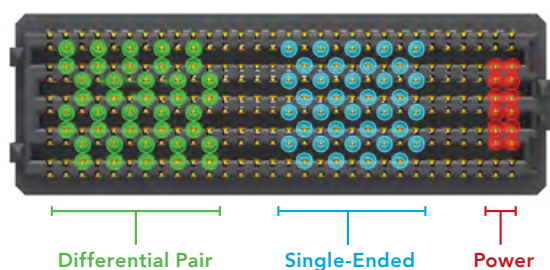
FEATURES & BENEFITS

- 4 mm, 4.5 mm, 5 mm stack heights
- Up to 400 I/Os
- 4, 6 and 8 row designs
- .050" (1.27 mm) pitch
- Dual beam contact system
- Solder crimp termination for ease of processing
- Board stacking standoffs available to assist unmating and reduce risk for component damage on board



LPAM Series; 120 pins
(actual size shown)

MAXIMUM GROUNDING & ROUTING FLEXIBILITY



KEY SPECIFICATIONS

PITCH	TOTAL PINS	INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	CURRENT RATING	WORKING VOLTAGE	LEAD-FREE SOLDERABLE
1.27 mm x 1.27 mm	Up to 400 I/Os	Black LCP	Copper Alloy	Au or Sn over 50 μ " (1.27 μ m) Ni	2.2 A per pin (8 adjacent pins powered)	250 VAC	YES

(1.27 mm) .050" PITCH • LOW-PROFILE OPEN-PIN-FIELD ARRAYS

SERIES	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	NO. OF ROWS	SOLDER TYPE	K	"X"R
LPAM Terminal	-10, -20, -30, -40,	-01.0 = (1.0 mm) .039" (LPAM only)	-L = 10 μ" (0.25 μm) Gold on contact area, Matte Tin on solder tail	-04 -06 -08	-1 = Tin/Lead Alloy Solder Crimp	-K = Polyimide film Pick & Place Pad	
LPAF Socket	-50 (-08 rows only)	-01.5 = (1.5 mm) .060" (LPAM only)	-S = 30 μ" (0.76 μm) Gold on contact area, Matte Tin on solder tail		-2 = Lead-Free Solder Crimp	-TR = Tape & Reel	-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)
		-03.0 = (3.0 mm) .118" (LPAF only)					
		-03.5 = (3.5 mm) .138" (LPAF only)					

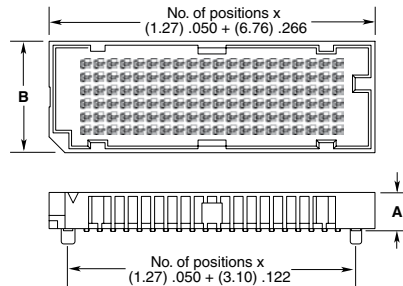
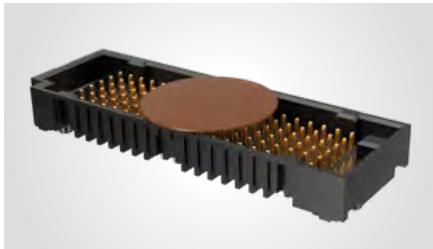
LPAM

Board Mates:

LPAF

Standoffs:

JSO, SO



NO. OF ROWS	B
-04	(8.18) .322
-06	(10.72) .422
-08	(13.26) .522

LEAD STYLE	A
-01.0	(3.68) .145
-01.5	(4.19) .165

View complete specifications at: samtec.com?LPAM

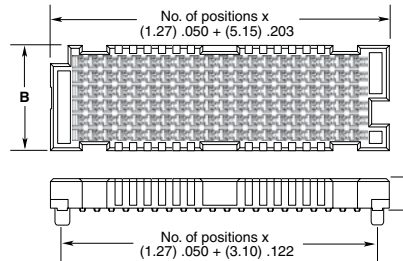
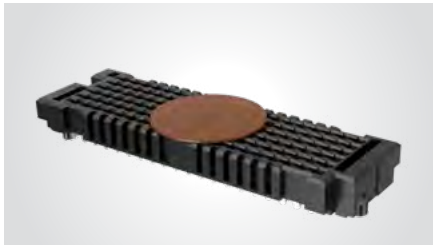
LPAF

Board Mates:

LPAM

Standoffs:

JSO, SO



NO. OF ROWS	B
-04	(6.71) .264
-06	(9.25) .364
-08	(11.79) .464

LEAD STYLE	A
-03.0	(2.79) .110
-03.5	(3.30) .130

MATED HEIGHTS*

LPAM LEAD STYLE	LPAF LEAD STYLE	
	-03.0	-03.5
-01.0	(4.00) .157	(4.50) .177
-01.5	(4.50) .177	(5.00) .197

*Processing conditions will affect mated height.

Notes:

Some sizes, styles and options are non-standard, non-returnable

View complete specifications at: samtec.com?LPAF

JACK SCREW STANDOFF

JSO SERIES



SPECIFICATIONS

Material:
Stainless Steel
Locking Compound:
Nylon

JSO

BOARD STACKER

LEAD STYLE

PLATING OPTION

Specify
BOARD STACKER
from chart

-01
= Press-In
(-0415, -0515, -0715, -0815 only)

-03
= Male Thread
(-0815, -1015, -1115, -1615 only)

-L
= Locking compound
(Not available with -01 lead style,
Required for -03 lead style)

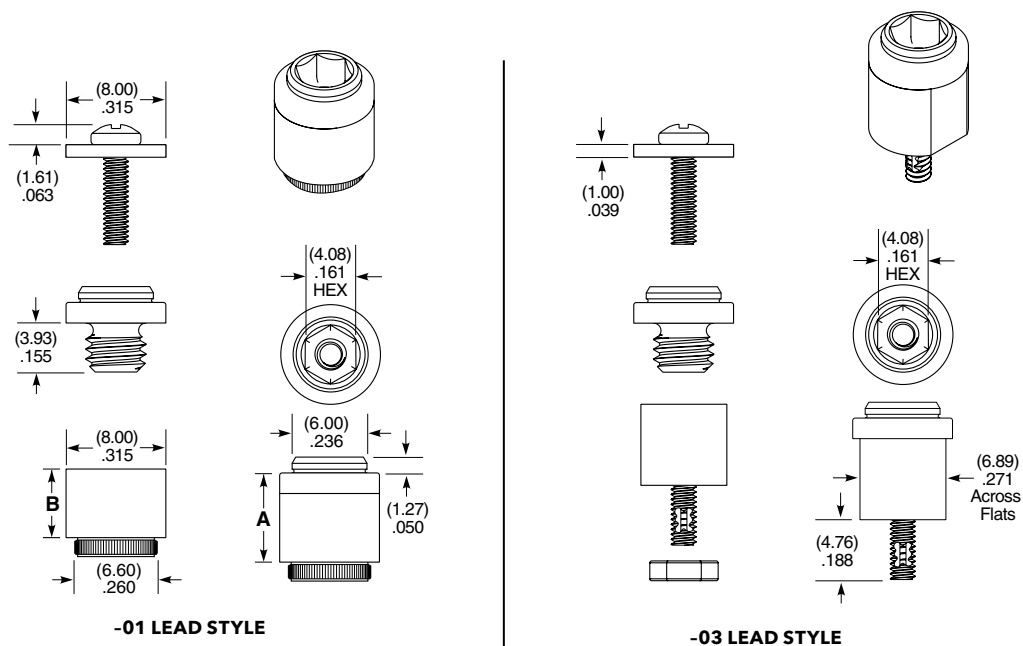
BOARD STACKER	A	B	BOARD STACK HEIGHT
-0415	(4.15) .163	(2.50) .098	4 mm
-0515	(5.15) .203	(3.50) .138	5 mm
-0715	(7.15) .281	(5.50) .217	7 mm
-0815	(8.15) .321	(6.50) .256	8 mm
-1015	(10.15) .400	(8.50) .335	10 mm
-1115	(11.15) .439	(9.50) .374	11 mm
-1615	(16.15) .636	(14.50) .571	16 mm

ALSO AVAILABLE MOQ Required

Other heights
Locking compound removed

Notes:
Standoffs are designed,
0.15 mm longer than
connector stack heights to
allow for processing variables.

Some sizes, styles and
options are non-standard,
non-returnable.

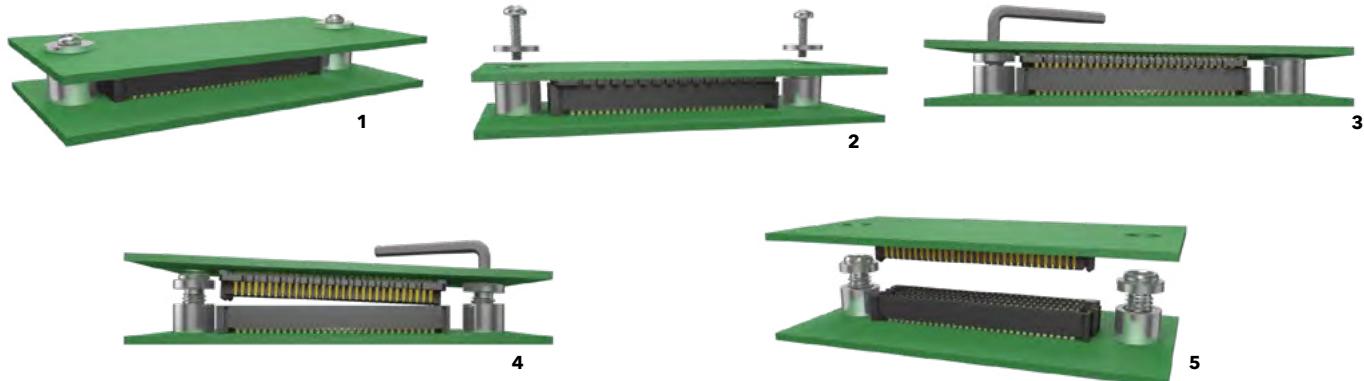


-01 LEAD STYLE

-03 LEAD STYLE

Components are to be packaged in separate bags unassembled.

APPLICATION

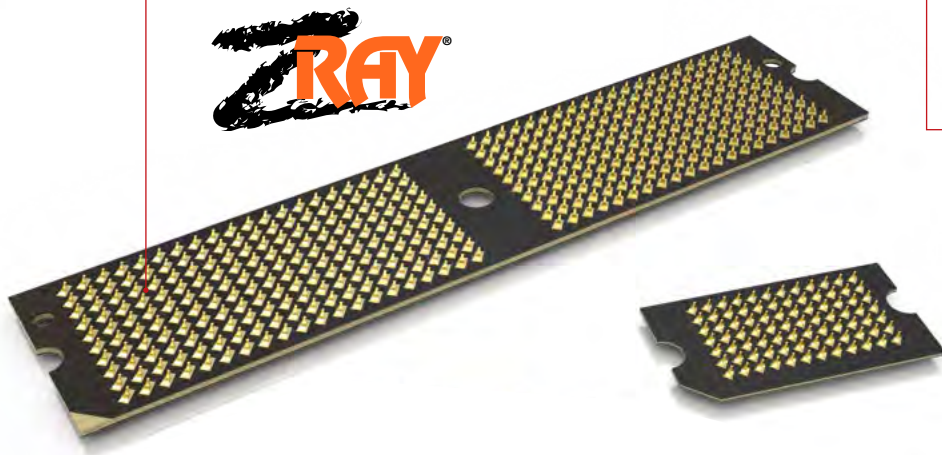


HIGH-SPEED COMPRESSION INTERPOSERS

HIGH DENSITY • ULTRA-LOW PROFILE • HIGHLY CUSTOMIZABLE

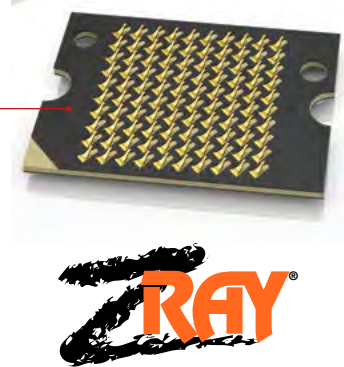
32-33

0.80 mm PITCH Z-RAY® HIGH-SPEED
COMPRESSION INTERPOSERS (ZA8, ZA8H)



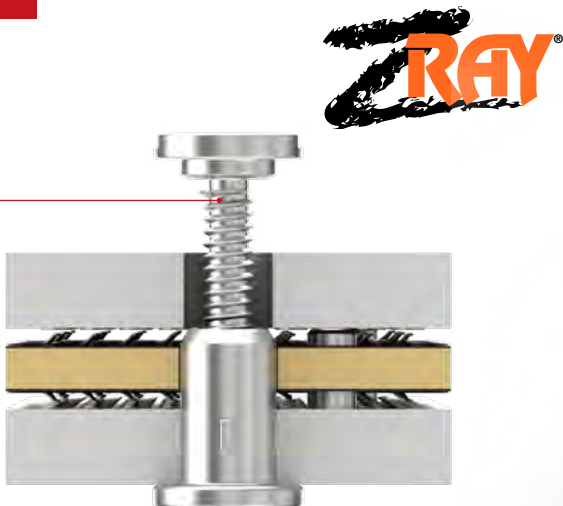
34

1.00 mm PITCH Z-RAY® HIGH-SPEED
COMPRESSION INTERPOSERS (ZA1)



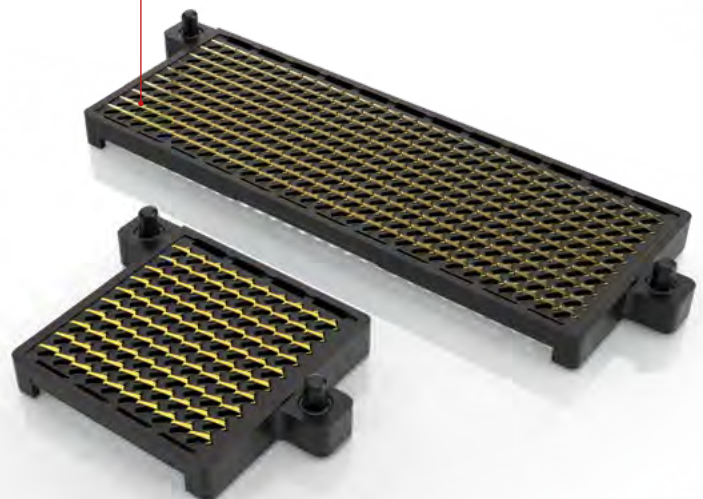
35

Z-RAY® COMPRESSION HARDWARE
(ZD, ZSO, ZHSI)



36

1.00 mm PITCH LOW-PROFILE
COMPRESSION INTERPOSERS (GMI)





HIGH-SPEED COMPRESSION INTERPOSER

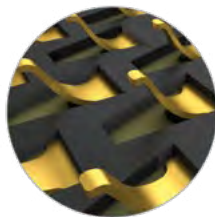
(0.80 mm) .0315" AND (1.00 mm) .0394" PITCH

FEATURES & BENEFITS

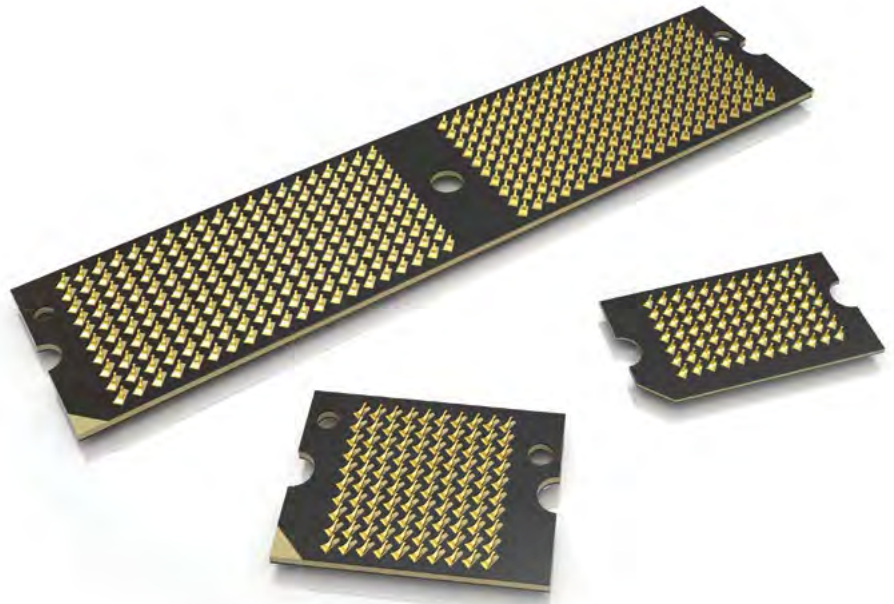
- Dual compression contacts or single compression with solder balls
- BeCu Micro-formed contacts
- Performance up to 14 Gbps (ZAX Series) and 56 Gbps (ZA8H Series)
- Low-profile body height for a short signal path
- Highly customizable solutions
- Visit samtec.com?ZRDP for ultra-low profile Z-Ray® cable assembly



Solder Ball Option

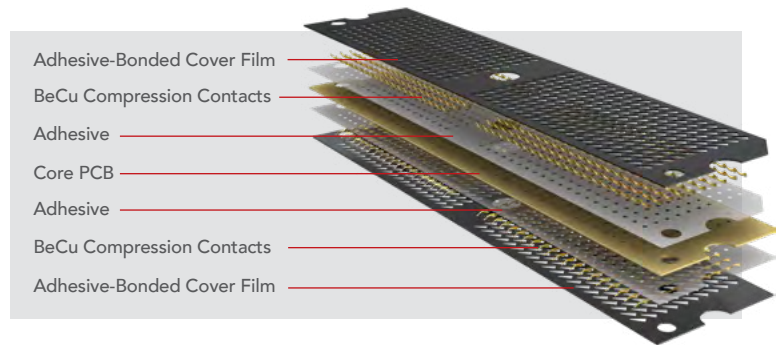


BeCu Compression Contacts



Design & Construction

- One-piece design assembled into rugged low profile FR4 substrate under high pressure and temperature
- Built standard with a 1 mm board-to-board thickness
- Contacts are designed using BeCu foils that have been formed into the "beam" structure

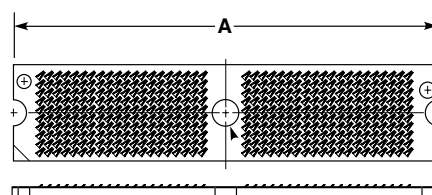
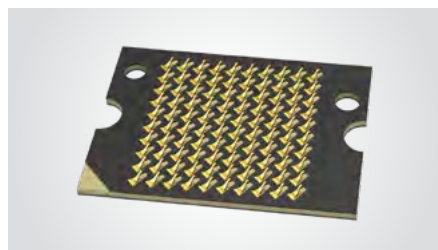


PERFORMANCE SPECIFICATIONS

Single Compression w/ Solder Balls			Dual Compression		
Series	ZA8	ZA1	ZA8	ZA1	ZA8H
Pitch	0.80 mm	1.00 mm	0.80 mm	1.00 mm	0.80 mm
Max Row	25	20	50	58	50
Max Column	25	20	50	58	50
Thickness	Kapton Core	N/A	0.33 mm	0.33 mm	0.33 mm
	FR4 Core	1.00 to 3 mm	0.5 to 3 mm	0.5 to 3 mm	N/A
Thickness Tolerance	Kapton Core	N/A	±5%	±5%	±5%
	FR4 Core	±10%	±10%	±10%	N/A
Deflection / Normal Force per Pin	0.20 mm / 30g				
Operating Temperature	-55°C to +105°C (Single Cycle only above 85°C)				

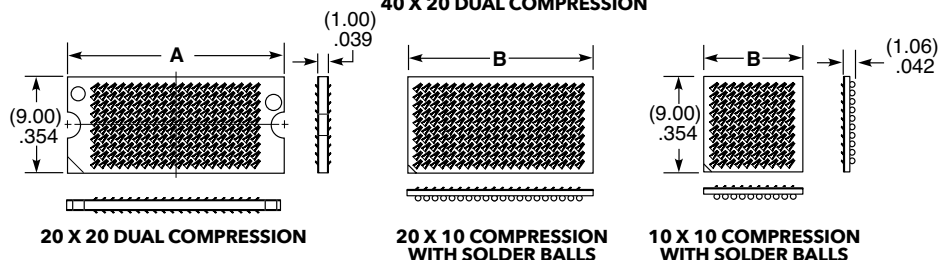
(0.80 mm) .0315" PITCH • HIGH-SPEED COMPRESSION INTERPOSER

ZA8	POSITIONS PER ROW	TERMINATION	HEIGHT	PLATING OPTION	NO. OF ROWS	SOLDER TYPE
	-10, -20, -30, -40	-1 = Single Compression with Solder Balls (-10 & -20 positions only)	-1.00 = (1.00 mm) .040" Height	-Z = 6 μ " (0.15 μ m) Gold in contact area	-10 = Ten Rows	(Termination -1 only) -1 = Lead -2 = Lead-Free
		-2 = Dual Compression (-10, -20, -30 & -40 positions only)				



POSITIONS PER ROW	A	B
-10	(12.50) .492	(9.35) .368
-20	(20.50) .807	(17.35) .683
-30	(31.70) 1.248	N/A
-40	(39.70) 1.563	N/A

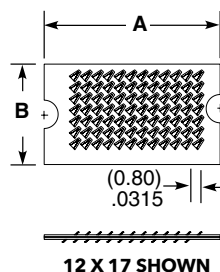
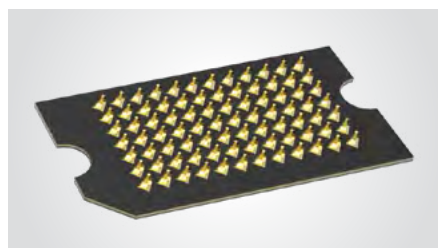
40 X 20 DUAL COMPRESSION



NRZ
14
Gbps

View complete specifications at: samtec.com?ZA8

ZA8H	NO. OF POSITIONS	HEIGHT	PLATING OPTION	NO. OF ROWS
	-06, -12, -24 (See Chart Below For Number of Pairs)	-0.33 = (0.33 mm) .013" Height	-Z = 6 μ " (0.15 μ m) Gold in contact over 40 μ " to 100 μ " (1.02 μ m - 2.54 μ m) Nickel	-04 = Four Rows -07 = Seven Rows



NO. OF POSITIONS	A
-06	(7.80) .307
-12	(12.60) .496
-24	(22.20) .874

NO. OF ROWS	B
-04	(4.70) .185
-07	(7.10) .280

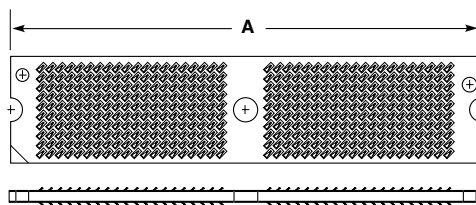
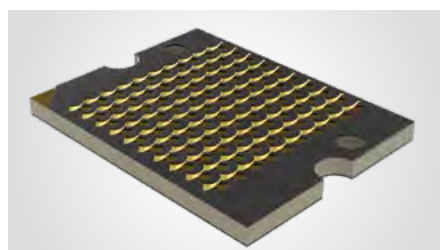
NRZ
56
Gbps

Notes:
Some sizes, styles and
options are non-standard,
non-returnable

View complete specifications at: samtec.com?ZA8H

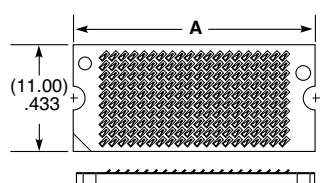
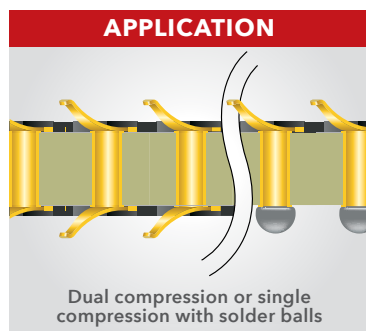
(1.00 mm) .0394" PITCH • HIGH-SPEED COMPRESSION INTERPOSER

ZA1	POSITIONS PER ROW	TERMINATION	HEIGHT	PLATING OPTION	NO. OF ROWS	SOLDER TYPE
	-10, -20, -30, -40	-1 = Single Compression with Solder Balls (-10 & -20 positions only) -2 = Dual Compression (-10, -20, -30 & -40 positions only)	-1.00 = (1.00 mm) .040" Height	-Z = 6 μ " (0.15 μ m) Gold in contact area	-10 = Ten Rows	(Termination -1 only) -1 = Lead -2 = Lead-Free

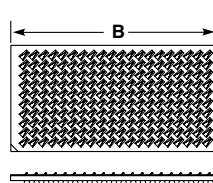


40 X 10 DUAL COMPRESSION

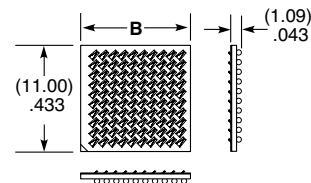
POSITIONS PER ROW	A	B
-10	(14.30) .563	(11.40) .449
-20	(24.30) .957	(21.40) .843
-30	(38.30) 1.508	N/A
-40	(48.30) 1.902	N/A



20 X 10 DUAL COMPRESSION



20 X 10 COMPRESSION WITH SOLDER BALLS

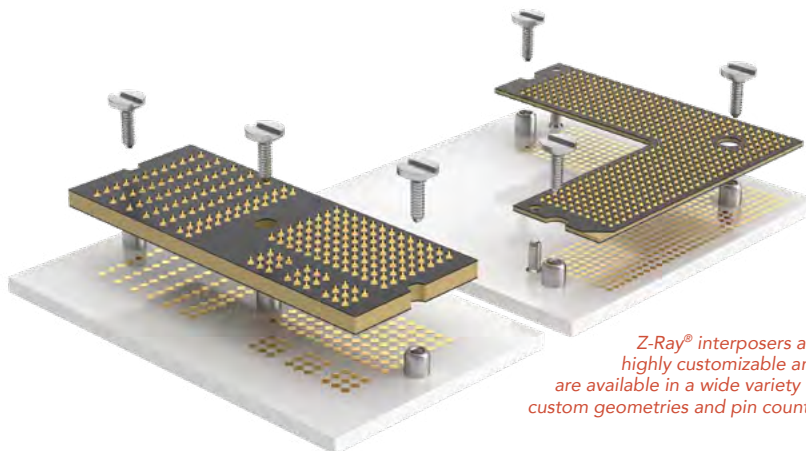


10 X 10 COMPRESSION WITH SOLDER BALLS

View complete specifications at: samtec.com?ZA1

Ultimate Design Flexibility

- Configurations for any application, complete with detailed footprints
- Customer-specific stack heights, pin counts, insulator shapes and plating thicknesses
- Customizable in X-Y-Z axes
- Quick-turn customization with minimal NRE and tooling charges
- Various compression and alignment configurations



Z-Ray® interposers are highly customizable and are available in a wide variety of custom geometries and pin counts.

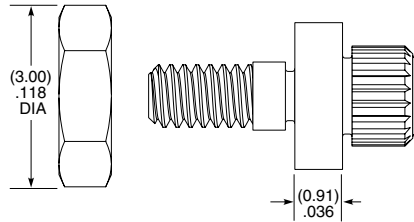
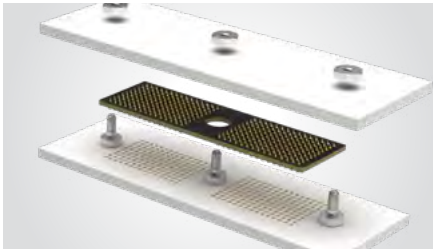
PRESS-FIT ALIGNMENT HARDWARE

ZSO

STACK HEIGHT

01

-0100
= 1.00 mm (.0394")



View complete specifications at: samtec.com?ZSO

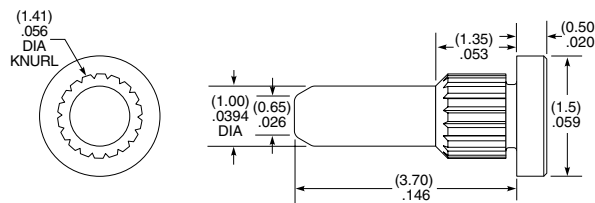
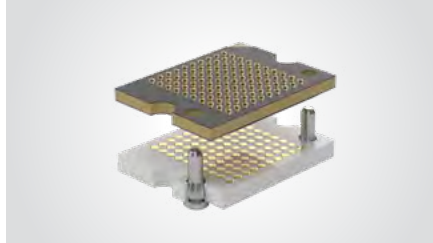
ZD

DIAMETER

LENGTH

-1.00
= 1.00 mm (.0394")

-03.7
= 03.7 mm (.146")



View complete specifications at: samtec.com?ZD

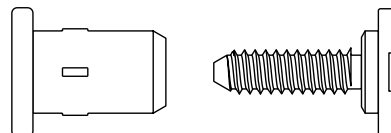
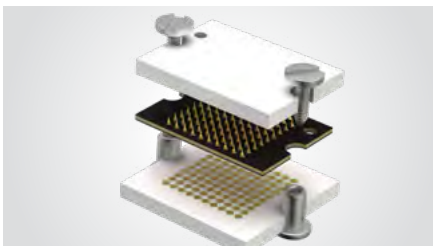
ZHSI

STACK HEIGHT

HEAD SPECIFICATION

Specify STACK HEIGHT from chart below

-01
= Slot Head



STACK HEIGHT	PCB 1 THICKNESS	PCB 2 THICKNESS	INTERPOSER HEIGHT
-01	(1.57) 0.062	(1.57) 0.062	(1.00) 0.039
-02	(2.36) 0.093	(1.57) 0.062	(1.00) 0.039
-02	(2.36) 0.093	(2.36) 0.065	(1.00) 0.039
-02	(3.18) 0.125	(1.57) 0.062	(1.00) 0.039
-03	(3.18) 0.125	(2.36) 0.093	(1.00) 0.039

Notes:
Some sizes, styles and options are non-standard, non-returnable

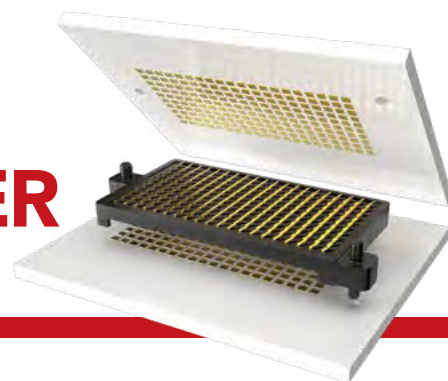
View complete specifications at: samtec.com?ZHSI

PAM4

56
Gbps

LOW-PROFILE COMPRESSION INTERPOSER

(1.00 mm) .0394" PITCH • GMI SERIES



SPECIFICATIONS

Insulator Material:

Black LCP

Contact Material:

Copper Alloy

Plating:

Au or 50 μ " (1.27 μ m) Ni

Current Rating:

.89 A per pin
(10 pins powered)

GMI

POSITIONS
PER ROW

-10, -20, -30

STYLE

-2
= Dual
CompressionBOARD
SPACING-1.27
= (1.27 mm) .050"
Board SpacePLATING
OPTION-G
= 10 μ "
(0.25 μ m)
Gold on
contact area

ROWS

-10
= Ten Rows

PROCESSING

Lead-Free Solderable:

Yes

SMT Lead Complanarity:

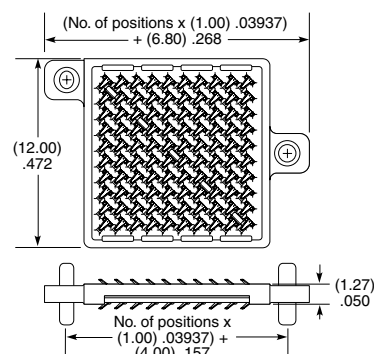
(0.05 mm) .002" (10-20)*

(0.08 mm) .003" (30)*

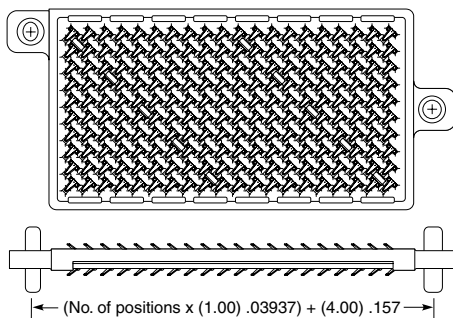
*(.004" stencil solution

may be available;

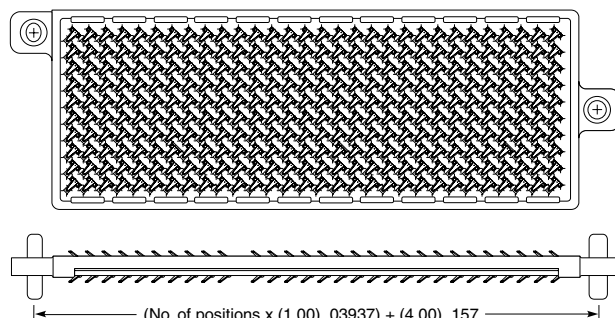
contact ipg@samtec.com)



10 X 10



20 X 10



30 X 10

Notes:

Some lengths, styles and options
are non-standard, non-returnable

HIGH-SPEED MEZZANINE SYSTEMS

25+ Gbps PERFORMANCE • INTEGRAL GROUND PLANE • EDGE RATE® CONTACTS

39-41

Q STRIP® INTEGRAL GROUND PLANE INTERCONNECTS

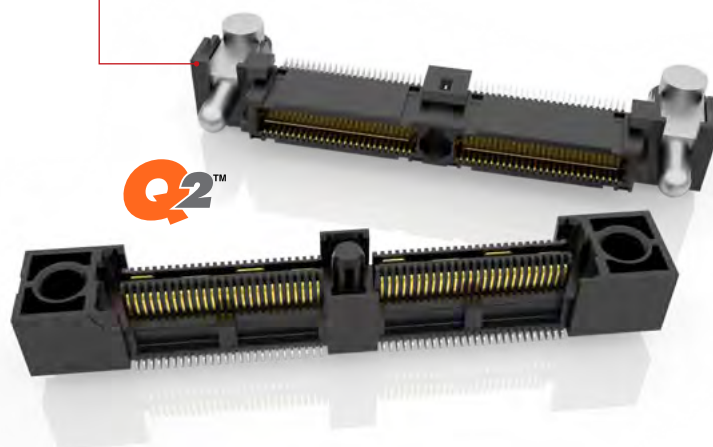
0.50 mm (.0197") Pitch (QTH, QSH)
0.80 mm (.0315") Pitch (QTE, QSE)
0.635 mm (.025") Pitch (QTS, QSS)



42-43

Q2™ RUGGED INTEGRAL GROUND PLANE INTERCONNECTS

0.635 mm (.025") Pitch (QMS, QFS)
0.635 mm (.025") Pitch Shielded (QMSS, QFSS)



44

Q RATE® SLIM BODY INTEGRAL GROUND PLANE INTERCONNECTS

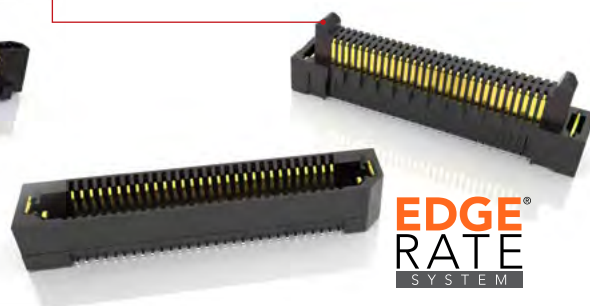
0.80 mm (.0315") Pitch (QRM8, QRF8)



49-54

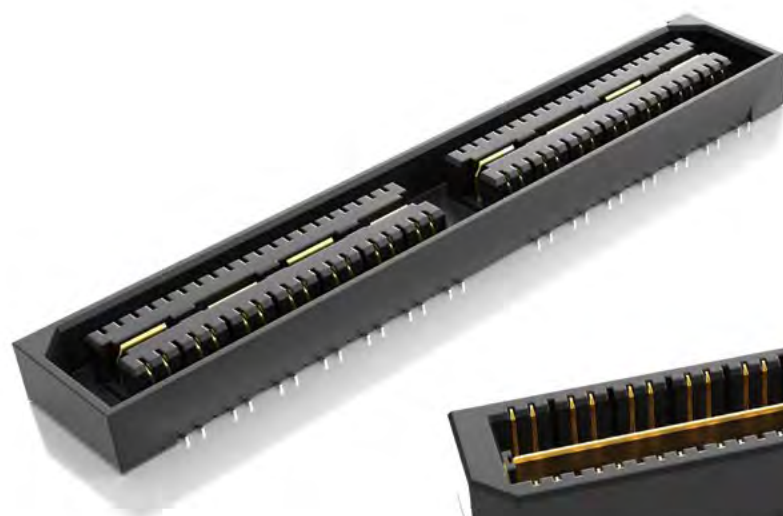
EDGE RATE® RUGGED HIGH-SPEED INTERCONNECTS

0.50 mm (.0197") Pitch (ERM5, ERF5)
0.635 mm (.025") Pitch (ERM6, ERF6)
0.80 mm (.0315") Pitch (ERM8, ERF8)





HIGH-SPEED GROUND PLANE MEZZANINE CONNECTORS



NRZ
25
Gbps

NRZ
28
Gbps



FEATURES & BENEFITS

- Designed for high-speed board-to-board applications where signal integrity is essential
- Q Strip® low-profile connectors on 0.50 mm, 0.635 mm and 0.80 mm pitches
- Q Rate® slim connectors with Edge Rate® contacts on 0.80 mm pitch with a 1.20 mm contact wipe
- Q2™ rugged connectors on 0.635 mm pitch with increased insertion depth for rugged applications
- Right-angle, edge mount, EMI shielding, power and RF options
- Differential pair and single-ended routing



Differential Pairs
Reduce Noise



Rugged Edge Rate®
Contact System



Power, Retention
& RF Options



Precision Board
Stacking Standoffs

INTEGRAL GROUND / POWER PLANE

- Surface mount ground plane between two signal rows improves electrical performance
- Significantly reduces row-to-row crosstalk
- Integral metal plane for power to 25 Amps





NRZ
25
Gbps



(0.50 mm) .0197" PITCH • QTH/QSH SERIES

QTH
Board Mates:
QSH

QSH
Board Mates:
QTH

QTH/QSH
Cable Mates:
HQCD, HQDP

Standoffs:
SO

SPECIFICATIONS

Insulator Material:
Liquid Crystal Polymer
Contact Material:
Phosphor Bronze
Plating:
Au or Sn over
50 μ " (1.27 μ m) Ni
Current Rating:
Contact:
2 A per pin (2 pins powered)
Ground Plane:
25 A per ground plane
(1 ground plane powered)
Operating Temp Range:
-55 °C to +125 °C
Voltage Rating:
175 VAC (5 mm Stack Height)
Max Cycles:
100

QTH LEAD STYLE	A	HEIGHT WITH QSH*
-01	(4.27) .168	(5.00) .197
-02	(7.26) .286	(8.00) .315
-03	(10.27) .404	(11.00) .433
-04	(15.25) .600	(16.00) .630
-05	(18.26) .718	(19.00) .748
-07	(24.24) .954	(25.00) .984
-09	(13.26) .522	(14.00) .551

*Processing conditions will affect mated height. See SO Series for board space tolerances.

LEAD STYLE
Specify LEAD STYLE from chart

PLATING OPTION

-F
= Gold flash on contact, Matte Tin on tail

-L
= 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail

-C
= 50 μ " (1.27 mm) Electro-Polished Selective Gold on contact, Matte Tin on tail (passes 10 year MFG testing)

TYPE

-D
= Single-Ended

-D-DP
= Differential Pair (-01 only)

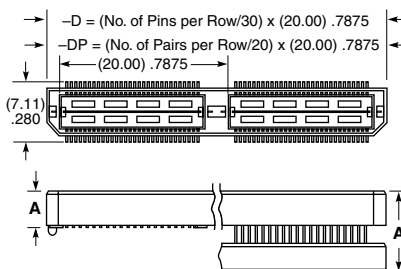
OTHER OPTIONS

-K
= (7.00 mm) .275" DIA Polyimide film Pick & Place Pad (N/A with -05 & -07 lead style)

-L
= Latching Option (-01 lead style only) (N/A on -060 (-D-DP) & -090)

-TR
= Tape & Reel

-FR
= Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)



-01 & -02

-03 thru -09



PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max (030-060)
(0.15 mm) .006" max (090)*
*(.004" stencil solution may be available; contact IPG@samtec.com)
Board Stacking:
For applications requiring more than two connectors contact ipg@samtec.com

STANDARDS

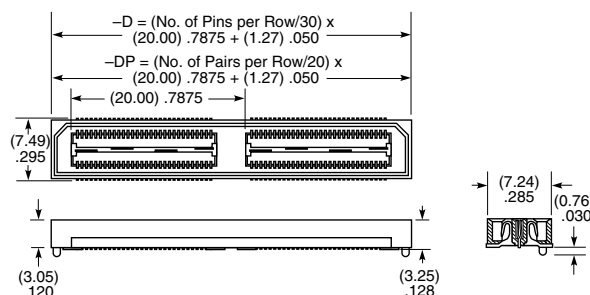
PISMO™ 1:
Visit samtec.com/standards for more information.



Note:
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?QTH

QSH	PINS PER ROW NO. OF PAIRS	01	PLATING OPTION	TYPE	A	OTHER OPTIONS
	-030, -060, -090 (60 total pins per bank = -D)		-F = Gold flash on contact, Matte Tin on tail	-D = Single-Ended		-K = (8.25 mm) .325" DIA Polyimide film Pick & Place Pad
	-020, -040, -060 (20 pairs per bank = -D-DP)		-L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail	-D-DP = Differential Pair (-01 only)		-L = Latching Option (-01 lead style only) (N/A on -060 (-D-DP) & -090)
			-C = 50 μ " (1.27 mm) Electro-Polished Selective Gold on contact, Matte Tin on tail (passes 10 year MFG testing)			-TR = Tape & Reel
						-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)



View complete specifications at: samtec.com?QSH

See pg 46-47 for Right-Angle & Edge Mount options.



QTE Board Mates: QSE

QSE Board Mates: QTE

QTE/QSE

Cable Mates: EQCD, EQDP

Standoffs: SO

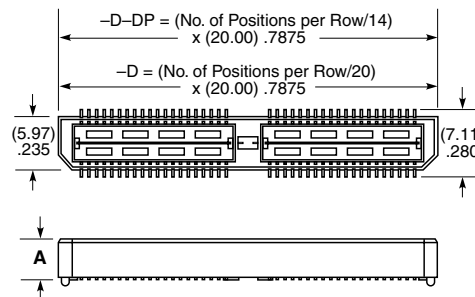
SPECIFICATIONS

Insulator Material:
Liquid Crystal Polymer
Contact Material:
Phosphor Bronze
Plating:
Au or Sn over
50 μ" (1.27 μm) Ni
Current Rating:
Contact:
2 A per pin (2 pins powered)
Ground Plane:
23 A per ground plane
(1 ground plane powered)
Operating Temp Range:
-55 °C to +125 °C
Voltage Rating:
225 VAC when mated & 5 mm Stack Height
Max Cycles:
100

QTE	PINS PER ROW NO. OF PAIRS	LEAD STYLE	PLATING OPTION	TYPE	A	OTHER OPTIONS
	-020, -040, -060 (40 total pins per bank = -D)	Specify LEAD STYLE from Chart	-F = Gold flash on contact, Matte Tin on tail	-D = Single- Ended		-K = (7.00 mm) .275" DIA Polyimide film Pick & Place Pad
	-014, -028, -042 (14 pairs per bank = -D-DP)		-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail	-D-DP = Differential Pair (-01 only)		-L = Latching Option (N/A on -042 & -060 positions)
			-C = 50 μ" (1.27 mm) Electro- Polished Selective Gold on contact, Matte Tin on tail (passes 10 year MFG testing)			-TR = Tape & Reel (N/A -05 & -07 Lead Style)

QTE LEAD STYLE	A	HEIGHT WITH QSE*
-01	(4.27) .168	(5.00) .197
-02	(7.26) .286	(8.00) .315
-03	(10.27) .404	(11.00) .433
-04	(15.25) .600	(16.00) .630
-05	(18.26) .718	(19.00) .748
-07	(24.24) .954	(25.00) .984
-09	(13.26) .522	(14.00) .551

*Processing conditions will affect mated height. See SO Series for board space tolerances.



-FR
= Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks)
(N/A -05 & -07 Lead Style)

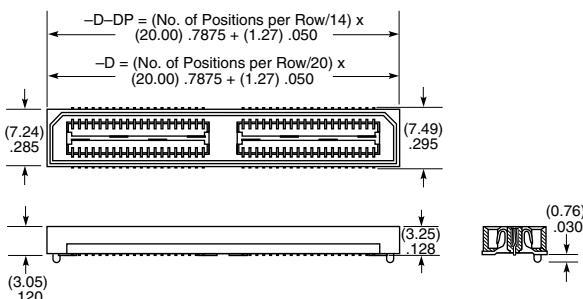
View complete specifications at: samtec.com?QTE

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max
(020-060)
Board Stacking:
For applications requiring more than two connectors contact ipg@samtec.com



QSE	PINS PER ROW NO. OF PAIRS	01	PLATING OPTION	TYPE	A	OTHER OPTIONS
	-020, -040, -060 (40 total pins per bank = -D)		-F = Gold flash on contact, Matte Tin on tail	-D = Single- Ended		-GP = Guide Post (-020 only)
	-014, -028, -042 (14 pairs per bank = -D-DP)		-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail	-D-DP = Differential Pair (-01 only)		-K = (8.25 mm) .325" DIA Polyimide Film Pick & Place Pad
			-C = 50 μ" (1.27 mm) Electro- Polished Selective Gold on contact, Matte Tin on tail (passes 10 year MFG testing)			-L = Latching Option (N/A on -042 & -060 positions)



Note:
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?QSE



(0.635 mm) .025" PITCH • QTS/QSS SERIES



QTS
Board Mates:
QSS

QSS
Board Mates:
QTS

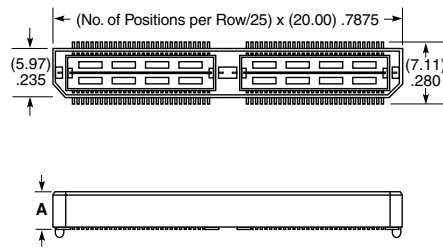
QTS/QSS
Cable Mates:
SQCD

Standoffs:
SO

QTS	NO. OF POSITIONS PER ROW	LEAD STYLE	PLATING OPTION	D	A	OTHER OPTIONS
	-025, -050, -075 (50 total positions per bank)	Specify LEAD STYLE from Chart	-F = Gold flash on contact, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail -C = 50 μ " (1.27 mm) Electro-Polished Selective Gold on contact, Matte Tin on tail (passes 10 year MFG testing)			-K = (7.00 mm) .275" DIA Polyimide film Pick & Place Pad -TR = Tape & Reel -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks)

SPECIFICATIONS

Insulator Material:
Liquid Crystal Polymer
Contact Material:
Phosphor Bronze
Plating:
Au or Sn over
50 μ " (1.27 μ m) Ni
Current Rating:
Contact:
1.8 A per pin (2 pins powered)
Ground Plane:
23.1 A per ground plane
(1 ground plane powered)
Operating Temp Range:
-55 °C to +125 °C
Voltage Rating:
285 VAC
Max Cycles:
100



QTS LEAD STYLE	A	MATED HEIGHT WITH QSS
-01	(4.27) .168	(5.00) .197
-02	(7.26) .286	(8.00) .315

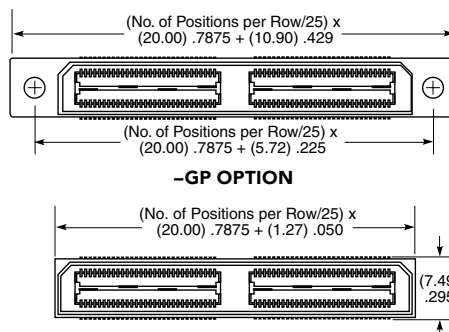
*Processing conditions will affect mated height. See SO Series for board space tolerances.

View complete specifications at: samtec.com?QTS

PROCESSING

Lead-Free Solderable:
Yes
QTS SMT Lead Coplanarity:
(0.10 mm) .004" max
(025-075)
QSS SMT Lead Coplanarity:
(0.10 mm) .004" max
(025-050)
(0.15 mm) .006" max (075)*
*(.004" stencil solution may be available; contact ipg@samtec.com)
Board Stacking:
For applications requiring more than two connectors contact ipg@samtec.com

QSS	NO. OF POSITIONS PER ROW	01	PLATING OPTION	D	A	OTHER OPTIONS
	-025, -050, -075 (50 total positions per bank)		-F = Gold flash on contact, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail -C = 50 μ " (1.27 mm) Electro-Polished Selective Gold on contact, Matte Tin on tail (passes 10 year MFG testing)			-GP = Guide Holes for mating with QTS-RA -K = (8.25 mm) .325" DIA Polyimide Film Pick & Place Pad -TR = Tape & Reel -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks)



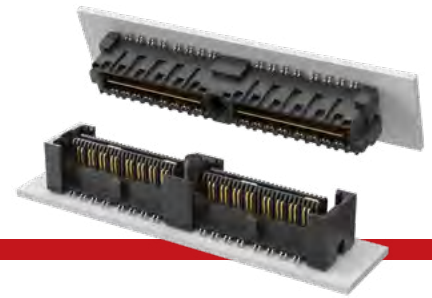
See pg 46-47 for Right-Angle & Edge Mount options.

Note:
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?QSS



NRZ
25
Gbps



(0.635 mm) .025" PITCH • QMS/QFS SERIES

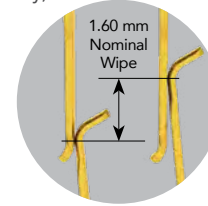
QMS
Board Mates:
QFS

QFS
Board Mates:
QMS

QMS/QFS
Cable Mates:
6QCD

Standoffs:
SO, JSOM

QMS	PINS PER ROW NO. OF PAIRS	LEAD STYLE	PLATING OPTION	TYPE	A	OTHER OPTION
	-026, -052, -078 (52 total pins per bank = -D)	Specify LEAD STYLE from Chart	-L = 10 μ" (0.25 μm) gold on contact, Matte Tin on tail (-05.75 & -06.75 Lead Style Only)	-D = Single- Ended -D-DP = Differential Pair		-K = (5.50 mm) .217" DIA Polyimide film Pick & Place Pad
	-016, -032, -048 (16 pairs per bank = -D-DP) (-078 & -048 N/A with -09.75 Lead Style)		-SL = 10 μ" (0.25 μm) gold on contact, Matte Tin on tail (-09.75 Lead Style Only)			



PACKAGING OPTION

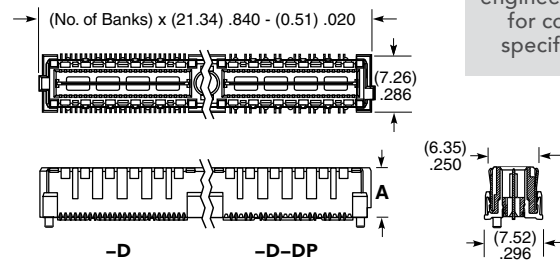
Tape & Reel
Options (-TR &
-FR) available.
Visit series web
page and view
engineering prints
for complete
specifications.

SPECIFICATIONS

Insulator Material:
Liquid Crystal Polymer
**Contact & Ground
Plane Material:**
Phosphor Bronze
Plating:
Au over 50 μ" (1.27 μm) Ni
(Tin on Ground Plane Tail)
Current Rating:
Contact:
2.6 A per pin (2 pins powered)
Ground Plane:
15.7 A per ground plane
(1 ground plane powered)
Operating Temp Range:
-55 °C to +125 °C
Voltage Rating:
300 VAC when mated

MATED HEIGHT*			
QMS LEAD STYLE	A	QFS LEAD STYLE	
		-4.25	-6.25
-05.75	(5.38) .212	10 mm	12 mm
-06.75	(6.35) .250	11 mm	13 mm
-09.75	(9.35) .368	14 mm	16 mm

*Processing conditions will affect mated height.
See SO Series for board space tolerances.



PROCESSING

Lead-Free Solderable:
Yes
QMS SMT Lead Coplanarity:
(0.10 mm) .004" max
(026-052)
(0.15 mm) .006" max (078)*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)
QFS SMT Lead Coplanarity:
(0.10 mm) .004" max
(026-078)
Board Stacking:
For applications requiring
more than two connectors
contact ipg@samtec.com

View complete specifications at: samtec.com?QMS

QFS	PINS PER ROW NO. OF PAIRS	LEAD STYLE	PLATING OPTION	TYPE	A	OTHER OPTION
	-026, -052, -078 (52 total pins per bank = -D)	Specify LEAD STYLE from Chart	-L = 10 μ" (0.25 μm) gold on contact, Matte Tin on tail (-04.25 Lead Style only)	-D = Single- Ended -D-DP = Differential Pair (-04.25 Lead Style only)		-GP = Guide Holes (-04.25 Lead Style only)
	-016, -032, -048 (16 pairs per bank = -D-DP)		-SL = 10 μ" (0.25 μm) gold on contact, Matte Tin on tail (-06.25 Lead Style only)			

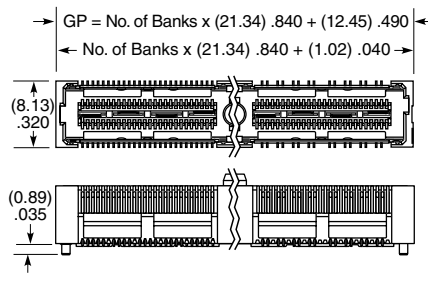
PACKAGING OPTION

Tape & Reel
Options (-TR &
-FR) available.
Visit series web
page and view
engineering prints
for complete
specifications.

STANDARDS

SUMIT™
PCI/104-Express™
PCI/104-Express™ OneBank

Visit samtec.com/standards
for more information,
including mated heights and
complete part numbers.



LEAD STYLE	A
-04.25	(7.44) .299
-06.25	(9.42) .371

Note:
Some lengths, styles and
options are non-standard,
non-returnable.

View complete specifications at: samtec.com?QFS

See pg 46-47 for
Right-Angle & Edge
Mount options.



(0.635 mm) .025" PITCH • QMSS/QFSS SERIES

NRZ
14
Gbps



QMSS
Board Mates:
QFSS

QFSS
Board Mates:
QMSS

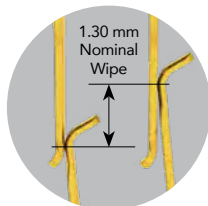
QMSS/QFSS
Standoffs:
SO

SPECIFICATIONS

Insulator Material:
Liquid Crystal Polymer
Terminal, Ground Plane & Shield Material:
Phosphor Bronze
Plating:
Au over 50 μ " (1.27 μ m) Ni
(Tin on Ground Plane Tail)
Operating Temp Range:
-55 °C to +125 °C
Voltage Rating:
300 VAC when mated

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max
(026-078)
Board Stacking:
For applications requiring more than two connectors contact ipg@samtec.com



Note:
Some lengths, styles and options are non-standard, non-returnable.

QMSS	PINS PER ROW NO. OF PAIRS	06.75	PLATING OPTION	TYPE	A	OTHER OPTION
------	------------------------------	-------	-------------------	------	---	-----------------

-026, -052, -078
(52 total pins per bank / 40 signals
+ 12 grounds to shield = -D)

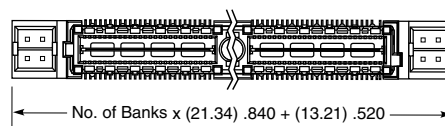
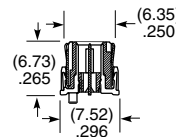
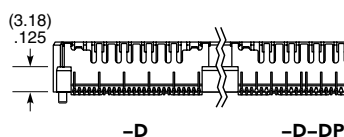
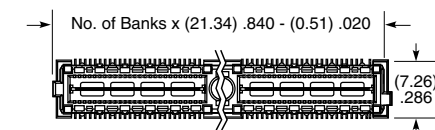
-016, -032, -048
(16 pairs per bank = -D-DP)

-L
= 10 μ " (0.25 μ m)
gold on contact,
Matte Tin on tail

-D
= Single-
Ended
-D-DP
= Differential
Pair

-K
= (5.50 mm)
.217" DIA
Polyimide
film Pick &
Place Pad
(N/A with -
PC4)

-PC4
= 4 Power
Pins/End
(N/A with -A)



PACKAGING OPTION

Tape & Reel
Options (-TR &
-FR) available.
Visit series web
page and view
engineering prints
for complete
specifications.

View complete specifications at: samtec.com?QMSS

QFSS	PINS PER ROW NO. OF PAIRS	04.25	PLATING OPTION	TYPE	A	OTHER OPTION
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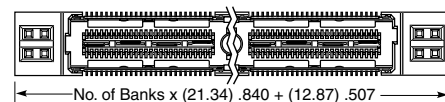
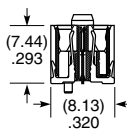
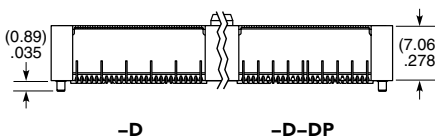
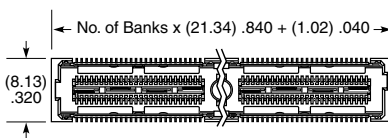
-026, -052, -078
(52 total pins per bank / 40 signals
+ 12 grounds to shield = -D)

-016, -032, -048
(16 pairs per bank = -D-DP)

-L
= 10 μ " (0.25 μ m)
gold on contact,
Matte Tin on tail

-D
= Single-
Ended
-D-DP
= Differential
Pair

-PC4
= 4 Power
Pins/End
(N/A with -A)



PACKAGING OPTION

Tape & Reel
Options (-TR &
-FR) available.
Visit series web
page and view
engineering prints
for complete
specifications.

View complete specifications at: samtec.com?QFSS



QRM8 Board Mates: QRF8

QRF8 Board Mates: QRM8

QRM8/QRF8 Cable Mates: EQRD

SPECIFICATIONS

Insulator Material:

Black LCP

QRM8 Terminal Material:

Phosphor Bronze

QRF8 Contact Material:

BeCu

Ground Plane Material:

Phosphor Bronze

Plating:

Au or Sn over
50 μ" (1.27 μm) Ni

Current Rating:

2.2 A per pin (2 pins powered)

Ground:

8.5 A per ground plane
(1 ground plane powered)

Operating Temp Range:

-55 °C to +125 °C

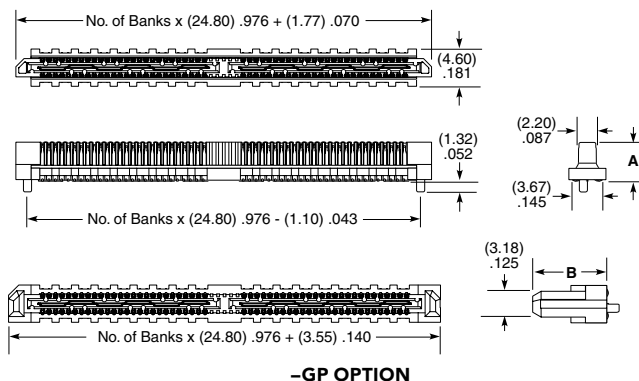
Voltage Rating:

215 VAC

Max Cycles:

100

QRM8	PINS PER ROW NO. OF PINS	LEAD STYLE	PLATING OPTION	TYPE	A	OTHER OPTIONS
	-026, -052, -078 (52 total pins per bank = -D)	-02.0 = 2 mm Body Height (N/A -054 & -078 Positions)	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail	-D = Single- Ended		-GP = Guide Post
	-018, -036, -054 (18 pairs per bank = -D-DP)	-05.0 = 5 mm Body Height		-D-DP = Differential Pair		-K = (5.00 mm) .197" DIA Polyimide Film Pick & Place Pad
		-07.0 = 7 mm Body Height				-TR = Tape & Reel (-018, -026, -036, -052 only)
						-FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks) (-018, -026, -036, -052 only)



LEAD STYLE	A	B
-02	(4.81) .189	(6.12) .241
-05	(7.81) .307	(9.12) .359
-07	(9.78) .385	(11.12) .438

View complete specifications at: samtec.com?QRM8

PROCESSING

Lead-Free Solderable:

Yes

SMT Lead Coplanarity:

(0.10 mm) .004" max
(018-026)

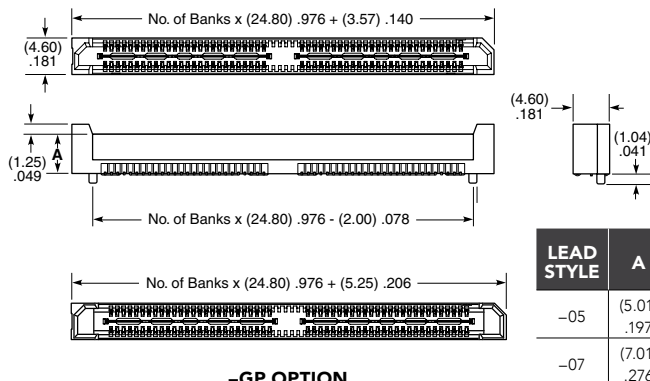
0.15 mm) .006" max
(036-078)*

*(.004" stencil solution
may be available; contact
IPG@samtec.com)

Board Stacking:

For applications requiring
more than two connectors
contact ipg@samtec.com

QRF8	PINS PER ROW NO. OF PAIRS	LEAD STYLE	PLATING OPTION	TYPE	A	OTHER OPTIONS
	-026, -052, -078 (52 total pins per bank = -D)	-05.0 = 5 mm Body Height	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail	-D = Single-Ended		-GP = Guide Post
	-018, -036, -054 (18 pairs per bank = -D-DP)	-07.0 = 7 mm Body Height		-D-DP = Differential Pair		-K = (5.00 mm) .197" DIA Polyimide Film Pick & Place Pad
						-TR = Tape & Reel (-018, -026, -036, -052 only)
						-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (-018, -026, -036, -052 only)

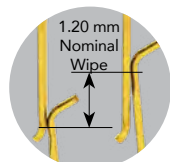


LEAD STYLE	A
-05	(5.01) .197
-07	(7.01) .276

MATED HEIGHT*			
QRF8 LEAD STYLE	QRM8 LEAD STYLE		
	-02.0	-05.0	-07.0
-05	(7.00) .276	(10.00) .394	(12.00) .472
-07	(9.00) .354	(12.00) .472	(14.00) .551

*Processing conditions will affect
mated height. See SO Series for
board space tolerances.

View complete specifications at: samtec.com?QRF8



Note:

Some lengths, styles and
options are non-standard,
non-returnable.



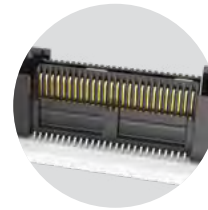
HIGH-SPEED SIGNAL & POWER COMBINATIONS

Q2™ Rugged Signal/Power

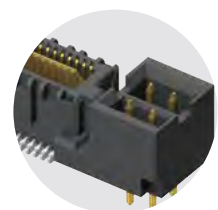
- Integral power/ground plane rated for up to 15.7 amps
- Optional integral power pins rated at 4 amps
- Wide variety of standard high-speed mating cable assemblies
- Combination signal/power cable assemblies
- 0.635 mm pitch with choice of stack heights
- Rugged contact system with increased insertion depth
- See QMS/QFS Series



Integral Power /
Ground Plane



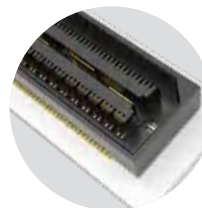
Maximum
Insertion Depth



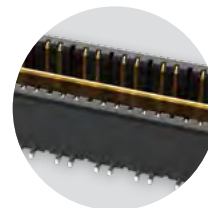
Optional Power Pins

Q Strip® High-Speed Signal/Power

- Integral power/ground plane rated for up to 25 amps
- Wide variety of standard high-speed mating cables
- Low profile (5 mm) to elevated (25 mm) stack heights
- Choice of pitches: QTH/QSH Series (0.50 mm pitch), QTS/QSS Series (0.635 mm pitch), and QTE/QSE Series (0.80 mm pitch)



Single-Ended or
Differential Pair



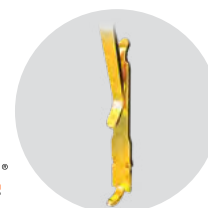
Surface Mount or
Through-Hole Power
Planes



Low Profile to
Elevated Stack
Heights

Q Rate® Slim Body High-Speed Signal/Power

- Widely accepted industry standard power/ground plane rated for up to 8.5 amps
- Signal Integrity optimized Edge Rate® contact is robust when “zippered” during unmating
- Slim 4.60 mm body width on 0.80 mm pitch
- 7 mm to 14 mm stack heights
- See QRM8/QRF8 Series



Edge Rate®
Contact System

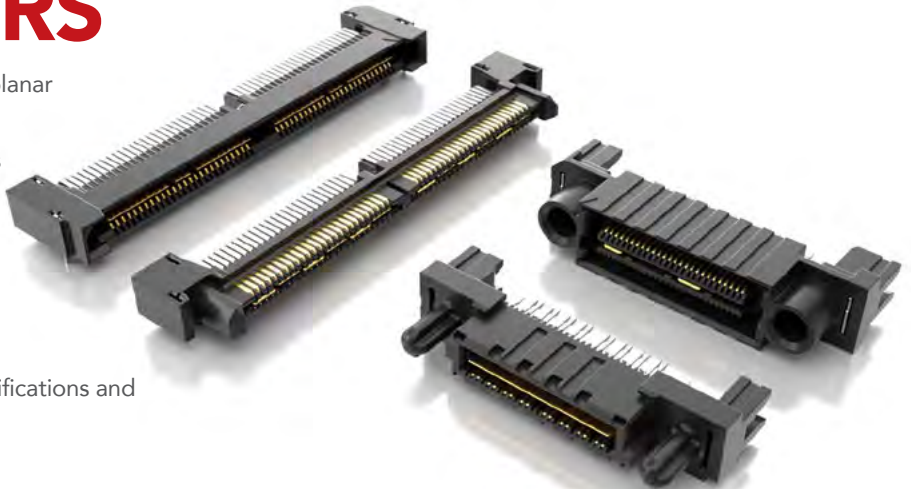


Integral Power /
Ground Plane



RIGHT-ANGLE & EDGE MOUNT HIGH-SPEED GROUND PLANE CONNECTORS

- Right-Angle and Edge Mount designs for coplanar and perpendicular mating
- Q Strip® Right-Angle High-Speed Connectors on 0.50 mm & 0.635 mm pitches
- Q2™ Right-Angle & Edge Mount Rugged High-Speed Connectors on 0.635 mm pitch
- Q Rate™ Right-Angle Slim Body High-Speed Connectors on 0.80 mm pitch
- Visit samtec.com/QSeries for complete specifications and ordering information



Q STRIP® HIGH-SPEED GROUND PLANE CONNECTORS

(0.50 mm) .0197" PITCH RIGHT-ANGLE GROUND PLANE HEADERS & SOCKETS



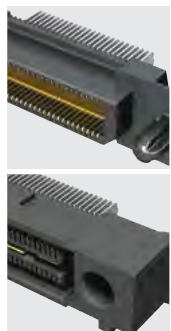
QTH-RA
Board Mates:
QSH

QSH-RA
Board Mates:
QTH

SERIES	PINS PER ROW NO. OF PAIRS	01	PLATING	TYPE	RA	OTHER OPTION
QTH Header	-030, -060, -090 -D = (60 total pins per bank)		-F = Gold Flash on contact, Matte Tin on tails	-D = Single-Ended		-PGP = Plastic Guide Post (QTH only)
QSH Socket	-020, -040, -060 -D-DP = (20 pairs per bank)		-L = 10 μ" (0.25 μm) Gold contact, Matte Tin on tails	-D-DP = Differential Pair		-GP = Guide Post Holes (QSH only)
						-K = Polyimide film Pick & Place Pad

View complete specifications at: samtec.com?QTH-RA or samtec.com?QSH-RA

(0.635 mm) .025" PITCH RIGHT-ANGLE GROUND PLANE HEADER



QTS-RA
Board Mates:
QSS

QSS-RA
Board Mates:
QTS

Cable Mates:
SQCD

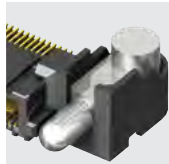
SERIES	POSITIONS PER ROW	01	PLATING	D	RA	WT	OTHER OPTION
QTS Header	-025, -050, -075 (50 total Positions per bank)		-F = Gold Flash on Signal Pins and Ground Plane, Matte Tin on tails			-WT = Weld Tab (N/A with -025 Positions)	-SP = Solder Pin (QTS only)
QSS Socket			-L = 10 μ" (0.25 μm) Gold on Signal Pins and Ground Plane, Matte Tin on tails				

Note:
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?QTS-RA or samtec.com?QSS-RA

Q2™ HIGH-SPEED GROUND PLANE CONNECTORS

(0.635 mm) .025" PITCH RIGHT-ANGLE GROUND PLANE HEADERS & SOCKETS



QMS-RA
Board Mates:
QFS

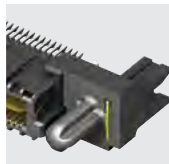


QFS-RA
Board Mates:
QMS

SERIES	PINS PER ROW NO. OF PAIRS	01	PLATING	TYPE	RA	MG	OTHER OPTION
QMS Header	-026, -052, -078 -D = (52 total pins per bank)		-SL = 10 μ" (0.25 μm) Gold on Signal Pins and Ground Plane, Matte Tin on tails	-D = Single-Ended -D-DP = Differential Pair		-MG = Metal Guide Post (QMS only)	-K = Polyimide film Pick & Place Pad -TR = Tape & Reel (-016, -026, -032 & -052 only) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (-016, -026, -032 & -052 only)
QFS Socket	-016, -032, -048 -D-DP = (16 pairs per bank)						

View complete specifications at: samtec.com?QMS-RA or samtec.com?QFS-RA

(0.635 mm) .025" PITCH EDGE MOUNT GROUND PLANE HEADERS & SOCKETS



QMS-EM
Board Mates:
QFS



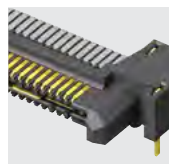
QFS-EM
Board Mates:
QMS

SERIES	POSITIONS PER ROW	01	PLATING	D	EM2	END OPTION	OTHER OPTION
QMS Header	-026, -052, -078		-SL = 10 μ" (0.25 μm) Gold on Signal Pins and Ground Plane, Matte Tin on tails			-PC4 = 4 Power Pins per end (QMS only)	-TR = Tape & Reel (-026 & -052 only) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (-026 & -052 only)
QFS Socket							

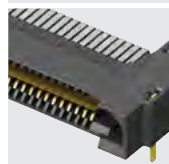
View complete specifications at: samtec.com?QMS-EM or samtec.com?QFS-EM

Q RATE® SLIM BODY HIGH-SPEED GROUND PLANE CONNECTORS

(0.80 mm) .0315" PITCH RIGHT-ANGLE SLIM BODY GROUND PLANE HEADERS & SOCKETS



QRM8-RA
Board Mates:
QRF8
(-GP Required)



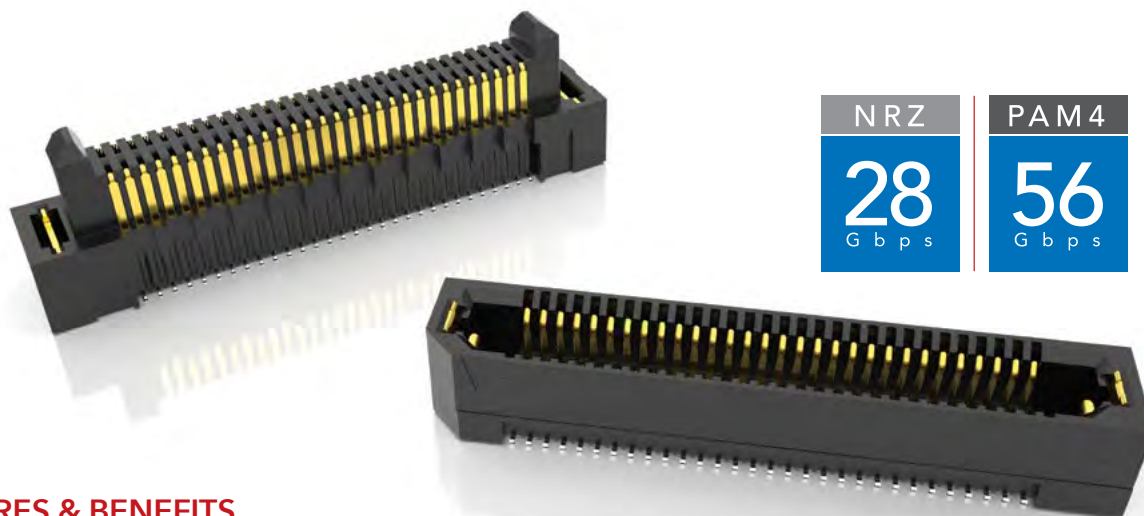
QRF8-RA
Board Mates:
QRM8
(-GP Required)

SERIES	POSITIONS PER ROW	01	PLATING	RA	GP	OPTION
QRM8 Header	-026, -052, -078 (52 total positions per bank)		-L = 10 μ" (0.25 μm) Gold contact, Matte Tin on tails		-GP = Guide Post (Requires -GP on mating connector)	-K = (7.00 mm) .275" DIA Polyimide film Pick & Place Pad (-052 only) -TR = Tape & Reel (-026, -052 only) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (-026 & -052 only)
QRF8 Socket						

Note:
Some lengths, styles and options
are non-standard, non-returnable.

View complete specifications at: samtec.com?QRM8-RA or samtec.com?QRF8-RA

RUGGED HIGH-SPEED STRIPS



NRZ	PAM 4
28 Gbps	56 Gbps

FEATURES & BENEFITS

Edge Rate® rugged high-speed connector strips are designed for high speed, high cycle applications, and enabled by Samtec's signal integrity-optimized Edge Rate® contact system.

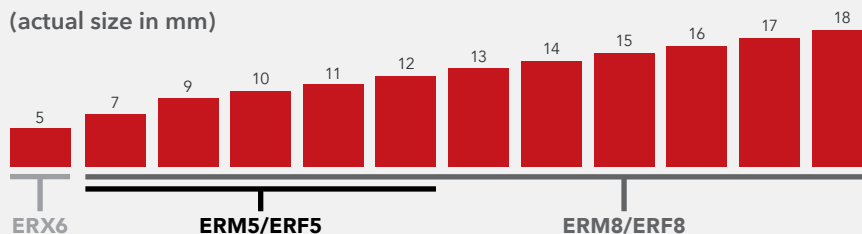
- Choice of 0.50 mm, 0.635 mm or 0.80 mm pitch
- 0.50 mm pitch system offers up to 40% PCB space savings vs. 0.80 mm pitch
- 0.635 mm pitch system with extremely slim 2.5 mm body width
- Rugged latching, locking and 360° shielding
- Up to 1.5 mm contact wipe; robust when "zippered" during unmating
- Compatible with UMPT/UMPS for power/signal flexibility

EDGE
RATE
CONTACT

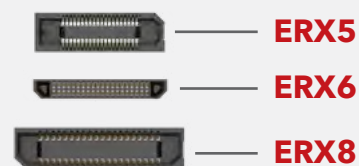


Signal integrity-optimized Edge Rate® contact system reduces broadside coupling

EDGE RATE® STACK HEIGHT FLEXIBILITY (actual size in mm)



Sockets shown actual size with 40 total positions

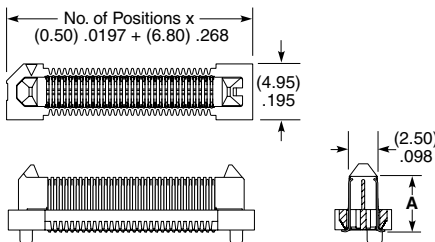
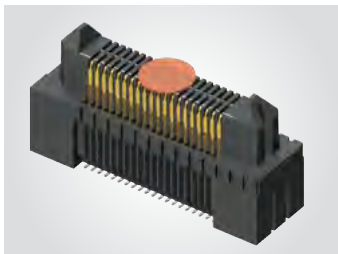


KEY SPECIFICATIONS

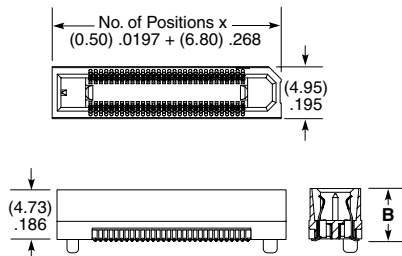
SERIES	PITCH	STACK HEIGHTS	TOTAL PINS / PAIRS	INSULATOR MATERIAL	TERMINAL MATERIAL	PLATING	OPERATING TEMP RANGE	LEAD-FREE SOLDERABLE
ERM5 / ERF5	0.50 mm	7-12 mm	20-150	Black LCP	Phosphor Bronze or BeCu (ERM5), BeCu (ERF5)	Au or Sn over 50 μ" (1.27 μm) Ni	-55 °C to +125 °C	Yes
ERM6 / ERF6	0.635 mm	5 mm	20-120		Copper Alloy			
ERM8 / ERF8	0.80 mm	7-18 mm	10-200		Phosphor Bronze or BeCu (ERM8), BeCu (ERF8)			

(0.50 mm) .0197" PITCH • RUGGED HIGH-SPEED STRIPS

SERIES	POSITIONS PER ROW	LEAD STYLE	PLATING OPTION	DV	PICK & PLACE PAD	"X"R
ERM5 Header	-010, -020, -030, -040, -050, -060, -070, -075	-02.0 = 2 mm Body Height (ERM5 only)	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on Tail		(required in callout)	-TR = Tape & Reel
ERF5 Socket		-04.0 = 4 mm Body Height (ERM5 only)			-K = (3.50 mm) .138" DIA Polyimide Film Pick & Place Pad (ERM5 -04.0 -05.0 and Lead Style only)	-FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks)
		-05.0 = 5 mm Body Height			-P = Plastic Pick & Place Pad (ERM5 -02.0 Lead Style only; ERM5 -010 Positions and ERF5 Not Available)	
		-07.0 = 7 mm Body Height (ERF5 only & Available up to 50 Pos. only)				

ERM5
 Board Mates:
ERF5


LEAD STYLE	A (ERM5)	B (ERF5)
-02.0	(4.84) .191	N/A
-04.0	(6.84) .269	N/A
-05.0	(7.84) .309	(4.91) .193
-07.0	N/A	(6.91) .272

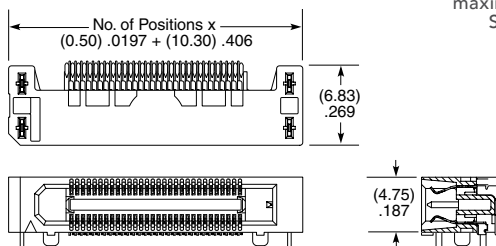
ERF5
 Board Mates:
ERM5


MATED HEIGHT*		
ERM5 LEAD STYLE	ERF5 LEAD STYLE	
	-05.0	-07.0
-02.0	(7.00) .276	(9.00) .354
-04.0	(9.00) .354	(11.00) .433
-05.0	(10.00) .394	(12.00) .472

*Processing conditions will affect mated height.

View complete specifications at: samtec.com?ERM5 or samtec.com?ERF5

ERF5	POSITIONS PER ROW	01	PLATING OPTION	D	RA	"X"R
Right-Angle Socket	-010, -020, -030, -040, -050		-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail			-TR = Tape & Reel
ERF5-RA Board Mates: ERM5						-FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks)



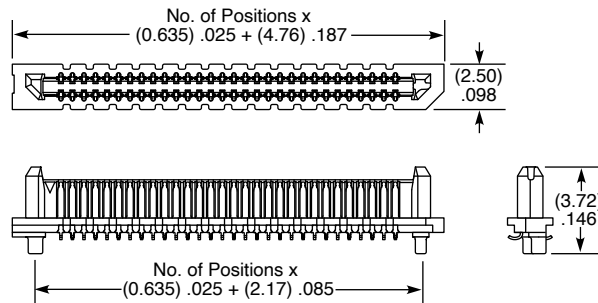
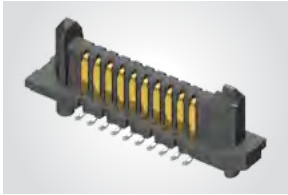
Note:
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?ERF5-RA

(0.635 mm) .025" PITCH • RUGGED HIGH-SPEED HEADERS & SOCKETS

ERM6	POSITIONS PER ROW	01.5	PLATING OPTION	DV	A	OPTION	K	"X"R
	-010, -020, -030, -040, -050, -060 (Standard Sizes)		-L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail			(Leave Blank for No Weld Tab Pin) -WT = Weld Tab		-TR = Tape & Reel -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks)

ERM6
Board Mates:
ERF6



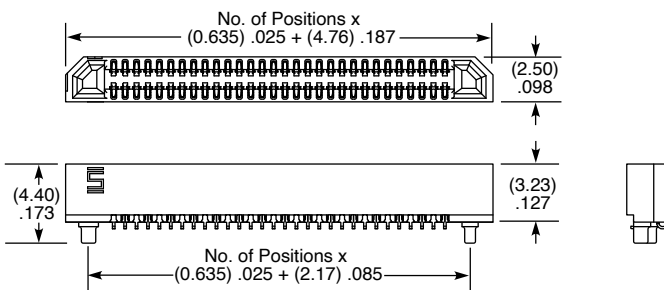
MATED HEIGHT*	
ERF6 LEAD STYLE	ERM6 LEAD STYLE
-01.5	-01.5
-03.5	(5.00) .197

*Processing conditions will affect mated height.

View complete specifications at: samtec.com?ERM6

ERF6	POSITIONS PER ROW	03.5	PLATING OPTION	DV	A	OPTION	K	"X"R
	-010, -020, -030, -040, -050, -060 (Standard Sizes)		-L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail			(Leave Blank for No Weld Tab Pin) -WT = Weld Tab		-TR = Tape & Reel -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks)

ERF6
Board Mates:
ERM6



MATED HEIGHT*	
ERF6 LEAD STYLE	ERM6 LEAD STYLE
-01.5	-01.5
-03.5	(5.00) .197

*Processing conditions will affect mated height.

View complete specifications at: samtec.com?ERF6

Notes:

Kapton pad and tape & reel packaging are standard.
Some lengths, styles and options are non-standard, non-returnable.

(0.80 mm) .0315" PITCH • RUGGED HIGH-SPEED HEADERS & SOCKETS

TYPE	POSITIONS PER ROW	LEAD STYLE	PLATING OPTION	DV	OPTIONS	"X"R
------	-------------------	------------	----------------	----	---------	------

ERM8
= Header

ERF8
= Socket

**-050, -010, -011,
-013, -020, -025,
-030, -035, -040,
-049, -050, -060,
-070, -075, -100**

(100 Position Only Available
with ERM8-09.0 & ERF8-05.0
Lead Styles; -L or -EPG N/A)

**SPECIFY
LEAD
STYLE
FROM
CHART**

-L
= 10 μ " (0.25 μ m) Gold on
contact, Matte Tin on tail

-S
= 30 μ " (0.76 μ m) Gold on
contact, Matte Tin on tail

-DS
= Differential Pair (ERM8 -05.0
Lead Style with -010, -013,
-025, -049 Positions only)

-L
= Latching (ERM8-05.0 &
-09.0 Lead Styles only & -EPG
Option N/A) (ERF8-05.0 Lead
Style only and -L to -EPG
Option N/A)

-EGP
= Extended Guide Post
(ERM8-05.0 & ERF8-07.0 Lead
Style Only & -L Option N/A)

-DSP
= Differential Pair with
Extended Guide Post (ERM8
-05.0 Lead Style with -013 and
-025 Positions only)

-K
= Polyimide Film Pick & Place
Pad (-02.0 Lead Style N/A)

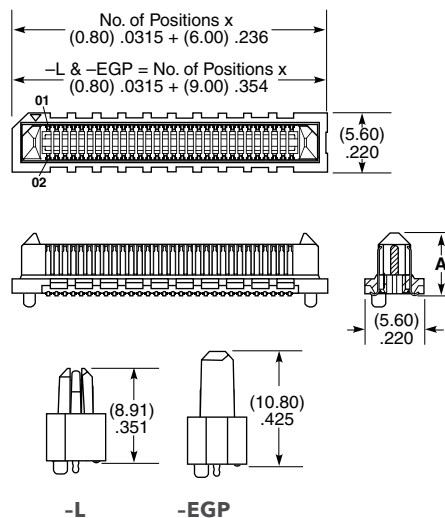
-P
= Pick & Place Pad (ERM8 and
-02.0 & -05.0 Lead Styles only)

-TR
= Tape & Reel

-FR
= Full Reel Tape &
Reel (must order
maximum quantity
per reel; contact
Samtec for
quantity breaks)

ERM8
Board Mates:
ERF8
ERM8

Cable Mates:
ERCD, ERDP

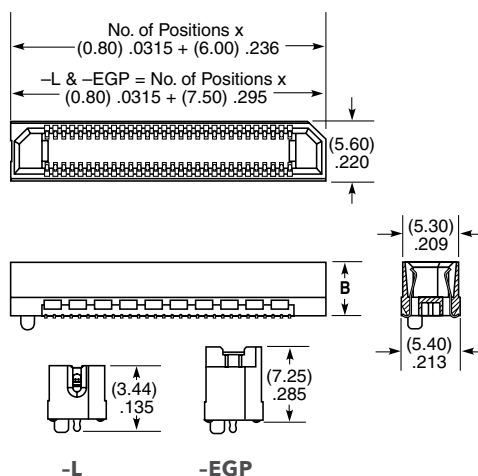


View complete specifications at: samtec.com?ERM8

LEAD STYLE	A (ERM8)	B (ERF8)
-02.0	(5.97) .235	N/A
-05.0	(8.91) .351	(5.10) .200
-07.0	N/A	(7.00) .276
-08.0	(11.91) .469	N/A
-09.0	(12.91) .508	(9.00) .354

ERF8
Board Mates:
ERM8

ERF8
Cable Mates:
ERCD, ERDP



View complete specifications at: samtec.com?ERF8

MATED HEIGHT*			
ERM8 LEAD STYLE	ERF8 LEAD STYLE		
	-05.0	-07.0	-09.0
-02.0	(7.00) .276	(9.00) .354	(11.00) .433
-05.0	(10.00) .394	(12.00) .472	(14.00) .551
-08.0	(13.00) .512	(15.00) .591	(17.00) .669
-09.0	(14.00) .551	(16.00) .629	(18.00) .709

*Processing conditions will affect mated height.

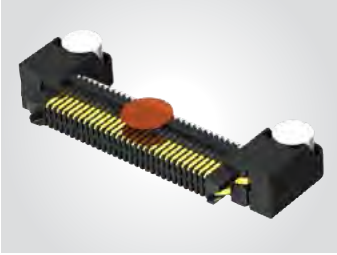
Note:
Some lengths, styles and options are non-standard, non-returnable.

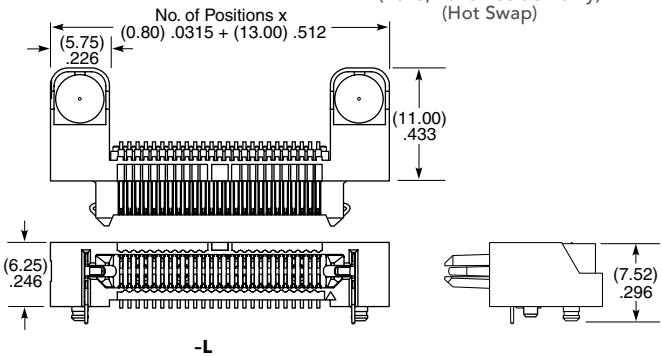
See pg 52-53 for Right-Angle &
Edge Mount options, pg 54 for
Shielded options.

(0.80 mm) .0315" PITCH • RIGHT-ANGLE & EDGE MOUNT HIGH-SPEED HEADERS

ERM8	POSITIONS PER ROW	01	PLATING OPTION	D	RA	OPTIONS	"X"R
Right-Angle Terminal	-010, -013, -020, -025, -030, -040, -049, -050, -060, -070, -075		-L = 10 μ" (0.25 μm) Gold on contact area, Matte Tin on tail			-K = (6.00 mm) .236" DIA Polyimide Film Pick & Place Pad -L = Latching -DS = Differential Pair (-013, -025 Position only) (Hot Swap)	-TR = Tape & Reel -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks)

ERM8-RA
Board Mates:
 ERF8
Cable Mates:
 ERCD

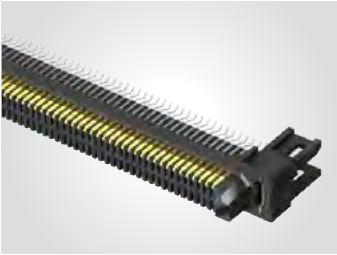


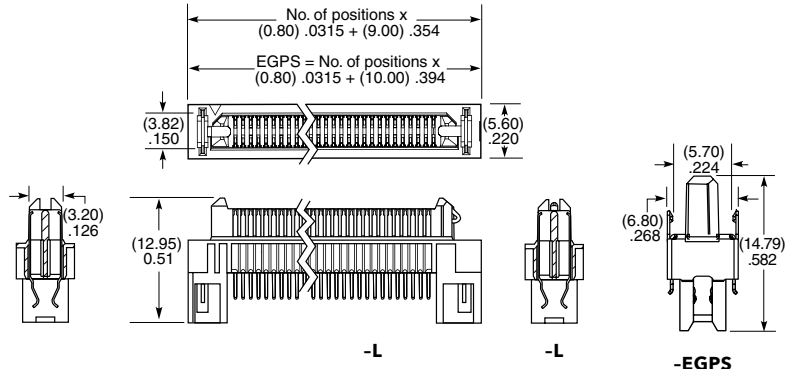


 View complete specifications at: samtec.com?ERM8-RA

ERM8	POSITIONS PER ROW	01	PLATING OPTION	D	EM2	OPTIONS	"X"R
Edge Mount Terminal	-010, -013, -020, -025, -030, -040, -049, -050, -060, -070, -075		-L = 10 μ" (0.25 μm) Gold on contact area, Matte Tin on tail		= (1.60 mm) .062" Thick PCB	-L = Latching (Mates to ERF8 Lead Style -05.0 or -RA Only) -DS = Differential Pair (-013 & -025 Position only) (Hot Swap) -EGPS = Extended Guide Post Shield (-010, -020, -025, -030 Position Only) -DSS = Differential Pair + Extended Guide Post Shield (-025 Position Only) (Hot Swap)	-TR = Tape & Reel -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks)

ERM8-EM
Board Mates:
 ERF8
Cable Mates:
 ERCD





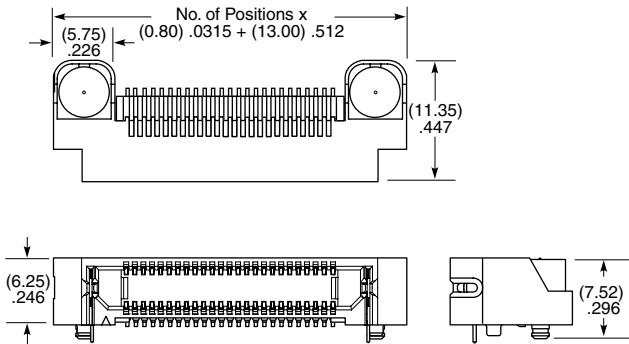
 View complete specifications at: samtec.com?ERM8-EM

Note:
 Some lengths, styles and options are non-standard, non-returnable.

(0.80 mm) .0315" PITCH • RIGHT-ANGLE & EDGE MOUNT HIGH-SPEED SOCKETS

ERF8	POSITIONS PER ROW	01	PLATING OPTION	D	RA	OPTIONS	"X"R
Right-Angle Socket	-010, -013, -020, -025, -030, -040, -049, -050, -060, -070, -075		-L = 10 μ" (0.25 μm) Gold on contact area, Matte Tin on tail			-L = Latching (N/A with -EGP Option) -EGP = Extended Guide Post (N/A with -L Option)	-TR = Tape & Reel -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks)

ERF8-RA
Board Mates: ERM8
Cable Mates: ERCD, ERDP

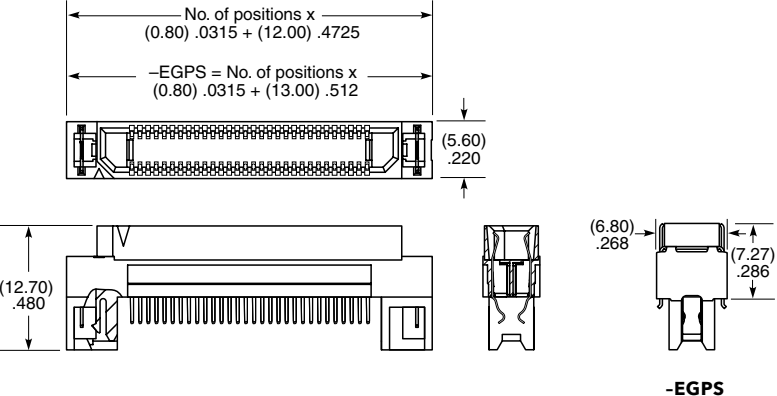



Top view dimensions: No. of Positions x (0.80) .0315 + (13.00) .512, (5.75) .226, (11.35) .447.
Side view dimensions: (6.25) .246.
Cross-sectional view dimensions: (7.52) .296.

View complete specifications at: samtec.com?ERF8-RA

ERF8	POSITIONS PER ROW	01	PLATING OPTION	D	EM2	OPTIONS	"X"R
Edge Mount Socket	-010, -013, -020, -025, -030, -040, -049, -050, -060, -070, -075		-L = 10 μ" (0.25 μm) Gold on contact area, Matte Tin on tail		= (1.60 mm) .062" Thick PCB	-EGPS = Extended Guide Post Shield (-010, -020, -025, -030 Pos. only)	-TR = Tape & Reel -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks)

ERF8-EM
Board Mates: ERM8

Top view dimensions: No. of positions x (0.80) .0315 + (12.00) .4725, -EGPS = No. of positions x (0.80) .0315 + (13.00) .512, (5.60) .220.
Side view dimensions: (12.70) .480.
Cross-sectional view dimensions: (6.80) .268, (7.27) .286.

View complete specifications at: samtec.com?ERF8-EM

Note:
Some lengths, styles and options are non-standard, non-returnable.

(0.80 mm) .0315" PITCH • SHIELDED HIGH-SPEED HEADERS & SOCKETS

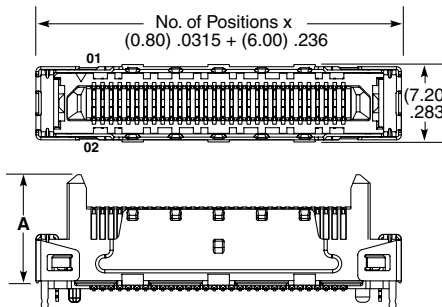
TYPE	POSITIONS PER ROW	LEAD STYLE	PLATING OPTION	DV	OPTIONS	"X"R
ERM8 = Shielded Terminal	-010, -020, -025, -030	-02.0 = 2 mm (ERM8 with -S only)	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail		-S = Shield (Lead Styles: ERM8 -02.0 only; ERF8 -05.0 only)	-TR = Tape & Reel
ERF8 = Shielded Socket		-05.0 = 5 mm (ERF8 with -S & ERM8 with -EGPS & -DSS only)	-S = 30 μ" (0.76 μm) Gold on contact, Matte Tin on tail		-EGPS = Extended Guide Post Shield (Lead Styles: ERM8 -05.0 & -09.0 only; ERF8 -07.0 only)	-FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks)
		-07.0 = 7 mm (ERF8 with -EGPS only)			-DSS = Differential Pair with Extended Guide Post Shield (ERM8 only, with -05.0 & -09.0 Lead Styles, -10 & -025 Pos. only)	
		-09.0 = 9 mm (ERM8 with -EGPS & -DSS only)			-K = Polyimide Film Pick & Place Pad (-02.0 Lead Style N/A)	
					-P = Pick & Place Pad (ERM8 -02.0 & -05.0 Lead Styles only)	

ERM8-S

Board Mates:

See "Mated Height" Chart

(Note: ERF8-S does not mate with ERM8-EGPS)



LEAD STYLE	A	B
-05.0	(9.87) .389	(10.81) .425
-09.0	(13.87) .546	(14.81) .583

-S OPTION

-EGPS OR -DSS OPTION

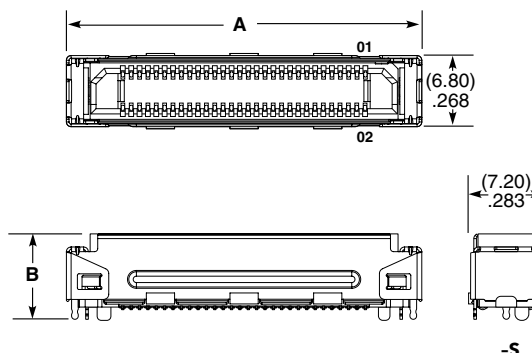
View complete specifications at: samtec.com?ERM8

ERF8-S

Board Mates:

See "Mated Height" Chart

(Note: ERM8-EGPS does not mate with ERF8-S)



LEAD STYLE	B (-S)	B (-EGPS)
-05.0	(5.90) .232	N/A
-07.0	N/A	(7.42) .292

POSITIONS PER ROW	A
-010	(18.00) .71
-020	(26.00) 1.02
-025	(30.00) 1.18
-030	(34.00) 1.34

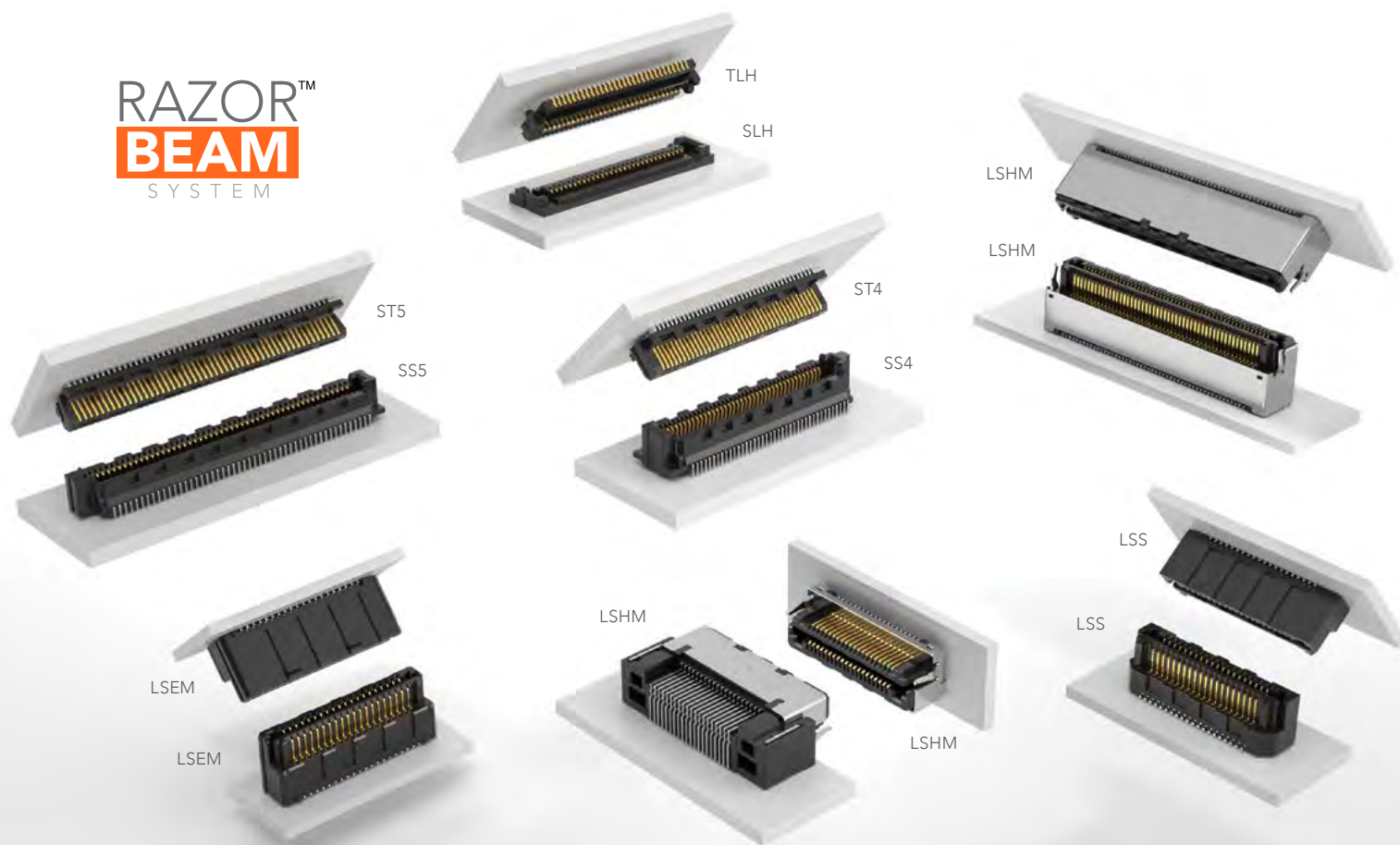
View complete specifications at: samtec.com?ERF8

Note:

Some lengths, styles and options are non-standard, non-returnable.

ULTRA MICRO INTERCONNECTS

SPACE SAVING DESIGNS • RUGGED HERMAPHRODITIC • ULTRA FINE PITCH



56-58

RAZOR BEAM™

0.50 mm Pitch Hermaphroditic Connectors (LSHM)	56-57
0.635 mm Pitch Hermaphroditic Connectors (LSS)	58
0.80 mm Pitch Hermaphroditic Connectors (LSEM)	58

59-61

MICRO BLADE & BEAM STRIPS

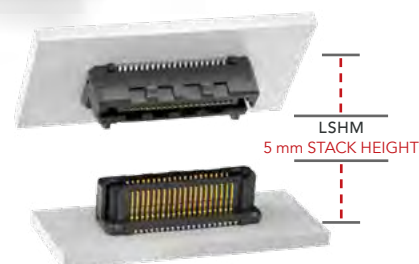
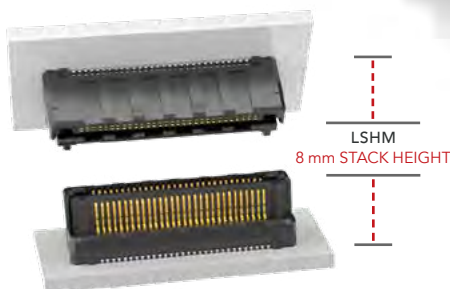
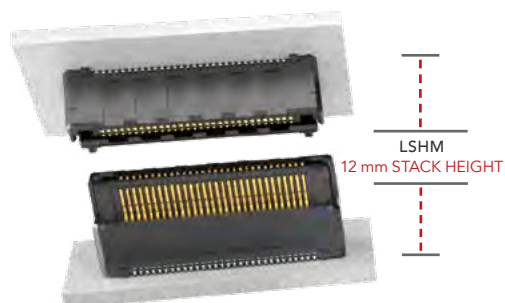
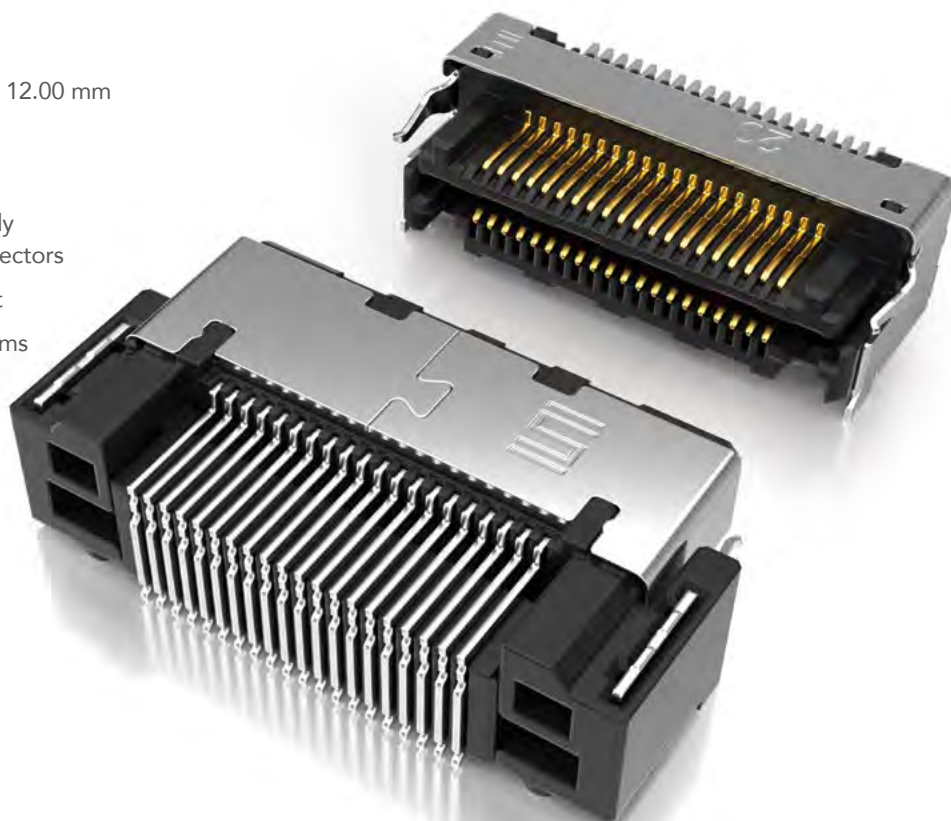
0.40 mm Pitch Low-Profile Strips (ST4, SS4)	59
0.50 mm Pitch Low-Profile Strips (ST5, SS5, SLH, TLH)	60-61

FINE PITCH SELF MATING CONNECTORS

(0.50 mm) .0197" PITCH

FEATURES & BENEFITS

- Ten stack height options from 5.00 mm to 12.00 mm
- 0.50 mm, 0.635 mm or 0.80 mm pitches
- Audible click when mated
- Mating and unmating forces approximately 4-6x greater than typical micro pitch connectors
- Self-mating system reduces inventory cost
- Parallel, perpendicular and coplanar systems
- Shield option
- Lubricated option



KEY SPECIFICATIONS

INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	OPERATING TEMP RANGE	CURRENT RATING	SMT COPLANARITY	LEAD-FREE SOLDERABLE
Black LCP	Phosphor Bronze	Au or Sn over 50 μ " (1.27 μ m) Ni	-55 °C to +125 °C	LSHM: 2.0 A per pin LSS: 1.7 A per pin LSEM: 1.8 A per pin	(0.10 mm) .004" max	Yes

(0.50 mm) .0197" PITCH • RUGGED HERMAPHRODITIC CONNECTORS

LSHM	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	TAIL OPTION	A	SHIELD OPTION	K	"X"R
		05, 10, 20, 30, 40, 50	(Vertical) Specify LEAD STYLE from chart (Right-angle) -01 = Standard (Right-angle) -L1 = Lubricated	-F = Gold flash on contact, Matte Tin on tail -L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail	-DV = Vertical -DH = Right-angle (Lead style -01 & -L1 only) -RH = Reverse Right-angle (Lead style -01 & -L1 only)		-S = With Shield -N = Without Shield	-K = (3.50 mm) .138" DIA Polyimide film Pick & Place Pad	-TR = Tape & Reel -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks)

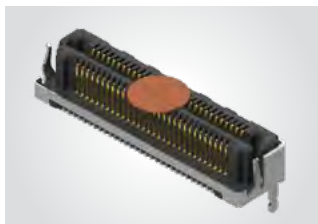
LSHM

Board Mates:

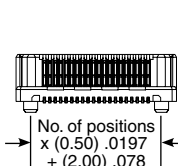
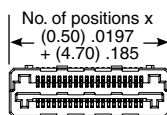
LSHM

Cable Mates:

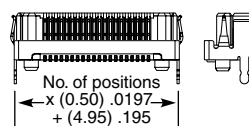
HLCD



LEAD STYLE (STANDARD)	LEAD STYLE (LUBRICATED)	A	B
-02.5	-L2.5	(3.95) .156	(1.00) .039
-03.0	-L3.0	(4.45) .175	(1.50) .059
-04.0	-L4.0	(5.45) .215	(2.50) .098
-06.0	-L6.0	(7.45) .293	(4.50) .177



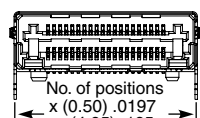
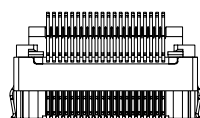
-DV-N



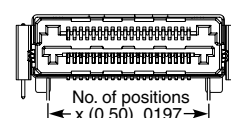
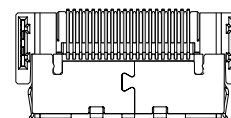
-DV-S

LEAD STYLE	MATED HEIGHT *
-02.5 & -02.5	(5.00) .196
-02.5 & -03.0	(5.50) .217
-03.0 & -03.0	(6.00) .236
-02.5 & -04.0	(6.50) .256
-03.0 & -04.0	(7.00) .276
-04.0 & -04.0	(8.00) .315
-02.5 & -06.0	(8.50) .335
-03.0 & -06.0	(9.00) .354
-04.0 & -06.0	(10.00) .394
-06.0 & -06.0	(12.00) .472

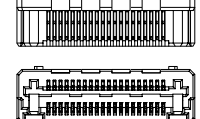
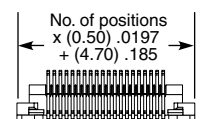
*Processing conditions will affect mated height.



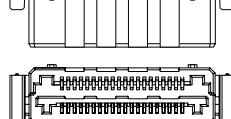
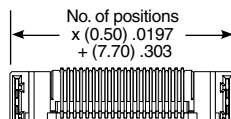
-DH-S



-RH-S



-DH-N



-RH-N

Note:
Some lengths, styles and
options are non-standard,
non-returnable.

View complete specifications at: samtec.com/LSHM

(0.635 mm) .025" PITCH • RUGGED HERMAPHRODITIC CONNECTORS

LSS	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	DV	A	OPTION
-----	---	------------------	------------	----------------	----	---	--------

10, 20, 30, 40, 50

Specify
LEAD
STYLE
from
chart

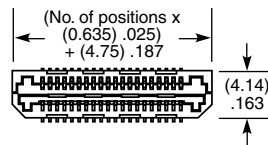
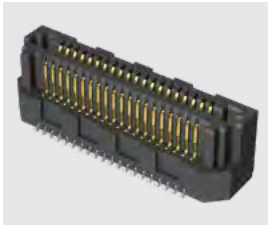
–F
= Gold flash
on contact,
Matte Tin on tail

–L
=10 μ" (0.25 μm)
Gold on contact,
Matte Tin on tail

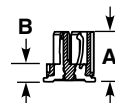
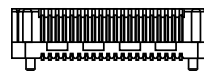
–K
= (3.50 mm) .138" DIA
Polyimide film
Pick & Place Pad

–TR
= Tape & Reel

–FR
= Full Reel Tape & Reel
(must order maximum
quantity per reel; contact
Samtec for quantity breaks)



LEAD STYLE	A	B
–01	(4.45) .1752	(1.59) .0628
–02	(7.45) .2933	(4.59) .1808
–03	(5.45) .2146	(2.59) .1021



LEAD STYLE	MATED HEIGHT *
–01 & –01	(6.00) .236
–01 & –03	(7.00) .276
–03 & –03	(8.00) .315
–01 & –02	(9.00) .354
–02 & –03	(10.00) .394
–02 & –02	(12.00) .472

*Processing conditions will
affect mated height.

View complete specifications at: samtec.com?LSS

(0.80 mm) .0315" PITCH • RUGGED HERMAPHRODITIC CONNECTORS

LSEM	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	TAIL OPTION	A	N	K	"X"R
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10, 20, 30,
40, 50

Specify
LEAD
STYLE
from
chart

–F
= Gold flash
on contact,
Matte Tin on tail

–L
=10 μ" (0.25 μm)
Gold on contact,
Matte Tin on tail

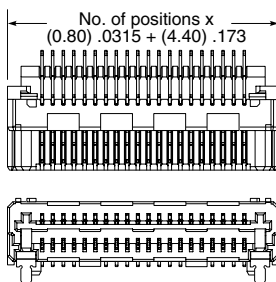
–DV
= Vertical

–DH
= Right-angle
(Lead style
–01 only)

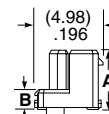
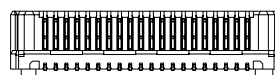
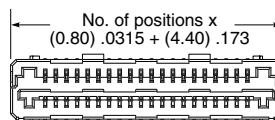
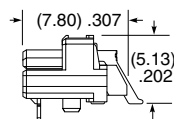
–K
= (3.50 mm)
.138" DIA
Polyimide film
Pick & Place Pad

–TR
= Tape & Reel

–FR
= Full Reel
Tape & Reel
(must order
maximum
quantity
per reel;
contact
Samtec for
quantity
breaks)



LEAD STYLE	A	B
–01 (–DH only)	N/A	NA
–03.0	(4.45) .175	(1.50) .059
–04.0	(5.45) .215	(2.50) .098
–06.0	(7.45) .293	(4.50) .177



LEAD STYLE	MATED HEIGHT *
–03.0 & –03.0	(6.00) .236
–03.0 & –04.0	(7.00) .276
–04.0 & –04.0	(8.00) .315
–03.0 & –06.0	(9.00) .354
–04.0 & –06.0	(10.00) .394
–06.0 & –06.0	(12.00) .472

*Processing conditions will
affect mated height.

Note:
Some lengths, styles and
options are non-standard,
non-returnable.

–DH

–DV

View complete specifications at: samtec.com?LSEM

MICRO BLADE & BEAM SOCKET & HEADER

(0.40 mm) .0158" PITCH • SS4/ST4 SERIES

28
Gbps



SS4
Mates:
ST4

ST4
Mates:
SS4

SPECIFICATIONS

Insulator Material:

Black LCP

Contact Material:

Phosphor Bronze

Plating:

Au or Sn over
50 μ" (1.27 μm) Ni

Operating Temp Range:

-55 °C to +125 °C

Current Rating:

1.6 A per pin
(2 pins powered)

PROCESSING

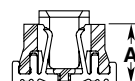
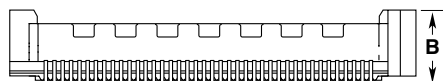
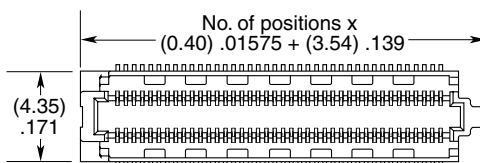
Lead-Free Solderable:

Yes

SMT Lead Coplanarity:

(0.10 mm) .004" max

SS4	POSITIONS PER ROW	LEAD STYLE	PLATING OPTION	D	K	"X"R
	-10, -20, -30, -40, -50	-3.00 = 3.00 mm -3.50 = 3.50 mm	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail		(Required in callout) -K = (3.50 mm) .138" DIA Polyimide Film Pick & Place Pad	(Required in callout) -TR = Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)



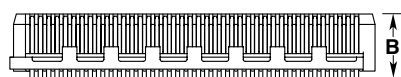
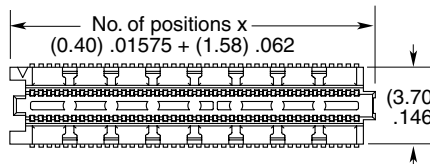
LEAD STYLE	A	B
-3.00	(2.85) .112	(3.50) .138
-3.50	(3.35) .132	(4.00) .157

ST4	POSITIONS PER ROW	LEAD STYLE	PLATING OPTION	D	P	"X"R
	-10, -20, -30, -40, -50	-1.00 = 1.00 mm -1.50 = 1.50 mm -2.50 = 2.50 mm	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail		(Required in callout) -P = Pick & Place Pad	(Required in callout) -TR = Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

MATED HEIGHT *

ST4 LEAD STYLE	SS4 LEAD STYLE	
	-3.00	-3.50
-1.00	(4.00 mm) .157"	(4.50 mm) .177"
-1.50	(4.50 mm) .177"	(5.00 mm) .197"
-2.50	(5.50 mm) .217"	(6.00 mm) .236"

*Processing conditions
will affect mated height.



LEAD STYLE	A	B
-1.00	(1.00) .039	(3.08) .121
-1.50	(1.50) .059	(3.58) .141
-2.50	(2.50) .098	(4.58) .180

Note:
Some lengths, styles and
options are non-standard,
non-returnable.

MICRO BLADE & BEAM SOCKET & HEADER

(0.50 mm) .0197" PITCH • SS5/ST5 SERIES

PAM 4

56
Gbps

SS5
Mates:
ST5

ST5
Mates:
SS5

SPECIFICATIONS

Insulator Material:

Black LCP

Contact Material:

Phosphor Bronze

Plating:

Au or Sn over
50 μ" (1.27 μm) Ni

Operating Temp Range:

-55 °C to +125 °C

Current Rating:

1.6 A per pin
(2 pins powered)

PROCESSING

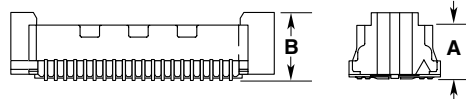
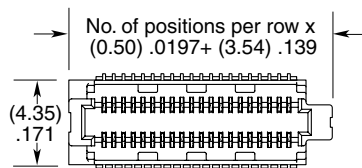
Lead-Free Solderable:

Yes

SMT Lead Coplanarity:

(0.10 mm) .004" max

SS5	NO. OF POSITIONS	LEAD STYLE	PLATING OPTION	D	K	"X"R
	-10, -15, -20, -30, -40, -50, -60, -70, -80 (Per Row)	-3.00 = 3.00 mm -3.50 = 3.50 mm	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail		(Required in callout) -K = (3.50 mm) .138" DIA Polyimide Film Pick & Place Pad	(Required in callout) -TR = Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)



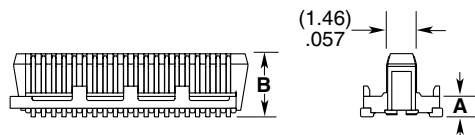
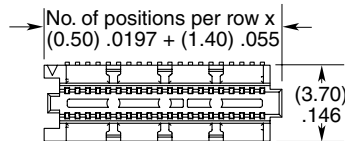
LEAD STYLE	A	B
-3.00	(2.85) .112	(3.50) .138
-3.50	(3.35) .132	(4.00) .157

MATED HEIGHT *

ST5 LEAD STYLE	SS5 LEAD STYLE
-1.00	(4.00 mm) .157"
-1.50	(4.50 mm) .177"

*Processing conditions will affect mated height.

ST5	NO. OF POSITIONS	LEAD STYLE	PLATING OPTION	D	P	"X"R
	-10, -15, -20, -30, -40, -50, -60, -70, -80 (Per Row)	-1.00 = 1.00 mm -1.50 = 1.50 mm	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail		(Required in callout) -P = Pick & Place Pad	(Required in callout) -TR = Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)



LEAD STYLE	A	B
-1.00	(1.00) .039	(3.08) .121
-1.50	(1.50) .059	(3.58) .141

ALSO AVAILABLE

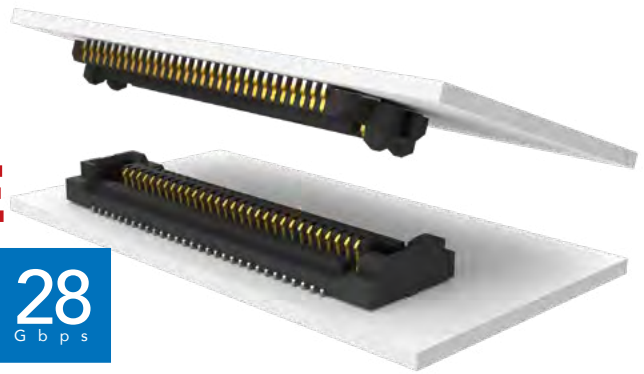
Other lead styles
(MOQ Required)

Note:
Some lengths, styles and
options are non-standard,
non-returnable.

ULTRA-LOW PROFILE HEADER & SOCKET

(0.50 mm) .0197" PITCH • SLH/TLH SERIES

28
G b p s



SLH
Mates:
TLH

TLH
Mates:
SLH

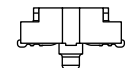
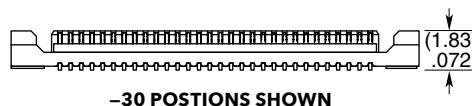
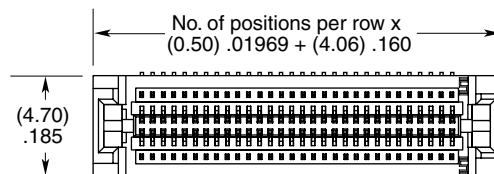
SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Contact Material:
Copper Alloy
Plating:
Au over 50 μ " (1.27 μ m) Ni
Current Rating:
2.1 A per pin
(2 pins powered)
Operating Temp Range:
-55 °C to +125 °C

PROCESSING

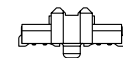
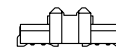
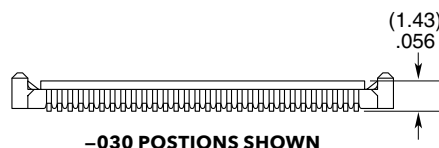
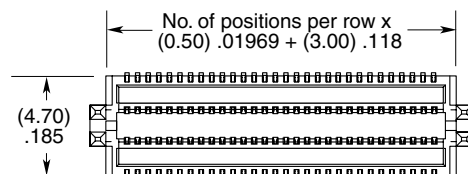
Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max
Board Stacking:
For applications requiring two
or more connectors per board,
contact ipg@samtec.com

SLH	-	NO. OF POSITIONS	-	LEAD STYLE	-	PLATING OPTION	-	D	-	OPTION	-	OPTION
		-010, -020, -030 (Per Row)		-1.50 =1.50 mm		-G = 10 μ " (0.25 μ m) Gold in contact, Gold flash on tail				-A = Alignment Pin		-K = (3.00 mm) .118" DIA Polyimide Film Pick & Place Pad



-A OPTION

TLH	-	NO. OF POSITIONS	-	LEAD STYLE	-	PLATING OPTION	-	D	-	OPTION	-	OPTION
		-010, -020, -030 (Per Row)		-0.50 =0.50 mm		-G = 10 μ " (0.25 μ m) Gold in contact, Gold flash on tail				-A = Alignment Pin		-K = (3.00 mm) .118" DIA Polyimide Film Pick & Place Pad



-A OPTION

Note:
Some lengths, styles and
options are non-standard,
non-returnable.

PRECISION BOARD STACKING STANDOFF

SO SERIES



SPECIFICATIONS

Material:
Aluminum
Locking Compound:
Nylon

SO

**BOARD
STACKER**

Specify
BOARD STACKER
from chart

**LEAD
STYLE**

-01
= Female Thread/Press-In
(-0515 thru -0865 only)

-02
= Male/Male Thread
(-0515 and
-1115 thru -2515 only)

-03
= Male/Female Thread
(-0815 thru -2515 only)

-05
= Female/Female Thread
(-1524 thru -2515 only)

**THREAD
STYLE**

-01
= #4-40
Thread

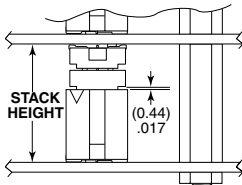
-02
= M3 x 0.5
Thread

01

L

-L
= -02 & -03
Lead Style
thread locking
compound
(Leave blank for
-01 Lead Style)

INDUSTRY STANDARD SOLUTIONS



Requires Standoff
SO-1524-03-01-01-L or
JSOM-1524-02 for 15.24 mm
or SO-2215-02-01-01-L
for 22 mm board spacing.

Connectors designed to not
fully seat when mated.

For more information on the JSOM,
visit samtec.com?JSOM

INDUSTRY STANDARD	INTERCONNECTS			
	TERMINAL	SOCKET	BANKS	STACK HEIGHT
SUMIT™	ASP-129637-01	ASP-129646-01	1	15.24 mm
PCI/104-Express™	ASP-129637-03	ASP-129646-03	3	15.24 mm
PCI/104-Express™	ASP-129637-13	ASP-129646-22	1	15.24 mm
PCI/104-Express™	ASP-142781-01	ASP-129646-01	1	22 mm
PCI/104-Express™	ASP-142781-02	ASP-129646-02	2	22 mm
PCI/104-Express™	ASP-142781-03	ASP-129646-03	3	22 mm

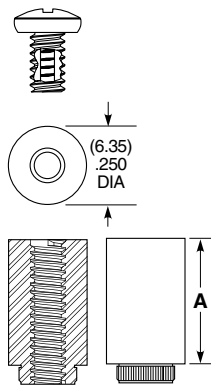
BOARD STACKER	A	BOARD STACK HEIGHT
-0515	(5.15) .203	5 mm
-0715	(7.15) .282	7 mm
-0815	(8.15) .321	8 mm
-0865	(8.65) .341	8.5 mm
-1115	(11.15) .439	11 mm
-1215	(12.15) .478	12 mm
-1524	(15.24) .600	15.09 mm
-1615	(16.15) .636	16 mm
-1890	(18.90) .744	18.75 mm
-1915	(19.15) .754	19 mm
-2515	(25.15) .990	25 mm

ALSO AVAILABLE MOQ Required

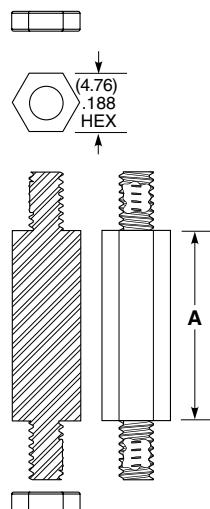
Other heights
Stainless Steel
Locking compound removed
Other materials and threading
No Hardware

Notes:
Standoffs are designed,
0.15 mm longer than
connector stack heights to
allow for processing variables.

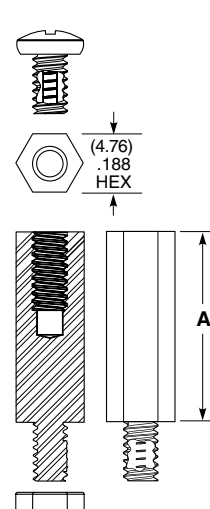
Some sizes, styles and
options are non-standard,
non-returnable.



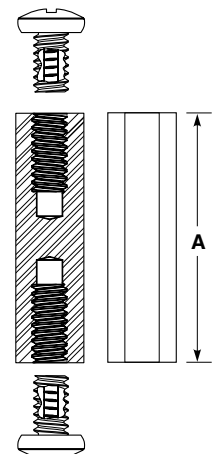
-01 LEAD STYLE



-02 LEAD STYLE



-03 LEAD STYLE

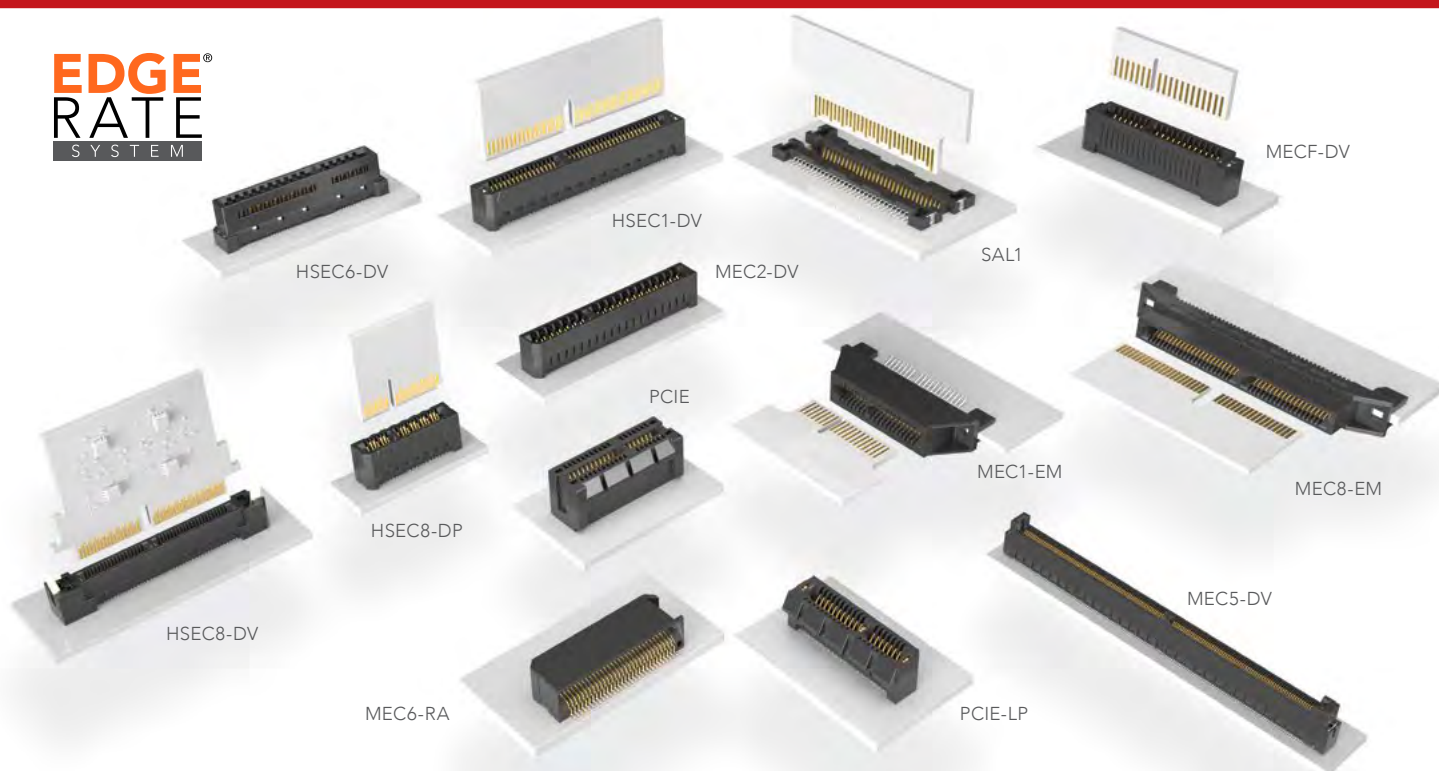


-05 LEAD STYLE

Components are to be packaged in separate bags unassembled.

HIGH-SPEED EDGE CARD SYSTEMS

SPEEDS TO 56 Gbps • RUGGED EDGE RATE® CONTACTS • VARIETY OF OPTIONS



64-71

HIGH-SPEED EDGE CARD INTERCONNECTS

0.60 mm Pitch Edge Rate® Socket (HSEC6)	65
0.80 mm Pitch Rugged Edge Card Socket (HSEC8)	66
0.80 mm Pitch Edge Rate® Socket (HSEC8)	67-70
1.00 mm Pitch Edge Rate® Socket (HSEC1)	71

72-79

MICRO/MINI EDGE CARD INTERCONNECTS

0.50 mm Pitch Micro Socket (MEC5)	73
0.635 mm Pitch Micro Socket (MEC6)	74
0.80 mm Pitch Micro Edge Socket (MEC8)	75-76
1.00 mm Pitch Mini Edge Card Socket (MEC1)	77-78
1.27 mm Pitch Mini Edge Card Socket (MECF)	79
2.00 mm Pitch Mini Edge Card Socket (MEC2)	79

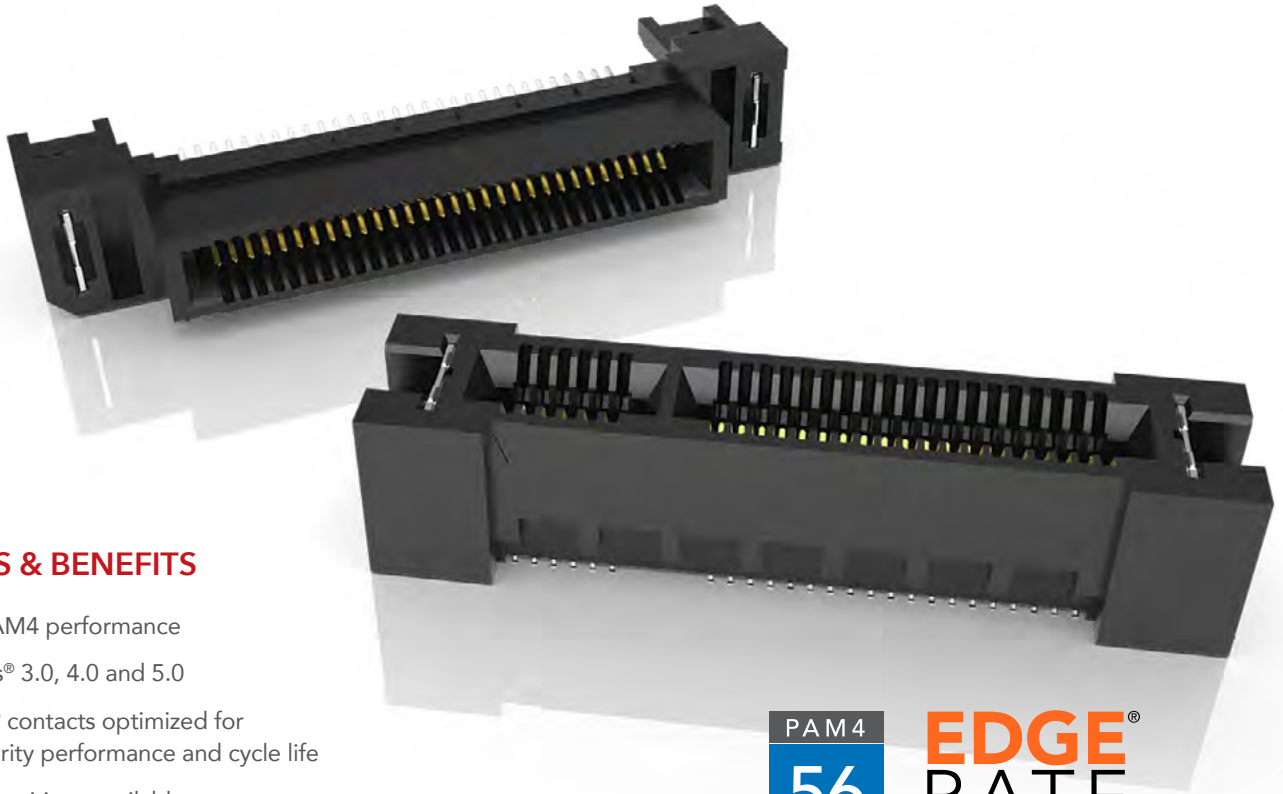
80-83

PCI EXPRESS® INTERCONNECTS

PCI Express® & Low-Profile PCI Express® Sockets (PCIE)	81
PCI Express® 4.0 & 5.0 Sockets (PCIE-G4 & PCIE-G5)	82
1.00 mm Pitch High-Speed Through Board Socket (SAL1)	83

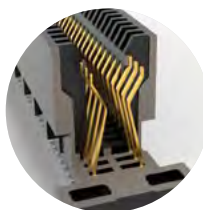
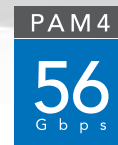
HIGH-SPEED EDGE CARD SYSTEMS

0.60 mm, 0.80 mm and 1.00 mm PITCH



FEATURES & BENEFITS

- 56 Gbps PAM4 performance
- PCI Express® 3.0, 4.0 and 5.0
- Edge Rate® contacts optimized for signal integrity performance and cycle life
- Up to 200 positions available
- Vertical, right-angle, edge mount, pass-through orientations
- Power/signal combo, press-fit tails, rugged weld tabs, locks and latches
- Mating cable assemblies available



Rugged tuck beam technology (HTEC8)



Differential pair for increased speed (HSEC8-DP)



Custom designs allow for misalignment in the X-Y axes (HSEC1)

KEY SPECIFICATIONS

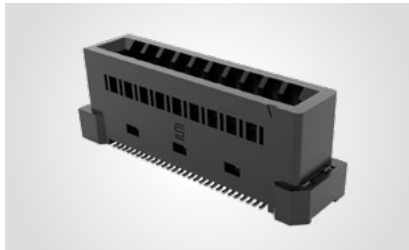
SERIES	PITCH	TOTAL POSITIONS	INSULATOR MATERIAL	CONTACT MATERIAL	OPERATING TEMP RANGE	CURRENT RATING	VOLTAGE RATING	LEAD-FREE SOLDERABLE
HSEC6	0.60 mm	56-168	Black LCP	Copper Alloy	-55 °C to +125 °C	0.8 A (12 pins)	300 VAC	Yes
HTEC8	0.80 mm	40-200	Black LCP	Copper Alloy	-55 °C to +125 °C	3.0 A (2 pins)	215 VAC	Yes
HSEC8	0.80 mm	18-200	Black LCP	BeCu	-55 °C to +125 °C	2.8 A (2 pins)	240 VAC	Yes
HSEC1	1.00 mm	20-140	Black LCP	Phosphor Bronze	-55 °C to +125 °C	2.2 A (2 pins)	215 VAC	Yes

(0.60 mm) .024" PITCH • VERTICAL EDGE CARD SOCKET

HSEC6	POSITIONS PER ROW	CARD THICKNESS	PLATING OPTION	DV	SHIELD OPTION	WT	"X" R
	-028, -042, -070, -084	-01 = (1.60 mm) .062" thick card	-L = 10 μ " (0.25 μ m) Gold on contact area, Matte Tin on tail -S = 30 μ " (0.76 μ m) Gold on contact area, Matte Tin on tail		Leave blank for no shield -S = Shield	-WT = Middle Weld tab (not available with -028 positions)	-TR = Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

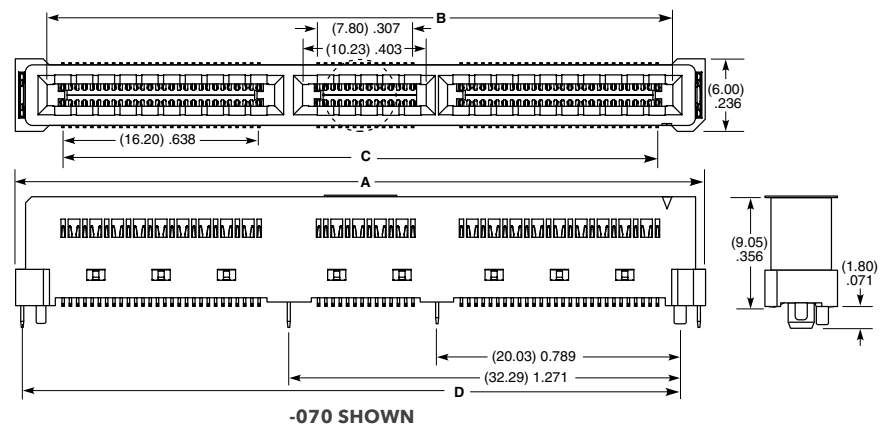
PRELIMINARY

HSEC6
Card Mates:
(1.60 mm)
.062" card



PCI
EXPRESS
5.0 CAPABLE

GEN **Z**



STANDARDS

SFF-TA-1002

Visit www.samtec.com/standards
for more information.

HIGH-SPEED PAIRS	SFF-TA-1002	POSITIONS PER ROW	A	B	C	D
x4, 8 DP's	1C	-028	(23.88) .940	(18.62) .733	(16.20) .638	(21.18) .834
x8, 16 DP's	2C	-042	(35.60) 1.402	(30.61) 1.205	(28.01) 1.103	(32.90) 2.295
x16, 32 DP's	4C	-070	(57.02) 2.245	(51.72) 2.036	(49.12) 1.934	(54.32) 2.139
	4C+	-084	(69.17) 2.723	(63.92) 2.516	(61.32) 2.414	(66.52) 2.619

Note:
Polyimide film pick & place
pad is standard.

Some sizes, styles and
options are non-standard,
non-returnable

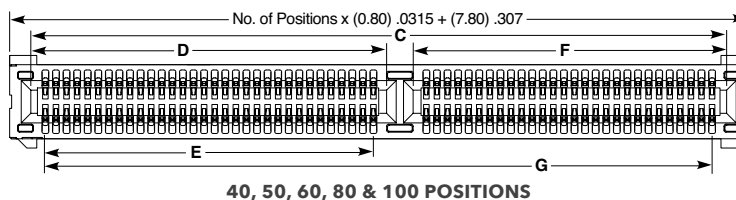
View complete specifications at: samtec.com?HSEC6-DV

(0.80 mm) .0315" PITCH • RUGGED HIGH-SPEED EDGE CARD SOCKET

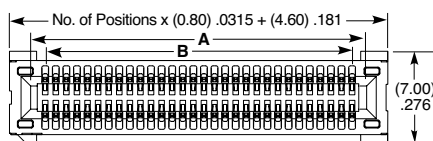
HTEC8	1	POSITIONS PER ROW	01	PLATING OPTION	DV	OPTION	OTHER OPTIONS
		20, 30, 40, 50, 60, 80, 100		-L = 10 μ" (0.25 μm) Gold on contact area, Matte Tin on tail -S = 30 μ" (0.76 μm) Gold on contact area, Matte Tin on tail		Leave blank for no alignment pin -A = Alignment Pin -WT = Weld Tab (-A option required)	-K = (7.00 mm) .276" DIA Polyimide Pick & Place Pad -TR = Tape & Reel (20 thru 60 positions only) (Leave blank for tray) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (20 thru 60 positions only) (Leave blank for tray)

HTEC8

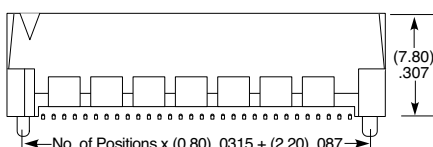
Card Mates:
(1.60 mm) .062"
thick card



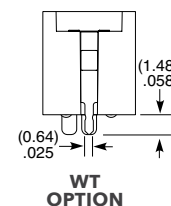
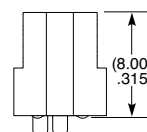
POSITIONS PER ROW	C	D	E	F	G
40	(36.60) 1.440	(18.90) .744	(16.80) .661	(15.70) .618	(34.40) 1.354
50	(44.60) 1.756	(22.90) .902	(20.80) .819	(19.70) .776	(42.40) 1.669
60	(52.60) 2.071	(26.90) 1.059	(24.80) .976	(23.70) .933	(50.40) 1.984
80	(68.60) 2.701	(26.90) 1.059	(24.80) .976	(39.70) 1.563	(66.40) 2.614
100	(84.60) 3.331	(26.90) 1.059	(24.80) .976	(55.70) 2.193	(82.40) 3.244



POSITIONS PER ROW	A	B
20	(17.40) .685	(15.20) 5.98
30	(25.40) 1.000	(23.20) .913



20 & 30 POSITIONS



Note:
Some sizes, styles and
options are non-standard,
non-returnable.

View complete specifications at: samtec.com?HTEC8

(0.80 mm) .0315" PITCH • VERTICAL EDGE CARD SOCKET

HSEC8	-	1	POSITIONS PER ROW	-	CARD THICKNESS	-	PLATING OPTION	-	DV	-	A	-	OTHER OPTIONS
-------	---	---	----------------------	---	-------------------	---	-------------------	---	----	---	---	---	------------------

**09, 10, 13, 20,
25, 30, 37, 40,
49, 50, 60, 70,
80, 100**

(13, 25, 49 only
available with -L or
-L2 option; 09 only
available with
-L2 option;
37 only available
with -L option)

-01
= (1.60 mm) .062"
thick card

-03
= (2.36 mm) .093"
thick card

-L
= 10 μ" (0.25 μm)
Gold on contact
area, Matte Tin
on tail

-S
= 30 μ" (0.76 μm)
Gold on contact
area, Matte Tin
on tail

-K
= Polyimide
Pick & Place Pad

-BL
= Board Locks; -01 card
only (Weld tab standard)

-L
= Latching Option;
-01 card only
(13, 25, 37, 49 only)
(Weld tab standard)

-L2
= ECDP Latching;
-01 card only
(09, 13, 25, 49 only)
(For use with ECDP)
(Weld tab standard)

-WT
= Weld tab

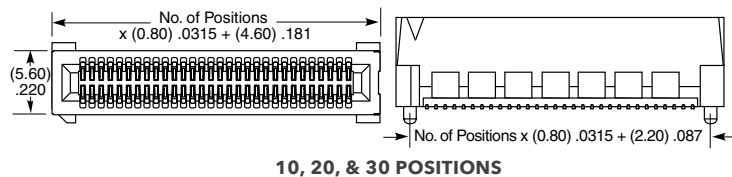
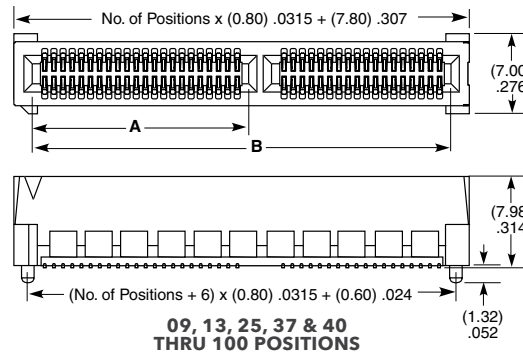
-TR
= Tape & Reel
(09 - 70 only)

-FR
= Full Reel Tape & Reel
(must order max.
quantities per reel;
contact Samtec for
quantity breaks)
(09-70 only)

HSEC8-DV

Card Mates:
(1.60 mm) .062" card
(2.36 mm) .093" card
HSC8

Cable Mates:
ECDP



OTHER SOLUTIONS

For complete edge card system
with cards and sockets,
visit samtec.com?RU8.

For a card to mate with
an HSEC8 socket,
visit samtec.com?HSC8



POSITIONS PER ROW	A	B	CABLE	CONNECTOR
09*†	(4.50) .177	(11.80) .465	ECDP-04	HSEC8-109-L2
13*†	(6.10) .240	(15.00) .591	ECDP-08	HSEC8-113-L2
25*†	(6.10) .240	(24.60) .969	ECDP-16	HSEC8-125-L2
37†	(18.10) .713	(34.20) 1.346	ECDP-32	HSEC8-149-L2
40	(18.90) .744	(36.60) 1.441		
49*†	(22.90) .902	(43.80) 1.724		
50	(22.90) .902	(44.60) 1.756		
60	(26.90) 1.059	(52.60) 2.071		
70†	(26.90) 1.059	(60.60) 2.386		
80†	(26.90) 1.059	(68.60) 2.701		
100†	(26.90) 1.059	(84.60) 3.331		

Positions where no dimensions are given do
not have keying feature.

* Mates with ECDP Series
† Available with -01 Card Only

Note:
Some sizes, styles and
options are non-standard,
non-returnable.

View complete specifications at: samtec.com?HSEC8-DV

(0.80 mm) .0315" PITCH • RIGHT-ANGLE & EDGE MOUNT SOCKET

HSEC8	1	POSITIONS PER ROW	CARD THICKNESS	PLATING OPTION	RA	OTHER OPTIONS	"X"R
-------	---	-------------------	----------------	----------------	----	---------------	------

09, 10, 13, 20,
25, 30, 40, 49,
50, 60

-01
= (1.60 mm) .062"
thick card

-L
= 10 μ " (0.25 μ m)
Gold on contact area,
Matte Tin on tail

-S
= 30 μ " (0.76 μ m)
Gold on contact area,
Matte Tin on tail

-BL
= Board Locks (09, 13,
25, 40, 49, 50, 60 only)

-L2
= ECDP Latching
(09, 13, 25, 49 only)

Leave blank for
Tray Packaging

-TR
= Tape & Reel

-FR
= Full Reel
Tape & Reel Packaging
(must order max.
quantity per reel;
contact Samtec for
quantity breaks)

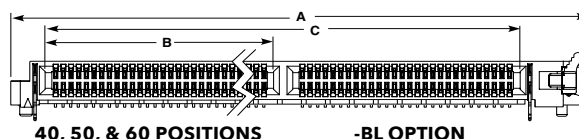
HSEC8-RA

Card Mates:
(1.60 mm) .062"
thick card,
HSC8

Cable Mates:
ECDP

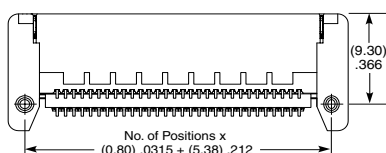


POSITIONS PER ROW	A	B	C
40	(43.80) 1.724	(18.90) .744	(36.60) 1.441
50	(51.80) 2.039	(22.90) .902	(44.60) 1.756
60	(59.80) 2.354	(26.90) 1.059	(52.60) 2.071
40-BL	(51.30) 2.020	(18.90) .744	(36.60) 1.441
50-BL	(59.30) 2.335	(22.90) .902	(44.60) 1.756
60-BL	(67.30) 2.650	(26.90) 1.059	(52.60) 2.071

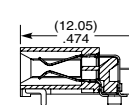
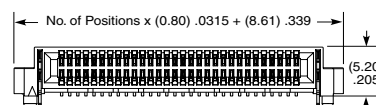


40, 50, & 60 POSITIONS

-BL OPTION



10, 20 & 30 POSITIONS



View complete specifications at: samtec.com?HSEC8-RA

HSEC8	1	POSITIONS PER ROW	01	PLATING OPTION	D	EM2
-------	---	-------------------	----	----------------	---	-----

10, 20, 30, 40,
50, 60

-L
= 10 μ " (0.25 μ m)
Gold on contact area,
Matte Tin on tail

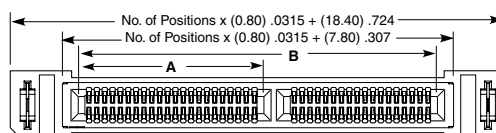
-S
= 30 μ " (0.76 μ m)
Gold on contact area,
Matte Tin on tail

-EM2
= (1.60 mm) .062"
thick PCB

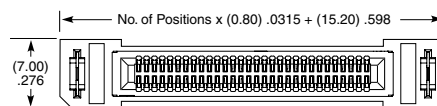
HSEC8-EM

Card Mates:
(1.60 mm) .062"
thick card,
HSC8

Cable Mates:
ECDP

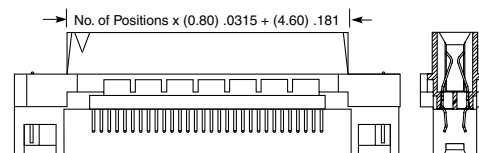


40, 50 & 60 POSITIONS



10, 20 & 30 POSITIONS

POSITIONS PER ROW	A	B
40	(18.90) .744	(36.60) 1.441
50	(22.90) .902	(44.60) 1.756
60	(26.90) 1.059	(52.60) 2.071



Note:
Some sizes, styles and
options are non-standard,
non-returnable.

View complete specifications at: samtec.com?HSEC8-EM

(0.80 mm) .0315" PITCH • PASS-THROUGH & POWER COMBO

HSEC8	1	POSITIONS PER ROW	CARD THICKNESS	PLATING OPTION	DV	A	PE	OTHER OPTIONS
-------	---	-------------------	----------------	----------------	----	---	----	---------------

10, 13, 20
-01
= (1.60 mm) .062"
thick card

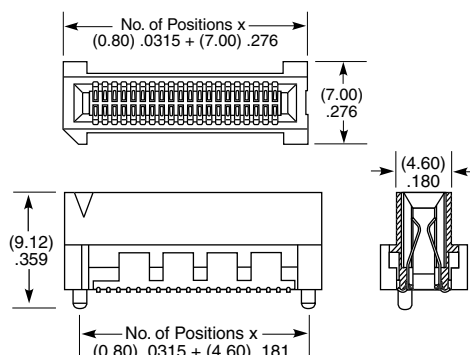
-L
= 10 μ " (0.25 μ m)
Gold on contact
area, Matte Tin
on tail

-S
= 30 μ " (0.76 μ m)
Gold on contact
area, Matte Tin
on tail

-K
= (5.50 mm)
.217" DIA
Polyimide Film
Pick & Place Pad

-TR
=Tape & Reel
Packaging

-FR
= Full Reel
Tape & Reel Packaging
(Must order max.
quantities per reel.
Contact Samtec for
parts per reel)

HSEC8-PE
Card Mates:
(1.60 mm) .062"
thick card,
HSC8

View complete specifications at: samtec.com?HSEC8-DV

HSEC8	1	SIGNAL POSITIONS	CARD THICKNESS	PLATING OPTION	PV	POWER POSITIONS	POWER TAIL	OTHER OPTION
-------	---	------------------	----------------	----------------	----	-----------------	------------	--------------

20, 30, 40
(Signal positions
per row)

-01
= (1.60 mm) .062"
thick card

-L
= 10 μ " (0.25 μ m)
Gold on contact
area, Matte Tin
on tail

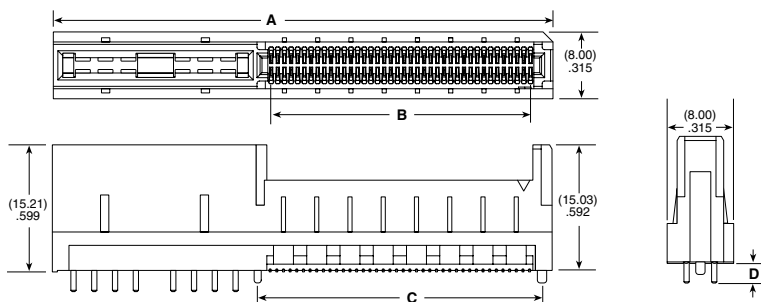
-S
= 30 μ " (0.76 μ m)
Gold on contact
area, Matte Tin
on tail

-2, -4
(Total, 2 per
power bank)

-1
= Use with
(1.60 mm)
.062" Thick
PCB

-2
= Use with
(2.36 mm)
.093" Thick
PCB

-WT
= Weld Tab

HSEC8-PV
Card Mates:
(1.60 mm) .062"
thick card


SIGNAL POSITIONS	POWER POSITIONS						POWER TAIL	D
	A (-2)	B (-2)	C (-2)	A (-4)	B (-4)	C (-4)		
20	(32.10) 1.264	(15.20) .598	(18.20) .717	(44.10) 1.736	(15.20) .598	(18.20) .717	-1	(2.35) .093
30	(40.10) 1.579	(23.20) .913	(26.20) 1.031	(52.10) 2.051	(23.20) .913	(26.20) 1.031	-2	(3.13) .123
40	(48.10) 1.894	(31.20) 1.228	(34.20) 1.346	(60.10) 2.366	(31.20) 1.228	(34.20) 1.346		

Note:
Some sizes, styles and
options are non-standard,
non-returnable.

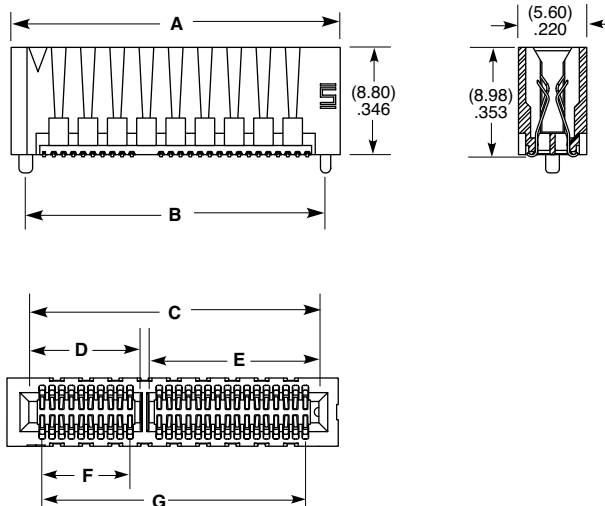
View complete specifications at: samtec.com?HSEC8-PV

0.80 mm (.0315") PITCH • DIFFERENTIAL PAIR EDGE CARD

HSEC8	1	NUMBER OF PAIRS	01	PLATING OPTION	DP	A	OPTION	K	"X"R
		08, 12, 16, 20, 32, 56 (Total Pairs)		-L = 10 μ " (0.25 μ m) Gold on contact area, Matte Tin on tail			Leave blank for weld tab -WT = Weld Tab	-K = (6.25 mm) .246" DIA Polyimide Film Pick & Place Pad	Leave blank for Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

HSEC8-DP

Card Mates:
(1.60 mm) .062"
thick card



NUMBER OF PAIRS	A	B	C	D	E	F	G
08	(17.40) .685	(15.00) .591	(14.20) .559	(4.34) .171	(9.14) .360	(2.40) .094	(12.00) .472
12	(22.20) .874	(19.80) .780	(19.00) .748	(6.74) .265	(11.54) .454	(4.80) .189	(16.80) .661
16	(27.00) 1.063	(24.60) .969	(23.80) .937	(9.14) .360	(13.94) .549	(7.20) .283	(21.60) .850
20	(31.80) 1.252	(29.40) 1.157	(28.60) 1.126	(11.54) .454	(16.34) .643	(9.60) .378	(26.40) 1.039
32	(46.20) 1.819	(43.80) 1.724	(43.00) 1.693	(18.74) .738	(23.54) .927	(16.80) .661	(40.80) 1.606
56	(75.00) 2.953	(72.60) 2.858	(71.80) 2.827	(33.14) 1.305	(37.94) 1.494	(31.20) 1.228	(69.60) 2.740

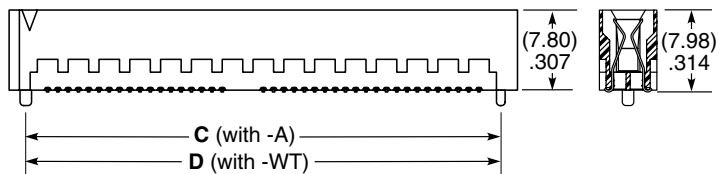
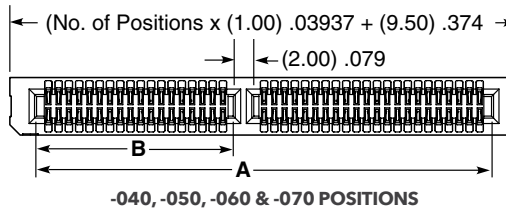
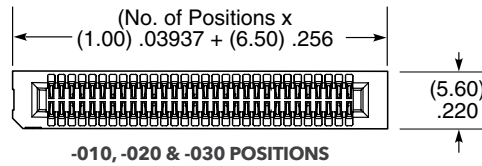
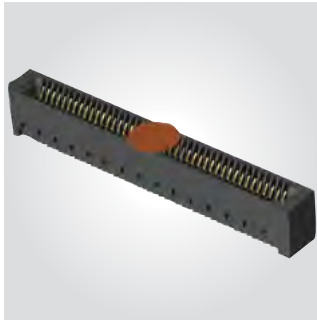
Note:
Some sizes, styles and
options are non-standard,
non-returnable.

View complete specifications at: samtec.com?HSEC8-DP

1.00 mm (.0394") PITCH • VERTICAL HIGH-SPEED EDGE CARD

HSEC1	POSITIONS PER ROW	CARD THICKNESS	PLATING OPTION	DV	OPTION	OTHER OPTIONS
	-010, -020, -030, -040, -050, -060, -070	-01 =(1.60 mm) .062" thick card	-L = 10 μ" (0.25 μm) Gold on contact area, Matte Tin on tail -S = 30 μ" (0.76 μm) Gold on contact area, Matte Tin on tail		-A or -WT required in callout -A =Alignment Pin (Not available with -WT) -WT =Weld tab (Not available with -A)	-K =(7.01 mm) .276" DIA Polyimide Film Pick & Place Pad -TR =Tape & Reel (Required for 10-60 positions) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (Required for 10-60 positions)

HSEC1-DV
Card Mates:
(1.60 mm) .062"
thick card



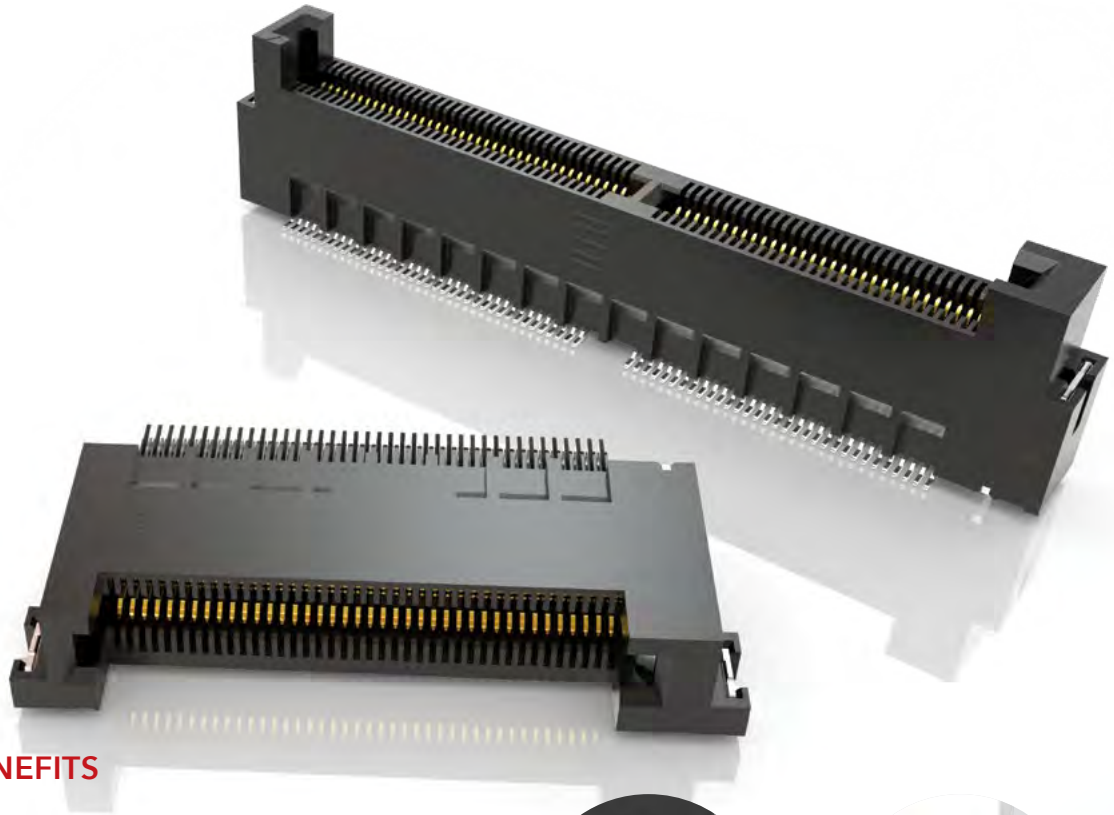
POSITIONS PER ROW	A	B	C (with -A)	D (with -WT)
-010	(11.30) .445	N/A	(13.25) .522	(14.50) .571
-020	(21.30) .839	N/A	(23.25) .915	(24.50) .965
-030	(31.30) 1.232	N/A	(33.25) 1.309	(34.50) 1.358
-040	(44.30) 1.744	(19.15) .754	(46.25) 1.821	(47.50) 1.870
-050	(54.30) 2.138	(24.15) .951	(56.25) 2.215	(57.50) 2.264
-060	(64.30) 2.531	(29.15) 1.148	(66.25) 2.608	(67.50) 2.657
-070	(74.30) 2.925	(34.15) 1.344	(76.25) 3.002	(77.50) 3.051

Note:
Some sizes, styles and
options are non-standard,
non-returnable.

View complete specifications at: samtec.com?HSEC1-DV

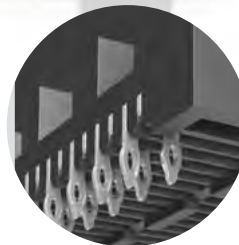
MICRO EDGE CARD SYSTEMS

0.50 mm, 0.635 mm, 0.80 mm, 1.00 mm, 1.27 mm, 2.00 mm PITCH



FEATURES & BENEFITS

- Up to 56 Gbps PAM4
- PCI Express® 4.0 (MEC5 Series)
- Solutions for .062" (1.60 mm), and .093" (2.36 mm) thick cards
- Choice of pitch: 0.50 mm, 0.635 mm, 0.80 mm, 1.00 mm, 1.27 mm, 2.00 mm
- Vertical, right-angle, edge mount
- Available in surface mount and through-hole



Staggered press-fit tails
(MEC8-VP)



Justification beam ensures
card and body are flushed
(MEC5)

KEY SPECIFICATIONS

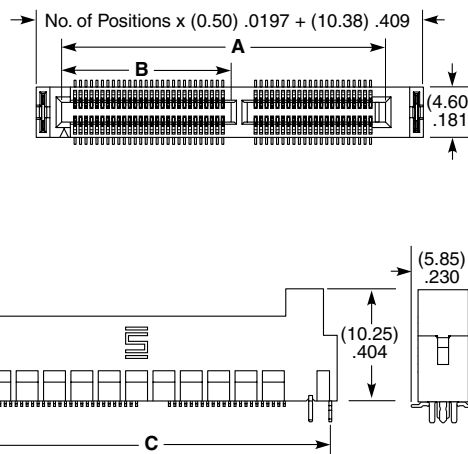
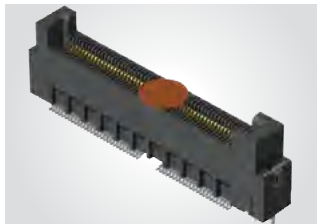
SERIES	PITCH	TOTAL POSITIONS	INSULATOR MATERIAL	CONTACT MATERIAL	OPERATING TEMP RANGE	CURRENT RATING	VOLTAGE RATING	LEAD-FREE SOLDERABLE
MEC5	0.50 mm	60-200	Black LCP	Phosphor Bronze	-55 °C to +125 °C	1.5 A (2 pins)	125 VAC	Yes
MEC6	0.635 mm	20-140	Black LCP	Phosphor Bronze	-55 °C to +125 °C	2.4 A (2 pins)	195 VAC	Yes
MEC8	0.80 mm	20-140	Black LCP	Phosphor Bronze	-55 °C to +125 °C	1.8 A (4 pins)	185 VAC	Yes
MEC1	1.00 mm	20-140	Black LCP	Phosphor Bronze	-55 °C to +125 °C	2.2 A (2 pins)	250 VAC	Yes
MECF	1.27 mm	10-100	Black/Natural LCP	BeCu	-55 °C to +125 °C	3.5 A (2 pins)	280 VAC	Yes
MEC2	2.00 mm	10-100	Black/Natural LCP	BeCu	-55 °C to +125 °C	3.5 A (2 pins)	238 VAC	Yes

(0.50 mm) .0197" PITCH • MICRO EDGE CARD SOCKET

MEC5	POSITIONS PER ROW	01	PLATING OPTION	TAIL OPTION	WELD TAB OPTION	OTHER OPTION	"X"R
	-030, -040, -050, -060, -070, -080 (-RA & -DV)		-L =10 μ" (0.25 μm) Gold on contact, Matte Tin on tail	-DV Vertical -RA Right-angle	-W1 = Weld Tab Through-hole (Required for -DV option) -W2 = Weld Tab Surface Mount (Not available for -DV)	-K = Polyimide Pick & Place Pad (Required for -DV) (Not available in -RA)	Leave blank for Tray Packaging -TR = Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

MEC5-DV

Card Mates:
(1.60 mm) .062"
thick card with
standard board
tolerance



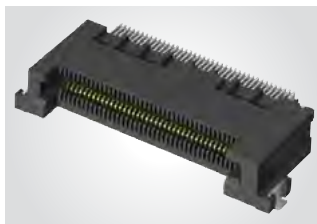
POSITIONS PER ROW	A	B	C
-030	(17.10) .673	N/A	(21.63) .852
-040	(22.10) .870	N/A	(26.63) 1.048
-050	(29.60) 1.165	(15.48) .609	(34.13) 1.344
-060	(34.60) 1.362	(17.98) .708	(39.13) 1.541
-070	(39.60) 1.559	(20.48) .806	(44.13) 1.737
-080	(44.60) 1.756	(22.98) .905	(49.13) 1.934
-090	(49.60) 1.953	(25.48) 1.003	(54.13) 2.131
-100	(54.60) 2.150	(27.98) 1.102	(59.13) 2.328

Note: Polarization rib is not present on
-030 & -040 positions

View complete specifications at: samtec.com?MEC5-DV

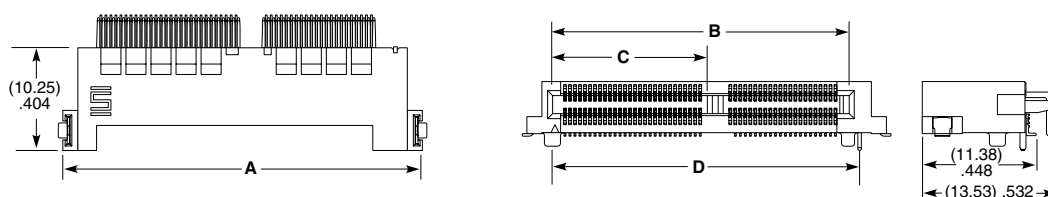
MEC5-RA

Card Mates:
(1.60 mm) .062"
thick card with
standard board
tolerance



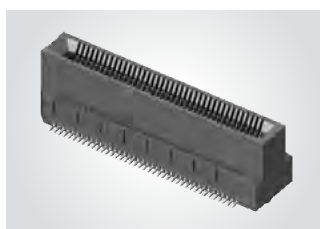
POSITIONS PER ROW	A	B	C	D
-30	(23.38) .920	(17.10) .673	N/A	(18.16) .715
-40	(28.38) 1.117	(22.10) .870	N/A	(23.16) .912
-50	(35.88) 1.413	(29.60) 1.165	(15.44) .608	(30.66) 1.207
-60	(40.88) 1.609	(34.60) 1.362	(17.94) .706	(35.66) 1.404
-70	(45.88) 1.806	(39.60) 1.559	(20.44) .805	(40.66) 1.601
-80	(50.88) 2.003	(44.60) 1.756	(22.94) .903	(45.66) 1.798

Note: Polarization rib is not present on
-030 & -040 positions

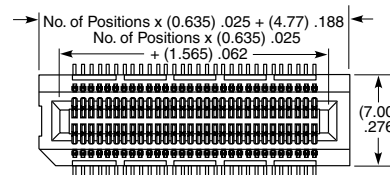
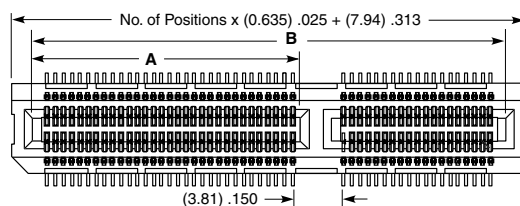
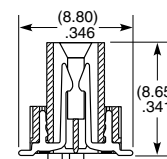
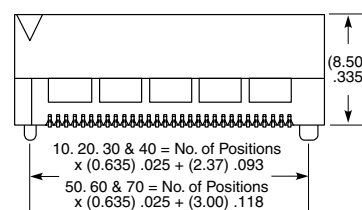
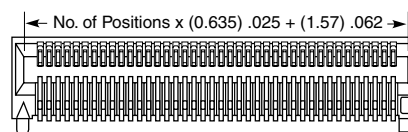
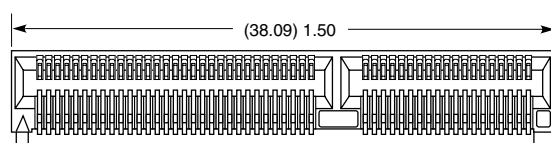
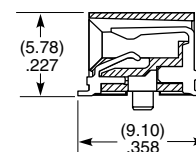
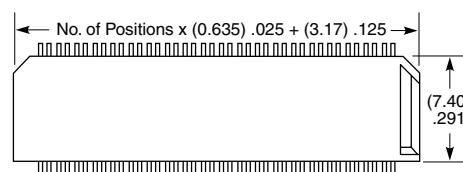


Note:
Some sizes, styles and
options are non-standard,
non-returnable.

View complete specifications at: samtec.com?MEC5-RA

(0.635 mm) .025" PITCH • VERTICAL AND RIGHT-ANGLE EDGE CARD SOCKET**MEC6****1****POSITIONS
PER ROW****02****PLATING
OPTION****DV****A****OPTION****"X"R****10, 20, 30, 40,
50, 60, 70****-L**
= 10 μ " (0.25 μ m)
Gold on contact,
Matte Tin on tail**-K**
= (5.50 mm) 2.17" DIA
Polyimide Pick
& Place PadLeave blank
for Tray Packaging**-TR**
= Tape & Reel**-FR**
= Full Reel
Tape & Reel
(must order max.
quantity per reel;
contact Samtec for
quantity breaks)**MEC6-DV****Card Mates:**
(1.60 mm) .062"
thick card

POSITIONS PER ROW	A	B
50	(21.06) .829	(36.49) 1.437
60	(24.87) .979	(42.84) 1.687
70	(28.68) 1.129	(49.19) 1.937

**10, 20, 30 & 40 POSITIONS****50, 60 & 70 POSITIONS**View complete specifications at: samtec.com?MEC6-DV**MEC6****1****POSITIONS
PER ROW****02****PLATING
OPTION****D****TAIL****OPTIONS****10, 20, 30,
40, 50****-L**
= 10 μ " (0.25 μ m)
Gold on contact,
Matte Tin on tail**-RA1**
= Right angle**-TR**
= Tape & Reel**-FR**
= Full Reel Tape & Reel
(must order max. quantity
per reel; contact Samtec
for quantity breaks)**MEC6-RA****Card Mates:**
(1.60 mm) .062"
thick card**10, 20, 30 & 40 POSITIONS****50 POSITIONS****Note:**
Some sizes, styles and
options are non-standard,
non-returnable.View complete specifications at: samtec.com?MEC6-RA

(0.80 mm) .0315" PITCH • VERTICAL AND PRESS-FIT EDGE CARD SOCKET

MEC8	-	1	POSITIONS PER ROW	-	02	-	PLATING OPTION	-	DV	-	OTHER OPTIONS	-	"X"R
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10, 20, 30, 40,
50, 60, 70

-L
= 10 μ " (0.25 μ m)
Gold on contact,
Matte Tin on tail

-A
= Alignment Pin

-K
= (5.50 mm) 2.17" DIA
Polyimide Pick
& Place Pad

Leave blank for
Tray Packaging

-TR
= Tape & Reel

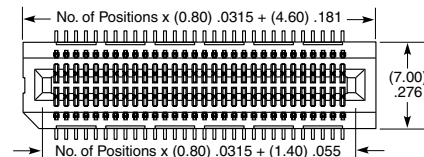
-FR
= Full Reel
Tape & Reel
(must order max.
quantity per reel;
contact Samtec for
quantity breaks)

MEC8-DV

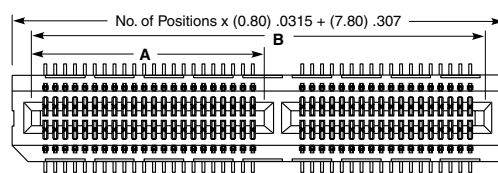
Card Mates:
(1.60 mm) .062"
thick card



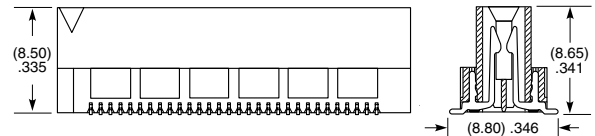
POSITIONS PER ROW	A	B
40	(18.90) .744	(36.60) 1.441
50	(22.90) .902	(44.60) 1.756
60	(26.90) 1.059	(52.60) 2.071
70	(30.90) 1.217	(60.60) 2.386



10, 20, & 30 POSITIONS



40, 50, 60 & 70 POSITIONS



View complete specifications at: samtec.com?MEC8-DV

MEC8	-	1	POSITIONS PER ROW	-	CARD THICKNESS	-	PLATING OPTION	-	TAIL
------	---	---	-------------------	---	----------------	---	----------------	---	------

10, 20, 30, 40

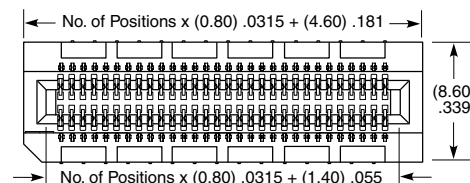
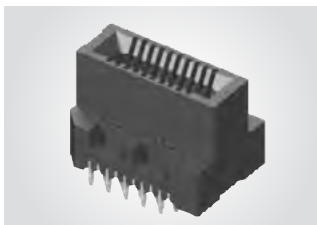
-02
= (1.60 mm) .062"
thick card

-L
= 10 μ " (0.25 μ m)
Gold on contact,
Matte Tin on tail

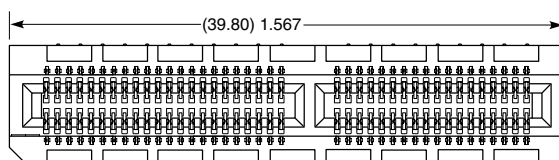
-VP
= Press-fit

MEC8-VP

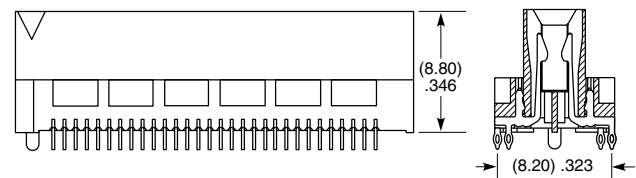
Card Mates:
(1.60 mm) .062"
thick card



10, 20 & 30 POSITIONS

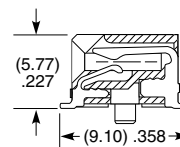
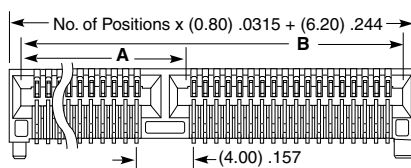
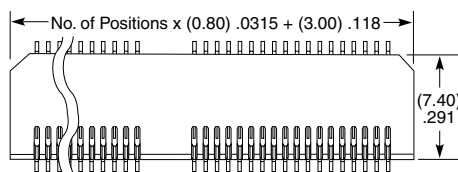
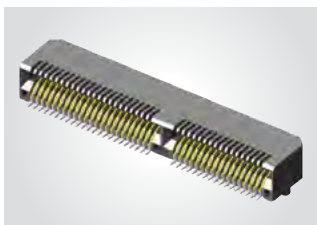


40 POSITIONS

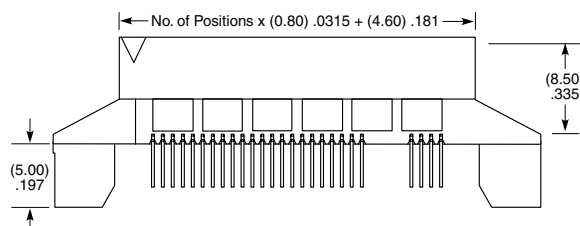
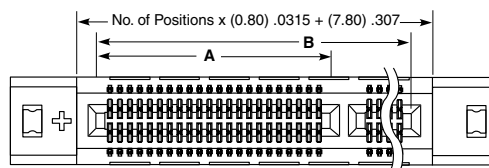
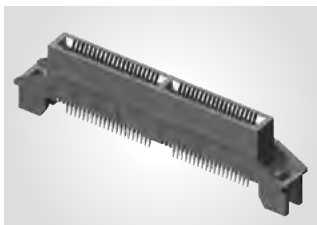


Note:
Some sizes, styles and
options are non-standard,
non-returnable.

View complete specifications at: samtec.com?MEC8-VP

(0.80 mm) .0315" PITCH • RIGHT-ANGLE/EDGE MOUNT EDGE CARD SOCKET**MEC8****1****POSITIONS PER ROW****02****PLATING
OPTION****D****RA1****"X"R**10, 13, 20,
25, 30, 37, 40,
49, 50-L
= 10 μ" (0.25 μm)
Gold on contact,
Matte Tin on tailLeave blank
for Tray Packaging-TR
= Tape & Reel-FR
= Full Reel
Tape & Reel
(must order max.
quantity per reel;
contact Samtec for
quantity breaks)**MEC8-RA1****Card Mates:**
(1.60 mm) .062"
thick card

POSITIONS PER ROW	A	B
13	(6.10) .240	(15.00) .591
25		(24.60) .969
37	(18.10) .713	(34.20) 1.346
40	(18.90) .744	(36.60) 1.441
49	(22.90) .902	(43.80) 1.724
50		(44.60) 1.756

View complete specifications at: samtec.com?MEC8-RA**MEC8****1****POSITIONS PER ROW****02****PLATING
OPTION****D****EM2**10, 20, 30, 40,
50, 60, 70-L
= 10 μ" (0.25 μm)
Gold on contact,
Matte Tin on tail**MEC8-EM****Card Mates:**
(1.60 mm) .062"
thick card

POSITIONS PER ROW	A	B
40	(18.90) .744	(36.60) 1.441
50	(22.90) .902	(44.60) 1.756
60	(26.90) 1.059	(52.60) 2.071
70	(30.90) 1.217	(60.60) 2.386

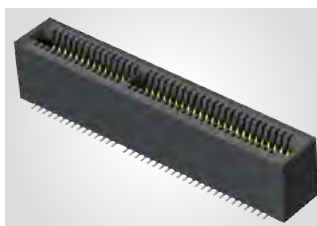
Note:
Some sizes, styles and
options are non-standard,
non-returnable.View complete specifications at: samtec.com?MEC8-EM

(1.00 mm) .0394" PITCH • MINI EDGE CARD SOCKET

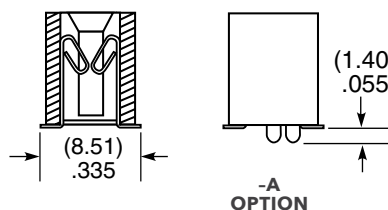
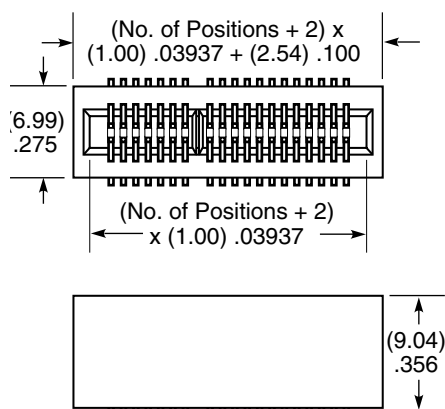
MEC1	1	POSITIONS PER ROW	02	PLATING OPTION	D	NP	OTHER OPTIONS
		05, 08, 20, 30, 40, 50, 60, 70		-F = Gold flash on contact, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail		-NP = No Polarization (05, 08, 20 & 30 positions only) Leave blank for polarization	-A = Alignment Pin metal or plastic at Samtec discretion -K = (7.87 mm) .310" DIA Polyimide film Pick & Place Pad -TR = Tape & Reel (05-60 only) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (05-60 only)

MEC1

Card Mates:
(1.60 mm) .062" thick card



POSITIONS PER ROW	POLARIZED POSITIONS (No Contact)
05	3, 4
08	5, 6
20	15, 16
30	21, 22
40	31, 32
50	41, 42
60	31, 32, 63 & 64
70	53, 54, 115 & 116



Note:
Some sizes, styles and options are non-standard, non-returnable.

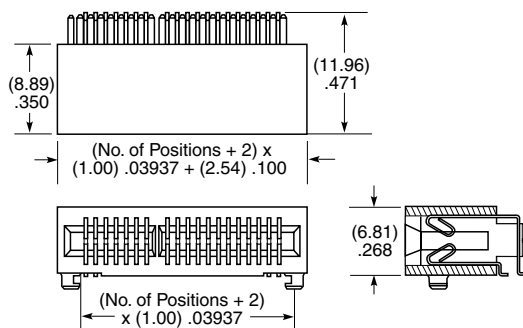
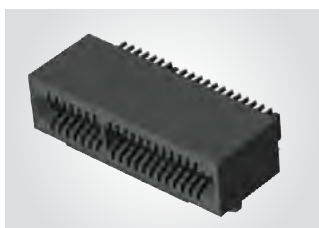
View complete specifications at: samtec.com?MEC1

(1.00 mm) .0394" PITCH • RIGHT-ANGLE/EDGE MOUNT EDGE CARD SOCKET

MEC1	1	POSITIONS PER ROW	02	PLATING OPTION	D	RA1	NP	SL	"X"R
		05, 08, 20, 30, 40, 50, 60, 70		-F = Gold Flash on contact, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail			-NP = No Polarization (8 positions only) Leave blank for polarization		Leave blank for tubes -TR = Tape & Reel (not available with 70 positions) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (not available with 70 positions)

MEC1-RA

Card Mates:
(1.60 mm) .062" thick card



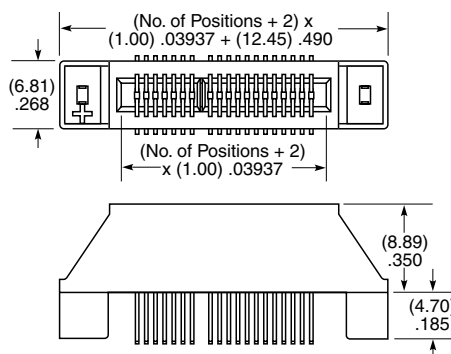
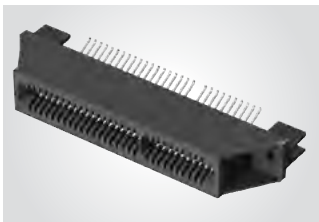
POSITIONS PER ROW	POLARIZED POSITIONS (No Contact)
05	3, 4
08	5, 6
20	15, 16
30	21, 22
40	31, 32
50	41, 42
60	31, 32, 63 & 64
70	53, 54, 115 & 116

View complete specifications at: samtec.com?MEC1-RA

MEC1	1	POSITIONS PER ROW	02	PLATING OPTION	D	EM2	NP	"X"R
		05, 08, 20, 30, 40, 50, 60, 70		-F = Gold Flash on contact, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail			-NP = No Polarization (8 positions only) Leave blank for polarization	Leave blank for Tray Packaging -TR = Tape & Reel (not available with 60 & 70 positions) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (not available with 60 & 70 positions)

MEC1-EM

Card Mates:
(1.60 mm) .062" thick card



POSITIONS PER ROW	POLARIZED POSITIONS (No Contact)
05	3, 4
08	5, 6
20	15, 16
30	21, 22
40	31, 32
50	41, 42
60	31, 32, 63 & 64
70	53, 54, 115 & 116

Note:
Some sizes, styles and options are non-standard, non-returnable.

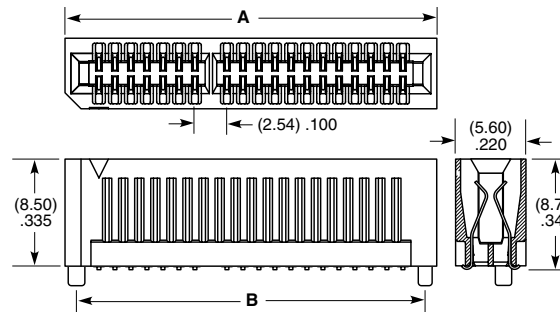
View complete specifications at: samtec.com?MEC1-EM

(1.27 mm) .050" PITCH • MINI EDGE CARD SOCKET

MECF	POSITIONS PER ROW	CARD THICKNESS	PLATING OPTION	DV	OPTION	"X"R
	-05, -08, -20, -30, -40, -50	-01 = (1.60 mm) .062" thick card -02 = (2.36 mm) .093" thick card	-L =10 μ" (0.25 μm) Gold on contact, Matte Tin on tail		-WT = Weld Tabs (Standard on -02 card thickness, optional on -01 card thickness) -K Polyimide film pick & place pad (-"X"R only)	Leave blank for tubes -TR = Tape & Reel -FR = Full ReelTape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

MECF

Card Mates:
(1.60 mm) .062"
thick card
(2.36 mm) .093"
thick card



POSITIONS PER ROW	A	B
-05	(10.46) .412	(8.64) .340
-08	(14.27) .562	(12.45) .490
-20	(29.51) 1.162	(27.69) 1.090
-30	(42.21) 1.662	(40.39) 1.590
-40	(54.91) 2.162	(53.09) 2.090
-50	(67.61) 2.662	(65.79) 2.590

POSITIONS PER ROW	POLARIZED POSITIONS (No Contact)
-05	3, 4
-08	5, 6
-20	15, 16
-30	21, 22
-40	31, 32
-50	41, 42

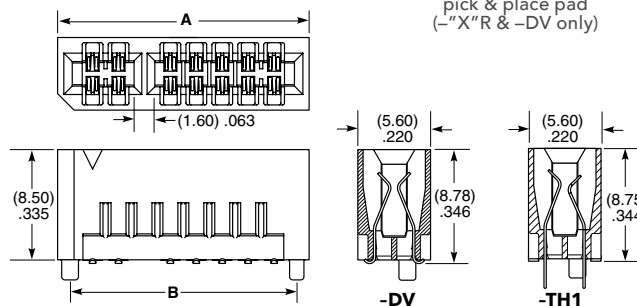
View complete specifications at: samtec.com?MECF-DV

(2.00 mm) .0787" PITCH • MINI EDGE CARD SOCKET

MEC2	POSITIONS PER ROW	CARD THICKNESS	PLATING OPTION	TAIL OPTION	OPTION	"X"R
	-05, -08, -20, -30, -40, -50	-01 = (1.60 mm) .062" thick card -02 = (2.36 mm) .093" thick card (-DV option only)	-L =10 μ" (0.25 μm) Gold on contact, Matte Tin on tail	-DV Vertical Surface Mount -TH1 Through-hole	-WT = Weld Tabs (standard on -02 card, optional on -01 card) -K Polyimide film pick & place pad (-"X"R & -DV only)	Leave blank for tubes -TR = Tape & Reel (05 thru 30 positions only) (Not available with -TH1) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (05 thru 30 positions only) (Not available with -TH1)

MEC2-DV

Card Mates:
(1.60 mm) .062"
thick card
(2.36 mm) .093"
thick card



MEC2-TH

Card Mates:
(1.60 mm) .062"
thick card



POSITIONS PER ROW	A	B	POSITIONS PER ROW	POLARIZED POSITIONS (No Contact)
-05	(13.40) .528	(11.50) .453	-05	3, 4
-08	(19.40) .764	(17.50) .689	-08	5, 6
-20	(43.40) 1.709	(41.50) 1.634	-20	15, 16
-30	(63.40) 2.496	(61.50) 2.421	-30	21, 22
-40	(83.40) 3.283	(81.50) 3.209	-40	31, 32
-50	(103.40) 4.071	(101.50) 3.996	-50	41, 42

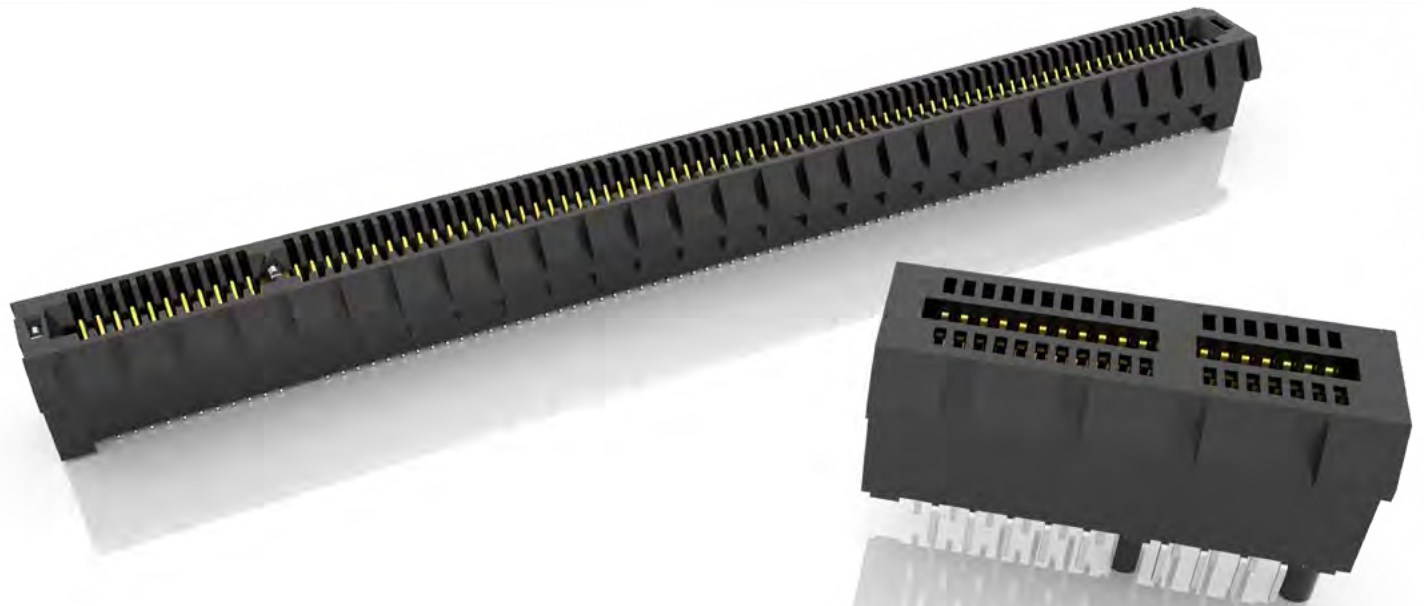
Note:
Some sizes, styles and
options are non-standard,
non-returnable.

View complete specifications at: samtec.com?MEC2-DV & samtec.com?MEC2-TH



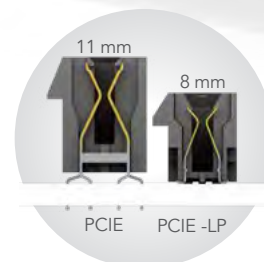
PCI EXPRESS® EDGE CARD SOCKETS

(1.00 mm) .0394" PITCH



FEATURES & BENEFITS

- 1.00 mm pitch
- Supports 1, 4, 8 and 16 PCI Express® links
- PCIe® 3.0 Solution (PCIe)
- PCIe® 4.0 Solution with low-profile design for space savings (PCIe-LP)
- PCIe® 4.0 with slim body design (PCIe-G4)
- PCIe® 5.0 Solution with differential pair signaling (PCIe-G5)
- Vertical, right-angle and edge mount
- Mates with .062" (1.60 mm) thick cards
- Alignment pin and weld tab options



PCIe® 3.0 & 4.0
Edge Card
connectors



PCIe® 4.0 slim body
socket with Edge Rate®
contacts (PCIe-G4)

KEY SPECIFICATIONS

SERIES	TOTAL PINS (LANES)	INSULATOR MATERIAL	CONTACT MATERIAL	OPERATING TEMP RANGE	CURRENT RATING	VOLTAGE RATING	PCIe® COMPATIBILITY
PCIe	36 (x1), 64 (x4), 98 (x8), 164 (x16)	-TH = Black Nylon -EMS2 & -TH = LCP	Phosphor Bronze	-55 °C to +125 °C	2.4 A (2 pins)	215 VAC	3.0
PCIe-LP	36 (x1), 64 (x4), 98 (x8), 164 (x16)	LCP	Phosphor Bronze	-55 °C to +125 °C	2.1 A (2 pins)	215 VAC	4.0
PCIe-G4	36 (x1), 64 (x4), 98 (x8), 164 (x16)	LCP	Copper Alloy	-55 °C to +125 °C	2.2 A (2 pins)	300 VAC	4.0
PCIe-G5	36 (x1), 64 (x4), 98 (x8), 164 (x16)	LCP	Copper Alloy	-55 °C to +125 °C	3.2 A (2 pins)	235 VAC	5.0

(1.00 mm) .0394" PITCH • PCI EXPRESS® CARD SOCKETS

PCIE	NUMBER OF POSITIONS	02	PLATING OPTION	D	TAIL OPTION
------	---------------------	----	----------------	---	-------------

-036, -064,
-098, -164

-F
=Gold flash on contact,
Tin on tail

-EMS2
= Edge Mount

-TH
=Through-hole

-RA
=Right-angle

PCIE

Card Mates:

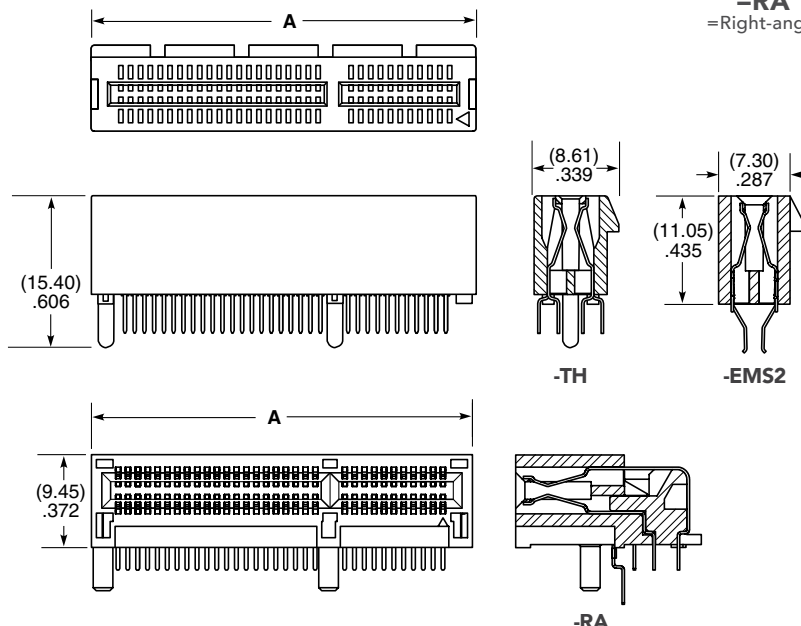
(1.60 mm)
.062" card

Cable Mates:

PCIEC



POSITIONS	A
-036 (x1)	(25.00) .984
-064 (x4)	(39.00) 1.535
-098 (x8)	(56.00) 2.205
-164 (x16)	(89.00) 3.504



View complete specifications at: samtec.com?PCIE

PCIE	LP	NUMBER OF LANES	01	PLATING OPTION	DV	A	OPTION	PACKAGING
------	----	-----------------	----	----------------	----	---	--------	-----------

-01, -04,
-08, -16

-F
= Gold Flash on
contact, Matte
Tin on tail

-S
= 30 μ" (0.75 μm)
Gold on contact,
Matte Tin on tail

-WT
= Weld Tab

-K
= Polyimide film
Pick & Place Pad

(For -16 lanes
only leave blank for
Tray Packaging)

-TR
= Tape & Reel
(Available with
-01, -04, -08
lanes only)

-FR
= Full Reel
Tape & Reel
(must order max.
quantity per reel;
contact Samtec for
quantity breaks)
(Available with -01,
-04, -08 lanes only)

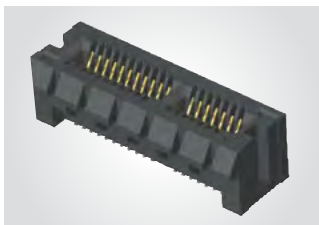
PCIE-LP

Card Mates:

(1.60 mm)
.062" card

Cable Mates:

PCIEC



NUMBER OF LANES	A
-01	(26.60) 1.047
-04	(40.60) 1.598
-08	(57.60) 2.268
-16	(90.60) 3.567

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the PCIe® design marks are
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service marks of PCI-SIG.

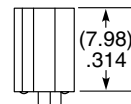
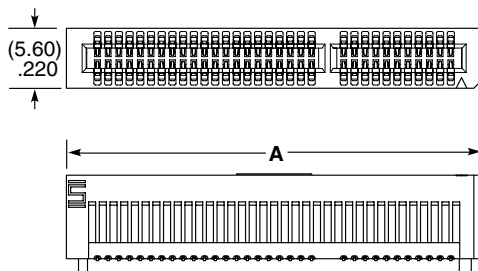
Note:
Some lengths, styles and
options are non-standard,
non-returnable.

View complete specifications at: samtec.com?PCIE-LP

(1.00 mm) .0394" PITCH • PCI EXPRESS® 4.0 SOCKET

PCIE	-	G4	-	NUMBER OF LANES	-	01	-	PLATING OPTION	-	DV	-	OPTION 1	-	OPTION 2	-	PACKAGING
				-01, -04, -08, -16				-F = Gold flash on contact, Matte Tin on tail -S = 30 μ" (0.76 μm) Gold on contact, Matte Tin on tail				-A = Alignment Pin (Not available with -WT) -WT = Weld Tab (Not available with -A)		-K = (7.00 mm) .275" DIA Polyimide Pick & Place Pad		(For -16 lanes only leave blank for Tray Packaging) -TR = Tape & Reel (Available with -01, -04, -08 lanes only) -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks) (Available with -01, -04, -08 lanes only)

PCIE-G4
Card Mates:
(1.60 mm)
.062" card



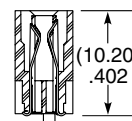
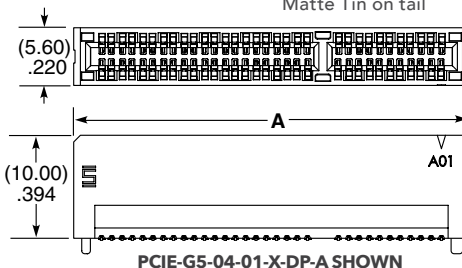
NUMBER OF LANES	A
-01	(26.70) 1.051
-04	(40.70) 1.602
-08	(57.70) 2.272
-16	(90.70) 3.571

View complete specifications at: samtec.com?PCIE-G4

(1.00 mm) .0394" PITCH • PCI EXPRESS® 5.0 SOCKET

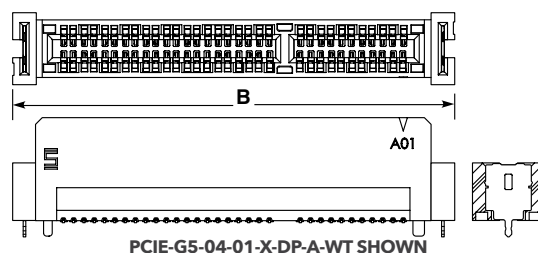
PCIE	-	G5	-	NUMBER OF LANES	-	01	-	PLATING OPTION	-	DP	-	A	-	OPTION
				-01, -04, -08, -16				-F = Gold flash on contact, Matte Tin on tail -S = 30 μ" (0.76 μm) Gold on contact, Matte Tin on tail						-WT = Weld Tab

PCIE-G5
Card Mates:
(1.60 mm)
.062" card



NUMBER OF LANES	A	B (with -WT)
-01	(24.40) .961	(26.70) 1.051
-04	(38.40) 1.512	(40.70) 1.602
-08	(55.40) 2.181	(57.70) 2.272
-16	(88.40) 3.480	(90.70) 3.571

PCIE-G5-04-01-X-DP-A SHOWN



PCIE-G5-04-01-X-DP-A-WT SHOWN

PRELIMINARY

PCI-SIG®, PCI Express® and the PCIe® design marks are registered trademarks and/or service marks of PCI-SIG.

Note:
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?PCIE-G5

HIGH-SPEED THROUGH BOARD SOCKET

(1.00 mm) .0394" PITCH • SAL1 SERIES

14
G b p s



SAL1

Card Mates:

(1.60 mm) .062" or
(2.36 mm) .093" card

SPECIFICATIONS

Insulator Material:

Black LCP

Contact Material:

BeCu

Plating:

Au or Sn over 50 μ " (1.27 μ m) Ni

Operating Temp Range:

-55 °C to +125 °C

Current Rating:

2.9 A per pin
(2 adjacent pins powered)

PROCESSING

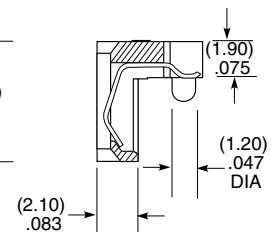
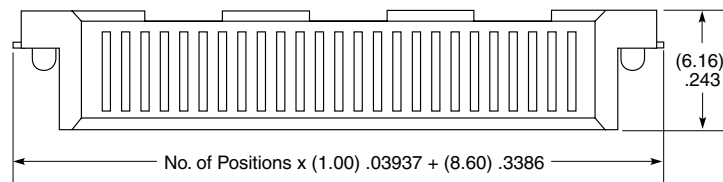
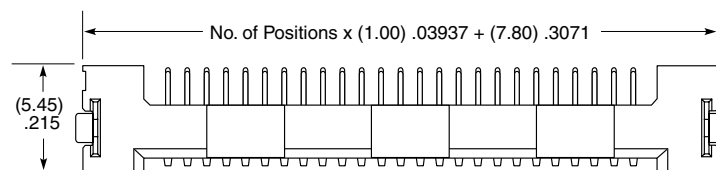
Lead-Free Solderable:

Yes

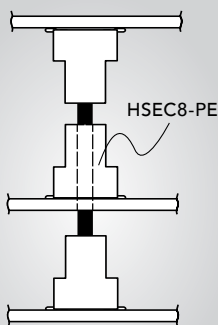
SMT Lead Coplanarity:

(0.10 mm) .004" max

SAL1	-	1	NO. OF POSITIONS	-	01	PLATING OPTION	-	S	-	A	-	OPTION
			-20, -27, -30, -40			-S = 30 μ " (0.76 μ m) Gold on contact, Matte tin on tail						-TR = Tape & Reel -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks)

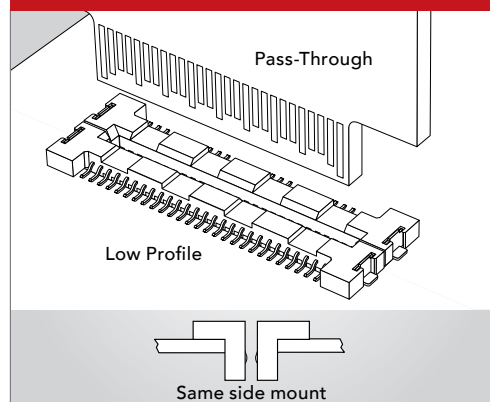


OTHER SOLUTION



Card pass-through option.
See HSEC8-PE Series.

APPLICATIONS



Notes:

While optimized for 50 Ω applications, this connector with alternative signal/ground patterns may also perform well in certain 75 Ω applications..

Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?SAL1

samtec.com/EdgeCard

F-221

EDGE CARD REFERENCE GUIDE

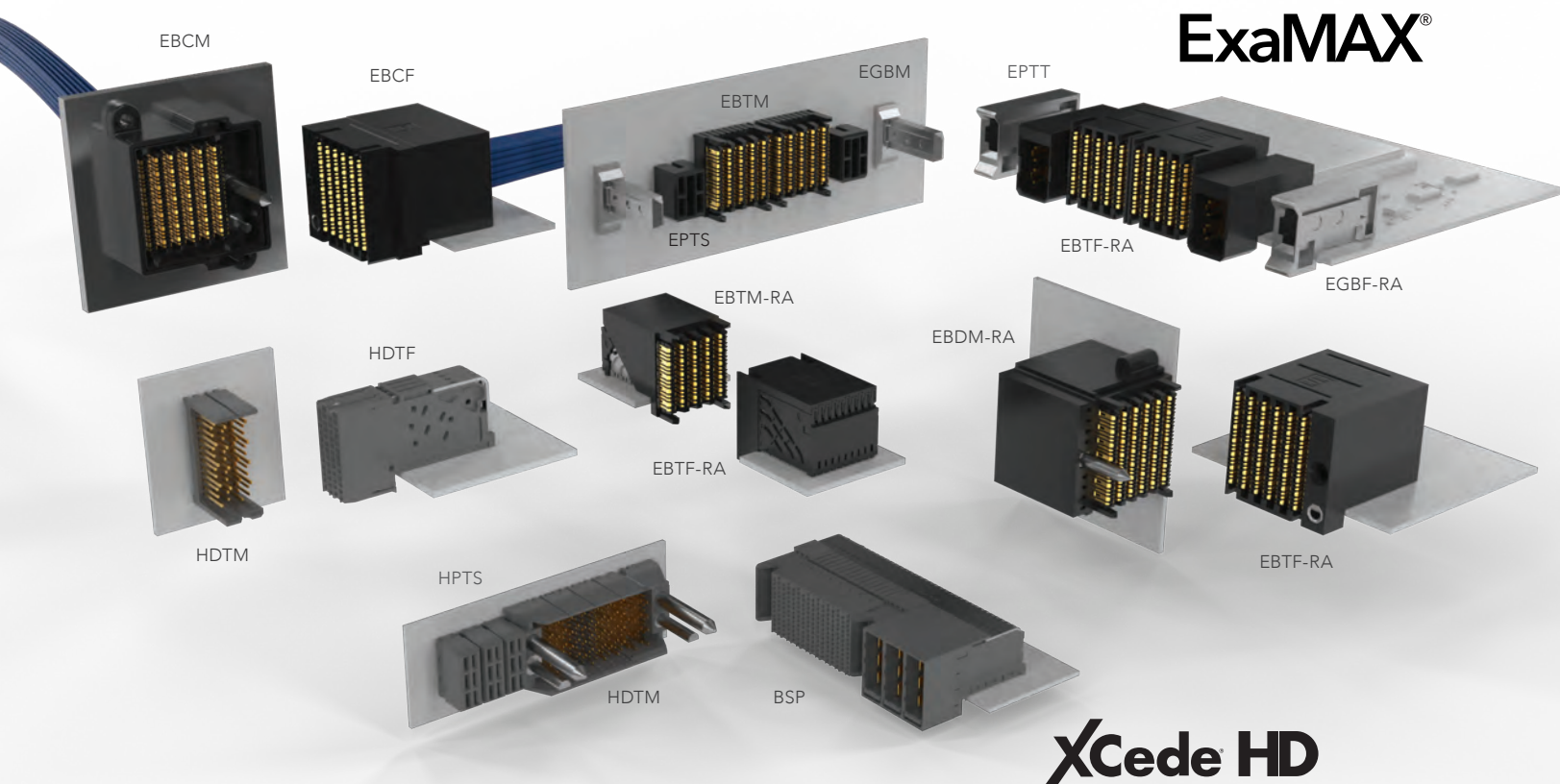
	MEC5	HSEC6	MEC6	MEC8	HSEC8	HSEC8-DP	HTEC8
METROLOGY							
Pitch	0.50 mm	0.60 mm	0.635 mm	0.80 mm			
Total Pin Counts	60-300	56, 84, 140, 168	20-140		18-200	16, 24, 32, 40, 64, 112	40-200
Linear Density (circuits/mm)	3.30	2.35, 2.36, 2.46, 2.42	2.67	2.19	2.28		
Card Thickness	.062"			.062"	.062" & .093"	.062"	
Orientations Available	V, RA	V	V, RA	V, RA, EM, PF	V, RA, EM, PT	V	
MECHANICAL PERFORMANCE							
Average Normal Force per Circuit (GRF)	50	96	100		60		38
Wipe (mm)	1.10	1.20	2.00	2.10	2.00	2.48	1.91
Mating/Unmating Force per Circuit (GRF)	30/25	46	50/30		40/20		TBD
ELECTRICAL PERFORMANCE (LOW FREQUENCY)							
Current Carrying Capacity (Amps)	1.5 (2 pins)	0.8 (12 pins)	2.4 (2 pins)	1.8 (4 pins)	2.8 (2 pins)	2.7 (2 pins)	3.0 (2 pins)
Working Voltage (VAC)	125	300	195	185	240	235	215
PCIe® Compatibility	4.0	5.0	2.0	2.0	4.0	5.0	4.0
ELECTRICAL PERFORMANCE (HIGH FREQUENCY)							
Designed to be Impedance Matched	Yes	Yes	No			Yes	No
Channel Performance Metric (Gbps)	56 PAM4		14	25	28	56 PAM4	28
Characteristic Impedance (Single-Ended, 30 ps rise time, Ohms)	42-55	85	46-58	41-56	43-58	Differential Pair	
ENVIRONMENTAL PERFORMANCE							
Durability (Cycles)	100	25	100	1,000			100
MFG Tested	No			Yes		No	
Au is the only interface finish available. Recommended operating environment is a controlled environment.							

	SAL1	MEC1	HSEC1	PCIE-LP	PCIE	MECF	MEC2
METROLOGY							
Pitch	1.00 mm					1.27 mm	2.00 mm
Total Pin Counts	20, 27, 30, 40	20-140	20-140	36 (x1), 64 (x4), 98 (x8), 164 (x16)		10-100	10-100
Linear Density (circuits/mm)	1.96	1.88	1.76	1.84		1.48	0.97
Card Thickness	Variable	.062"				.062" & .093"	
Orientations Available	PT	V, RA, EM	V		V, RA, EM	V	
MECHANICAL PERFORMANCE							
Average Normal Force per Circuit (GRF)	80	60		75	55	70	
Wipe (mm)	1.50	2.95	2.00	2.70	3.50	3.00	
Mating/Unmating Force per Circuit (GRF)	40/30	40/20		30/15		45/20	
ELECTRICAL PERFORMANCE (LOW FREQUENCY)							
Current Carrying Capacity (Amps)	2.9 (2 pins)	2.2 (2 pins)		2.1 (2 pins)	2.4 (2 pins)	3.5 (2 pins)	
Working Voltage (VAC)	215	250	215	215		280	238
PCIe® Compatibility	2.0	2.0	4.0	4.0	3.0	2.0	2.0
ELECTRICAL PERFORMANCE (HIGH FREQUENCY)							
Designed to be Impedance Matched	No					No	
Channel Performance Metric (Gbps)	14		28	28	14	25	14
Characteristic Impedance (Single-Ended, 30 ps rise time, Ohms)	43-70	33-57	45-55	Differential Pair		43-70	43-58
Durability (Cycles)	100	500	1,000	100			
MFG Tested	No		Yes	No	Yes	No	
Au is the only interface finish available. Recommended operating environment is a controlled environment.							

All products are tested to a standard amplitude and frequency; this parameter gives an average resistance change as a result of that standardized test.

HIGH-SPEED BACKPLANE SYSTEMS

HIGH-DENSITY • DESIGN FLEXIBILITY • HIGH RELIABILITY



86-91

ExaMAX®

ExaMAX® Vertical & Right-Angle Headers (EBTM)	87
ExaMAX® Right-Angle Receptacles (EBTF-RA)	88
ExaMAX® Direct-Mate Orthogonal Headers (EBDM-RA)	88
Power Modules for ExaMAX® (EPTT, EPTS)	89
Guidance Modules for ExaMAX® (EGBM, EGBF)	89
ExaMAX® Cable Systems (EBCM, EBCF, EBCB, EBCL)	90-91

92-94

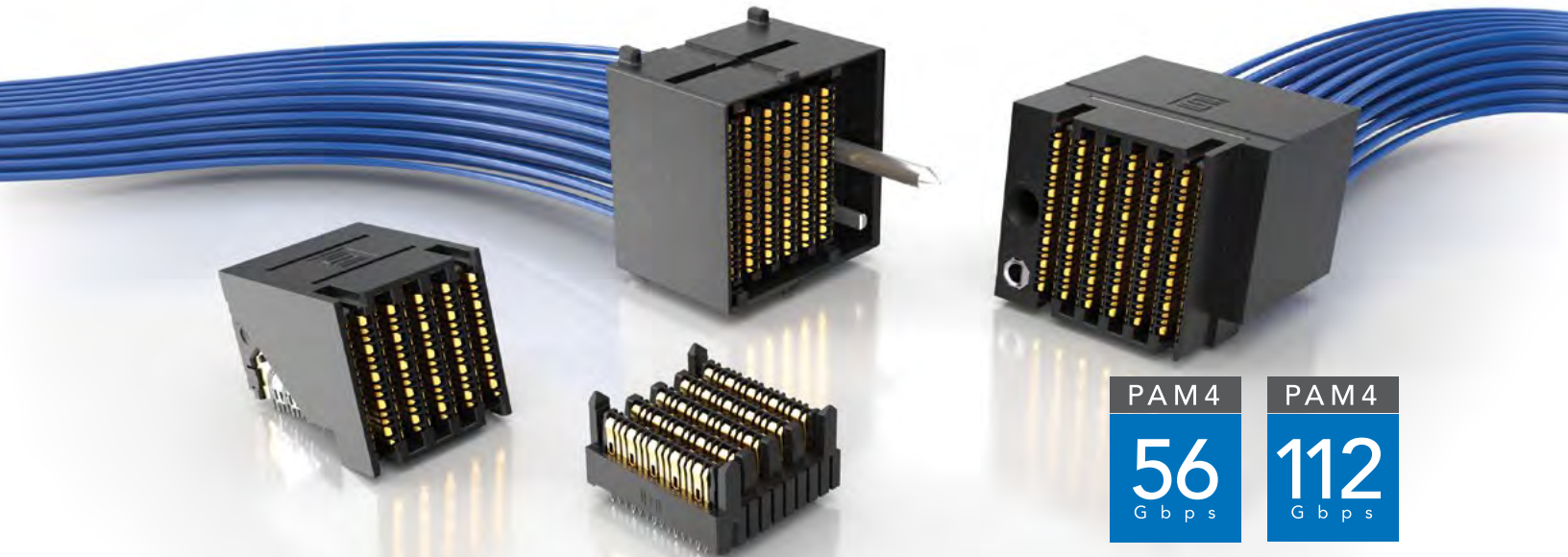
XCede® HD

XCede® HD Backplane Headers & Receptacles (HDTM, HDTF)	92-94
XCede® HD Power Modules (HPTS)	94

ExaMAX[®]

HIGH-SPEED BACKPLANE CONNECTOR & CABLE SYSTEMS

(2.00 mm) .0787" PITCH



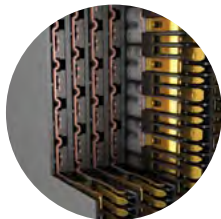
FEATURES & BENEFITS

ExaMAX[®] High-Speed Backplane System

- Meets a variety of industry specifications
- Exceeds OIF CEI-28G-LR specification for 28 Gbps standards
- 24 - 72 pair designs (4 and 6 pairs; 6, 8, 10 and 12 columns)
- Wafer design increases isolation for reduced crosstalk
- Press-fit tails provide a reliable electrical connection

ExaMAX[®] High-Speed Backplane Cable Assemblies

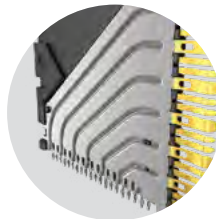
- 30 & 34 AWG Eye Speed[®] Ultra Low Skew Twinax Cable offers improved signal integrity, increased flexibility and routability
- Highly customizable with modular flexibility
- Reduce costs due to lower layer counts
- Multiple end options available



Staggered
Differential Pair Design



Two Reliable Points of
Contact at All Times



Wafer Design
Reduces Crosstalk



Traditional, Coplanar and
Direct Mate Orthogonal



Intermateable with all
ExaMAX[®] Connectors

KEY SPECIFICATIONS

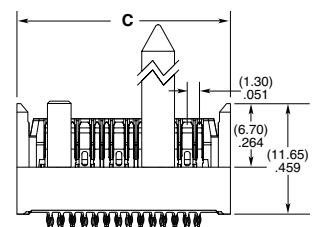
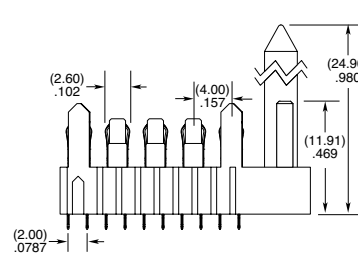
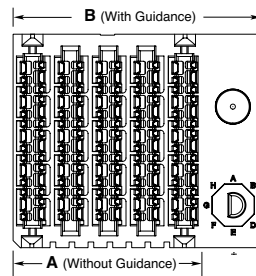
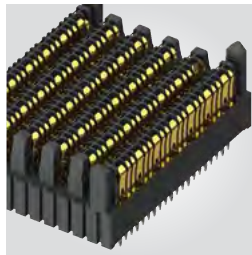
PITCH	INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	OPERATING TEMP RANGE	CURRENT RATING
2.00 mm	LCP Zinc Alloy (EGBX Series only)	Copper Alloy	Sn over 50 μ " (1.27 μ m) Ni	-55 °C to +105 °C	4.2 A per pin

(2.00 mm) .0787" PITCH • VERTICAL & RIGHT-ANGLE HEADERS

EBTM	NO. OF PAIRS PER COLUMN	COLUMNS	COLUMN PITCH	PLATING	ORIENTATION	1	GUIDANCE	KEYING
	-4 = 4 Pairs -6 = 6 Pairs	-06, -08, -10, -12 (-12 column only available in -6 pairs)	-2.0 = (2.0 mm) .0787"	-S = 30 μ" (0.76 μm) Gold on contact area, Matte Tin on tail	-VT = Vertical -RA = Right-Angle		(Leave Blank for no Guidance) -L = Left Guidance -R = Right Guidance	(Only available with -L or -R Guidance) (Leave Blank for no Keying) -A thru -H = Position of flat on Key (See Table)

EBTM-VT
Board Mates:
EBTF-RA

Cable Mates:
EBCF



KEYING (-VT)								
-L / -R	-A	-B	-C	-D	-E	-F	-G	-H

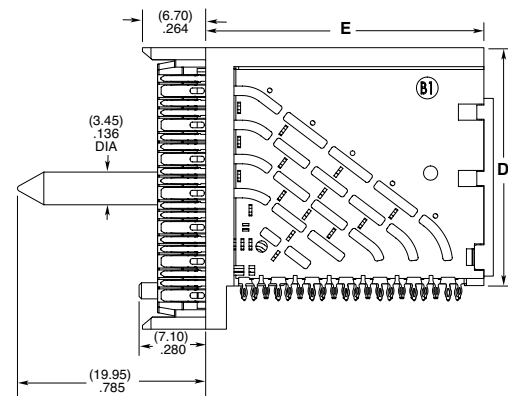
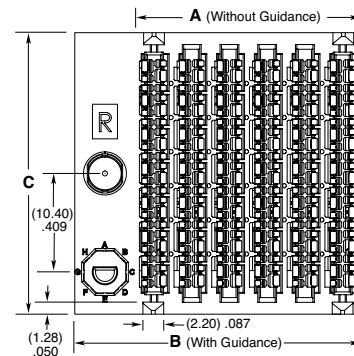
COLUMNS	A	B
-06	(11.90) .469	(18.35) .722
-08	(15.90) .626	(22.35) .880
-10	(19.90) .783	(26.35) 1.037
-12	(23.90) .941	(30.35) 1.195

NO. OF PAIRS PER COLUMN	C
-4	(22.50) .886
-6	(29.70) 1.169

View complete specifications at: samtec.com?EBTM

EBTM-RA
Board Mates:
EBTF-RA

Cable Mates:
EBCF



KEYING (-RA)								
-L / -R	-A	-B	-C	-D	-E	-F	-G	-H

COLUMNS	A	B
-06	(11.90) .469	(18.35) .722
-08	(15.90) .626	(22.35) .880
-10	(19.90) .783	(26.35) 1.037
-12	(23.90) .941	(30.35) 1.195

NO. OF PAIRS PER COLUMN	C	D	E
-4	(22.50) .886	(17.90) .705	(23.30) .917
-6	(29.70) 1.169	(25.10) .988	(30.50) 1.201

View complete specifications at: samtec.com?EBTM-RA

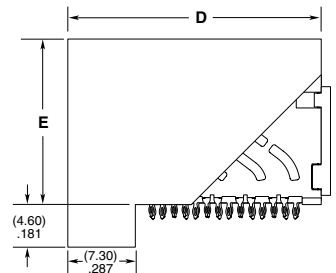
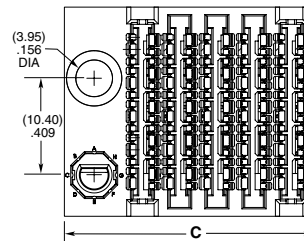
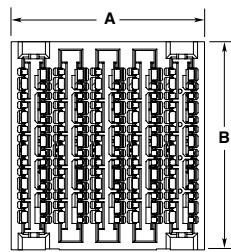
Notes:
Some lengths, styles and options are non-standard, non-returnable.
ExaMAX[®] is a registered trademark of AFCL.

(2.00 mm) .0787" PITCH • RIGHT-ANGLE SOCKET & DIRECT-MATE ORTHOGONAL

EBTF	NO. OF PAIRS PER COLUMN	COLUMNS	COLUMN PITCH	PLATING	RA	1	GUIDANCE	KEYING
	-4 = 4 Pairs -6 = 6 Pairs	-06, -08, -10, -12 (-12 column only available in -6 pairs)	-2.0 = (2.0 mm) .0787"	-S = 30 μ" (0.76 μm) Gold on contact area, Matte Tin on tails			(Leave Blank for no Guidance) -L = Left Guidance -R = Right Guidance	(Only with -L or -R Guidance; Leave Blank for no Keying) -A thru -H = Position of Flat on Key (See Table)

EBTF-RA
Board Mates:
EBTM,
EBDM-RA

Cable Mates:
EBCM



KEYING (-RA)							
-L / -R	-A	-B	-C	-D	-E	-F	-G

NO. OF COLUMNS	A	C
-06	(12.90) .508	(18.85) .742
-08	(16.90) .665	(22.85) .900
-10	(20.90) .823	(26.85) 1.057
-12	(24.90) .980	(30.85) 1.215

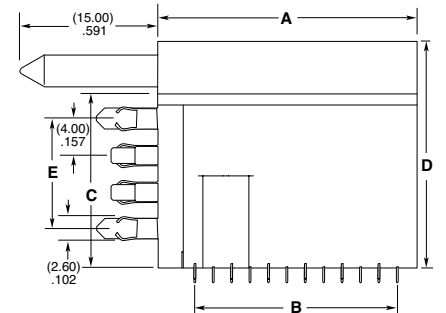
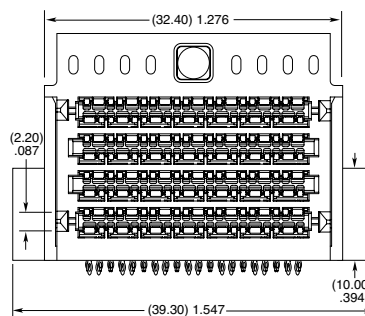
NO. OF PAIRS PER COLUMN	B	D	E
-4	(22.50) .886	(28.40) 1.118	(17.90) .705
-6	(29.70) 1.169	(35.60) 1.402	(25.10) .988

View complete specifications at: samtec.com?EBTF-RA

EBDM	PAIRS	COLUMNS	2.0	PLATING	RA	1	GUIDANCE	SCREW MOUNT
	-6 = 6 Pairs	-06, -08, -10, -12		-S = 30 μ" (0.76 μm) Gold on contact area, Matte Tin on tails			(Leave Blank for no Pin) -G = Guide Pin	(Leave Blank for no Screw Mount) -S = Screw Mount

EBDM-RA
Board Mates:
EBTF-RA

Cable Mates:
EBCF



COLUMNS	A	B	C (without -G)	D (with -G)	E
-06	(16.15) .636	(10.00) .394	(15.00) .591	(20.65) .813	(8.00) .315
-08	(20.15) .793	(14.00) .551	(19.00) .748	(24.65) .970	(12.00) .472
-10	(24.15) .951	(18.00) .709	(23.00) .906	(28.65) 1.128	(16.00) .630
-12	(28.15) 1.108	(22.00) .866	(27.00) 1.063	(32.65) 1.285	(20.00) .787

Notes:
Some lengths, styles and options are non-standard, non-returnable.

ExaMAX[®] is a registered trademark of AFCI.

View complete specifications at: samtec.com?EBDM-RA

ExaMAX[®] POWER MODULES

(2.00 mm) .0787" PITCH TERMINAL POWER MODULES



EPTT
Mates with:
EPTS

EPTT	POSITIONS PER ROW	PLATING	HEIGHT	D	ORIENTATION
	-2 = 4 Positions	-P = Palladium with flash Gold on contacts, Matte Tin on tails	-11.5 = (11.50 mm) .453"		-RA = Right-Angle

(2.00 mm) .0787" PITCH SOCKET POWER MODULES



EPTS
Mates with:
EPTT

EPTS	POSITIONS PER ROW	PLATING	D	ORIENTATION	PIN STAGING
	-2 = 4 Positions	-P = Palladium with flash Gold on contacts, Matte Tin on tails		-VT = Vertical -RA = Right-Angle	-01 thru -06 (-RA available with -04 only. Visit website for dimensions.)

View complete specifications at: samtec.com?EPTT & samtec.com?EPTS

ExaMAX[®] GUIDE MODULES

TERMINAL GUIDE MODULES



EGBM
Mates with:
EGBF

EGBM	ORIENTATION	THREADING	LENGTH	CARD SPACING
	-VT = Vertical -RA = Right-Angle	Leave Blank for -RA -1 = External -2 = Internal (25.3 Length only)	Leave Blank for -RA -18.3 = 18.30 mm (.720") -25.3 = 25.30 mm (.996")	-20 = 20 mm (.787")

SOCKET GUIDE MODULES



EGBF
Mates with:
EGBM

EGBF	ORIENTATION	CARD SPACING
	-RA = Right-Angle	-20 = 20 mm (.787")

View complete specifications at: samtec.com?EGBM & samtec.com?EGBF

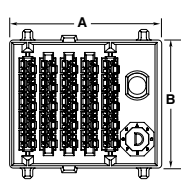
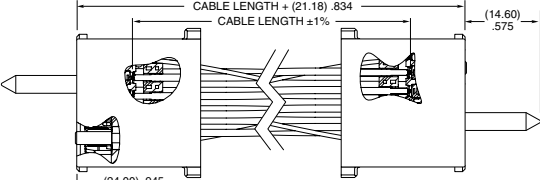
Notes:
Some lengths, styles and options are non-standard, non-returnable.

ExaMAX[®] is a registered trademark of AFCI.

(2.00 mm) .0787" PITCH • BACKPLANE CABLES

EBCM	GAUGE/ SIG. MAP	PAIRS PER COLUMN	COLUMNS	END 1 PIN	END 1 GUIDE	END 1 KEY	CABLE LENGTH	END 2 PIN	END 2 GUIDE	END 2 KEY
Cable Header	-1 = 34 AWG/Tx to Rx Sig. Map -2 = 30 AWG/Tx to Rx Sig. Map -3 = 34 AWG/1:1 Sig. Map -4 = 30 AWG/1:1 Sig. Map	-4 = 4 Pairs -6 = 6 Pairs	-4, -6, -8, -10, -12, -14, -16	-1 = Standard	-L = Left Guidance -R = Right Guidance	-A thru -H = Position of Flat on Key (See Table) -N = No Key	"XX" = Length in Inches 06" (152.4 mm) minimum	-1 = Standard	-L = Left Guidance -R = Right Guidance	-A thru -H = Position of Flat on Key (See Table) -N = No Key

EBCM
Mates with:
EBCF, EBTf,
EBCB

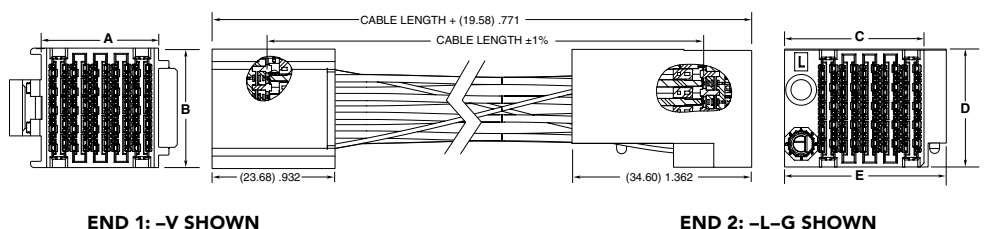




NO. OF COLUMNS	A
-4	(17.45) .687
-6	(21.45) .845
-8	(25.45) 1.002
-10	(29.45) 1.159
-12	(33.45) 1.317
-14	(37.45) 1.474
-16	(41.45) 1.632

PAIRS PER COLUMN	B
-4	(24.80) .976
-6	(32.00) 1.260

View complete specifications at: samtec.com?EBCM

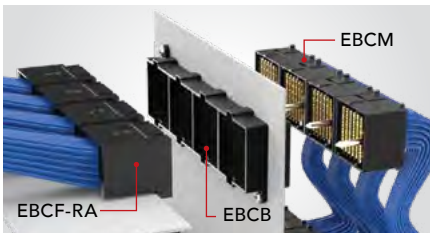
EBCF	GAUGE/ SIG. MAP	PAIRS / COLUMN	COLUMNS	END 1	END 1 PIN	CABLE LENGTH	END 2 OPTION	END 2 PIN	END 2 GUIDE	END 2 KEY
Cable Socket	-1 = 34 AWG/Tx to Rx Sig. Map -2 = 30 AWG/Tx to Rx Sig. Map -3 = 34 AWG/1:1 Sig. Map -4 = 30 AWG/1:1 Sig. Map	-4 = 4 Pairs -6 = 6 Pairs	-4, -6, -8, -10, -12, -14, -16	-V = Vertical Latch	= Standard	"XX" = Length in Inches 06" (152.4 mm) minimum	-V = Vertical Latch -R = Right- Angle	= Standard	(-R End Only) -L = Left Guidance -R = Right Guidance	(Leave Blank for no Key; -R End Only) -A thru -H = Position of Flat on Key (See Table)

EBCF
Mates with:
EBCM, EBTm,
EBCL

View complete specifications at: samtec.com?EBCF

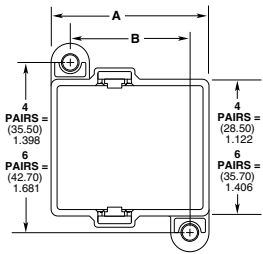
Notes:
Some lengths, styles and options are non-standard, non-returnable.
ExaMAX[®] is a registered trademark of AFCL.

PANEL RETENTION BRACKETS & LATCHING SHROUDS

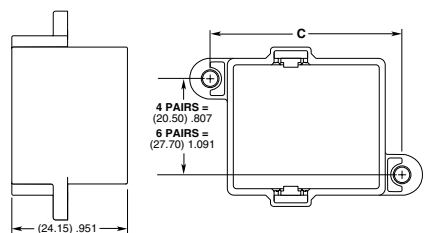
EBCB	NO. OF PAIRS	NO. OF COLUMNS	NO. OF BANKS	MOUNTING OPTION
Panel Retention Bracket	-4 = 4 Pairs -6 = 6 Pairs	-04, -06, -08, -10, -12, -14, -16 (-04, -06 only available with -1-S)	-1, -2, -4 (-2 & -4 banks available with -08, -10, -12, -14, -16 columns only)	(Leave Blank for Standard) -S = Side Lugs (-1 Bank Only)



EBCM Cable Assembly Locks into EBCB Retention Bracket

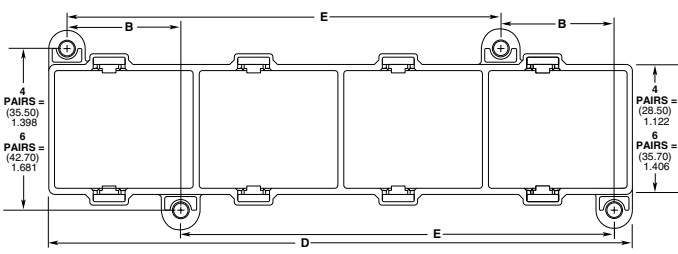


EBCB-X-XX-1 SHOWN



EBCB-X-XX-1-S SHOWN

NO. OF COLUMNS	C
-04	(27.95) 1.100
-06	(31.95) 1.258
-08	(35.95) 1.415
-10	(39.95) 1.573
-12	(43.95) 1.730
-14	(47.95) 1.888
-16	(51.95) 2.045



EBCB-X-XX-4 SHOWN

NO. OF COLUMNS	A		B		D 4 Bank	E 4 Bank
	1 Bank	2 Bank	1 or 4 Bank	2 Bank		
-04	(20.95) .825	N/A	N/A	N/A	N/A	N/A
-06	(24.95) .982	N/A	N/A	N/A	N/A	N/A
-08	(28.95) 1.140	(56.65) 2.230	(20.95) .825	(48.65) 1.915	(112.05) 4.411	(83.10) 3.272
-10	(32.95) 1.297	(64.65) 2.545	(24.95) .982	(56.65) 2.230	(128.05) 5.041	(95.10) 3.744
-12	(36.95) 1.455	(72.65) 2.860	(28.95) 1.140	(64.65) 2.545	(144.05) 5.671	(107.10) 4.217
-14	(40.95) 1.612	(80.65) 3.175	(32.95) 1.297	(72.65) 2.860	(160.05) 6.301	(119.10) 4.689
-16	(44.95) 1.770	(88.65) 3.490	(36.95) 1.455	(80.65) 3.175	(176.05) 6.931	(131.10) .5161

View complete specifications at: samtec.com?EBCB

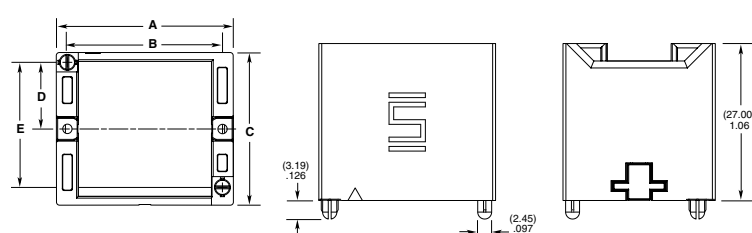
EBCL	NO. OF PAIRS	NO. OF COLUMNS
Vertical Latching Shroud	-4, -6	-06, -08, -10, -12 (-12 column only available in -6 pairs)



EBCL / EBTM-VT

NO. OF COLUMNS	A	B
-06	(22.40) .882	(18.66) .734
-08	(26.40) 1.039	(22.66) .892
-10	(30.40) 1.197	(26.66) 1.050
-12	(34.40) 1.354	(30.66) 1.207

NO. OF PAIRS	C	D	E
-4	(26.20) 1.031	(11.45) .451	(21.50) .846
-6	(33.40) 1.315	(15.05) .593	(28.70) 1.130



Notes:
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?EBCL

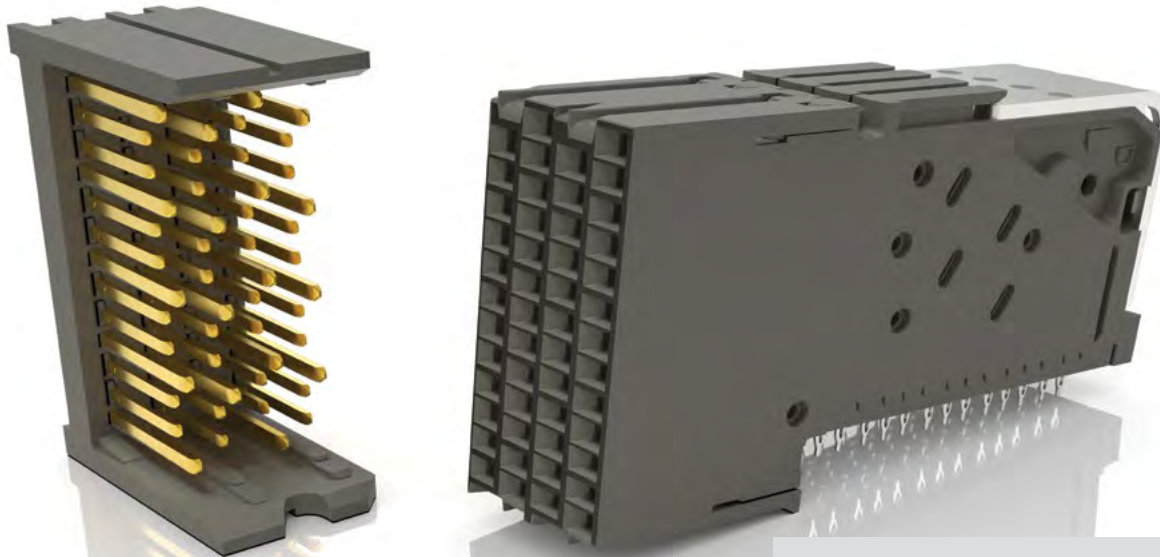
ExaMAX[®] is a registered trademark of AFCL.



HIGH-DENSITY BACKPLANE HEADERS & SOCKETS

(1.80 mm) .071" PITCH

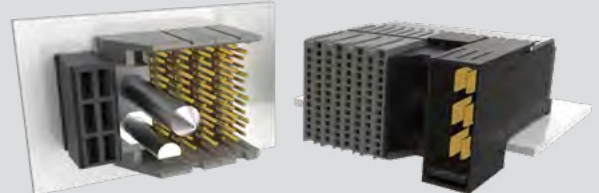
16
G b p s



FEATURES & BENEFITS

- Small form factor and modular design provides significant space-savings and flexibility
- High-performance system
- Up to 84 differential pairs per linear inch
- 3, 4 and 6-pair designs on 4, 6 and 8 columns
- Integrated power, guidance, keying and end walls available
- 85 Ω and 100 Ω options
- Combine any configuration of modules to create one integrated receptacle (BSP Series); corresponding terminal modules are individually mounted to the backplane
- Press-fit extraction and insertion tool options; please visit samtec.com/tooling for details

MODULAR DESIGN



Signal, Power & Keying / Guidance options can be customized in any configuration

HIGH-DENSITY, SMALL FORM FACTOR



XCede® HD

Up to 84 pairs per linear inch



Traditional Backplane

Up to 76 pairs per linear inch

(Both shown with six 4-pair, 8 column receptacles)

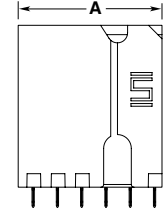
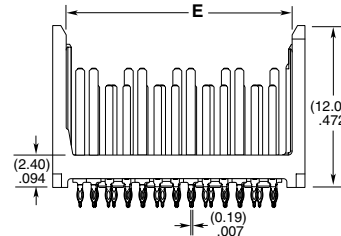
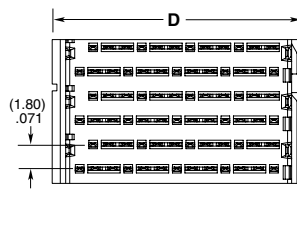
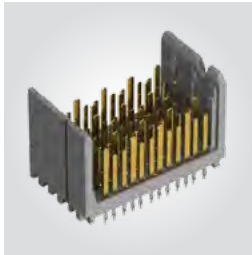
KEY SPECIFICATIONS

PITCH	INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	OPERATING TEMP RANGE
1.80 mm	LCP	Phosphor Bronze (HDTM Series) Copper Alloy (HDTF & HPTS Series)	Au or Sn over 50 μ " (1.27 μ m) Ni	-40 °C to + 105 °C (HDTX Series)

(1.80 mm) .071" PITCH • HIGH-DENSITY BACKPLANE HEADER

HDTM	PAIRS	NO. OF COLUMNS	TAIL SIZE	S	VT	SIDE WALLS	GUIDANCE	STAGE COMBO	KEYING
	-3, -4, -6 =Pairs Per Column	-04, -06, -08	-1 =(.4495 mm) .0177" Drill -2 =(.5511 mm) .0217" Drill			-0 = Open (No Walls) -1 = Left -2 = Right -4 = Left Polarizing (-4 Pairs N/A) -5 = Right Polarizing (-4 Pairs N/A)	-4 or -5 Polarizing Only; Leave Blank for No Guidance -L = Left Side Guide Pin -R = Right Side Guide Pin	-1 = 3 mm Wipe Signal / 4 mm Wipe Ground -2 = 2 mm Wipe Signal / 4 mm Wipe Ground -3 = 3 mm Wipe Signal / 3 mm Wipe Ground -4 = 2 mm Wipe Signal / 3 mm Wipe Ground -5 = 2 mm Wipe Signal / 2 mm Wipe Ground	-4 or -5 Polarizing Only; Leave Blank for No Keying -A thru -H = Position of Flat on Key (See Table)

HDTM
Board Mates:
HDTF, BSP
(See HDTF
for more
information.)

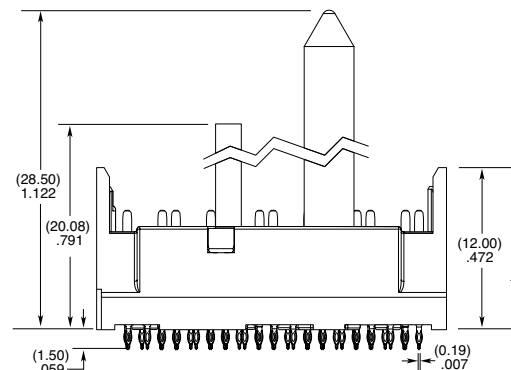
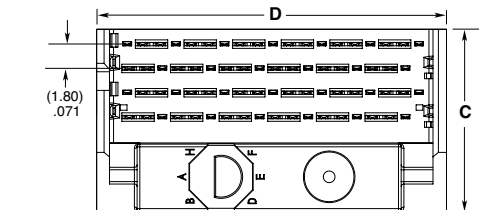


HDTM-4-06-1-S-VT-0-1 SHOWN

NO. OF COLUMNS	A			C	
	No Walls	Left Wall	Right Wall	Left Polarize	Right Polarize
-04	(7.06) .278	(8.20) .322	(8.06) .317	N/A	N/A
-06	(10.66) .420	(11.80) .465	(11.66) .459	(17.14) .675	(16.65) .656
-08	(14.26) .561	(15.40) .606	(15.26) .600	(20.74) .817	(20.25) .797

PAIRS PER COLUMN	D	E
	Standard Wall	
-03	(15.10) .594	(13.15) .518
-04	(18.70) .736	(16.75) .659
-06	(25.90) 1.020	(23.95) .943

KEYING								
-L / -R	-A	-B	-C	-D	-E	-F	-G	-H
								



HDTM-6-04-X-X-VT-4-L-X-A SHOWN

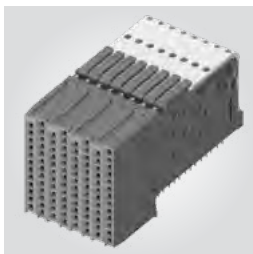
View complete specifications at: samtec.com?HDTM

Notes:
Some lengths, styles and options are non-standard, non-returnable.
XCede® is a registered trademark of Amphenol.

(1.80 mm) .071" PITCH • HIGH-DENSITY BACKPLANE RECEPTACLE

HDTF	PAIRS PER COLUMN	NO. OF COLUMNS	PLATING	RA	WAFERS	IMPEDANCE
	-3, -4, -6	-04, -06, -08	-S = 30 μ " (0.76 μ m) Gold on Contact Area, Matte Tin on Tail		-LC = Standard -HS = High-Speed	-100 = 100 Ω -085 = 85 Ω

HDTF
Board Mates:
HDTM

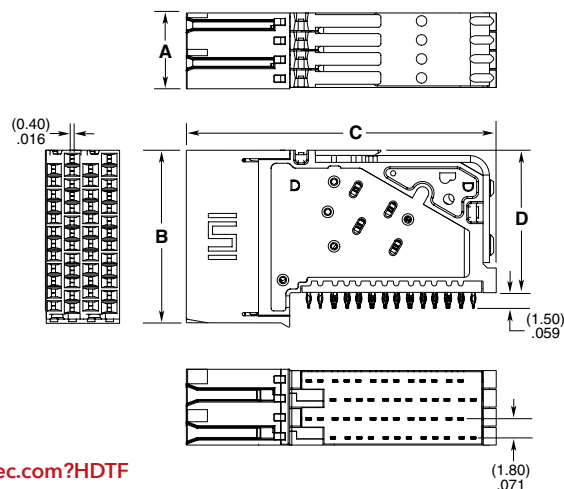


ALSO AVAILABLE

Power and keying/guidance modules also are available but require a single customizable BSP product. Contact HSBP@samtec.com.

NO. OF COLUMNS	A
-04	(7.2) .28
-06	(10.8) .42
-08	(14.4) .57

PAIRS PER COLUMN	B	C	D
-3	(12.8) .50	(26.0) 1.02	(9.8) .386
-4	(16.4) .64	(29.4) 1.16	(13.5) .53
-6	(23.6) .93	(36.6) 1.44	(20.7) .81



View complete specifications at: samtec.com?HDTF

(3.20 mm) .126" PITCH • HIGH-DENSITY BACKPLANE POWER MODULE

HPTS	BODY HEIGHT	PLATING	D	ORIENTATION
------	-------------	---------	---	-------------

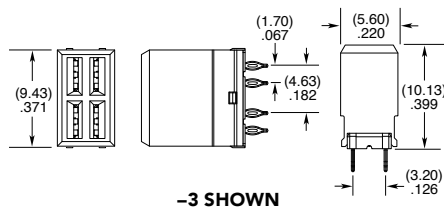
Based on Pair Count of Signal Modules (HDTF Series).

- 3 = For use with 3 pair HDTF Series
- 4 = For use with 4 pair HDTF Series
- 6 = For use with 6 pair HDTF Series

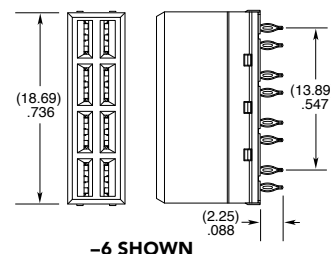
-S
= 30 μ " (0.76 μ m) Gold on Contact Area, Matte Tin on Tail

-VT
= Vertical

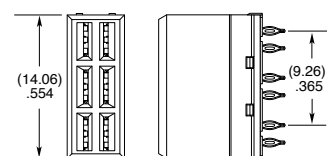
HPTS
Mates with:
BSP
(See HDTF for more information.)



-3 SHOWN



-6 SHOWN



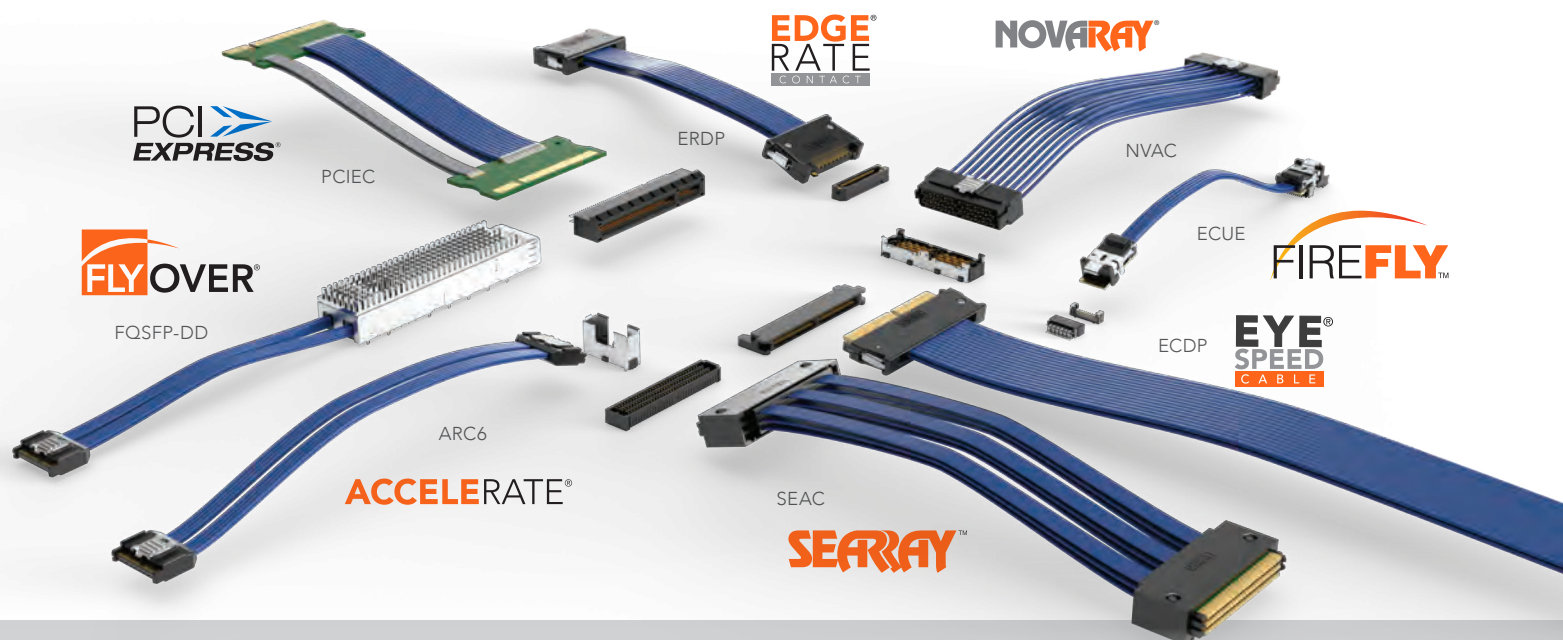
-4 SHOWN

View complete specifications at: samtec.com?HPTS

Notes:
Some lengths, styles and options are non-standard, non-returnable.
XCede[®] is a registered trademark of Amphenol.

HIGH-SPEED CABLE & I/O SYSTEMS

UP TO 112 Gbps PAM4 • FLYOVER® TECHNOLOGY • ULTRA LOW SKEW TWINAX • MICRO COAX CABLE



98-110

FLYOVER® SYSTEMS

Flyover® QSFP Cable Systems (FQSFP, FQSFP-DD)	98-101
NovaRay® Extreme Density & Performance Systems (NVAC, NVAM-C)	102-103
AcceleRate® Slim Cable Systems (ARC6, ARF6)	104-105
Si-Fly™ Low-Profile, High-Density Cable System (CPC, CPI)	106-107
Copper FireFly™ Cable Systems (ECUE, PCUE, UEC5, UCC8)	108-110

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COAX & TWINAX

Edge Card Cables (FEDP, FCDP, ECDP)	111-112
Twinax Cable Systems (HQDP, EQDP, ERDP)	113-114
Razor Beam™ Hermaphroditic Coax Cable System (HLCD)	115
Coax Cables (HQCD, EQCD, ERCD)	116-117
SEARAY™ & SEARAY™ 0.80 mm Cables (SEAC, ESCA)	118-119
PCI Express® System (PCIEC)	120
Cost-Effective Cable System (FCF8, FCS8)	121

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HIGH-SPEED I/O

Eye Speed® Cable Systems (HDLSP, HDI6, EPLSP, ERI8-RA)	122-123
SFP+ Passive Jumpers (SFPE, MECT)	124
USB 2.0 (USB, USBR)	125-126



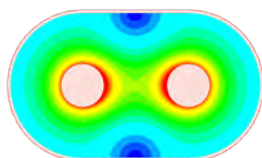
FLYOVER® TECHNOLOGY

Samtec Flyover® technology breaks the constraints of traditional signaling substrate and hardware offerings by routing signals via ultra low skew twinax cable versus through lossy PCB. This results in a cost-effective, high-performance and heat efficient answer to the challenges of 56 Gbps bandwidths and beyond.

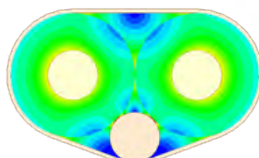


ULTRA LOW SKEW TWINAX CABLE TECHNOLOGY

- Ideal for 28 – 112+ Gbps applications
- Tight coupling between signal conductors
- Ultra low skew twinax < 3.5 ps/meter (intrapair)
- Improved signal integrity and eye pattern opening
- Increased bandwidth and reach



✓ **Good** design coupling with Samtec's co-extruded ultra low skew twinax



✗ **Bad** design coupling with individually extruded conductors & drain wire

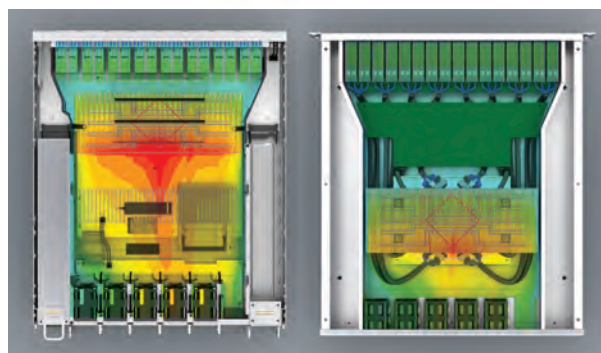
PERFORMANCE & COST ADVANTAGES

- 28 - 56 Gbps NRZ and beyond
- Simplified board layout
- Less expensive PCB materials, fewer PCB layers
- Eliminates expensive re-timers

SUPPORT

Fully integrated Technology Centers for full system optimization from Silicon-to-Silicon, including Samtec's High-Speed Cable Group.

THERMAL IMPROVEMENT



Standard Network Switch vs. Samtec Flyover® Technology

CABLE SPECIFICATIONS

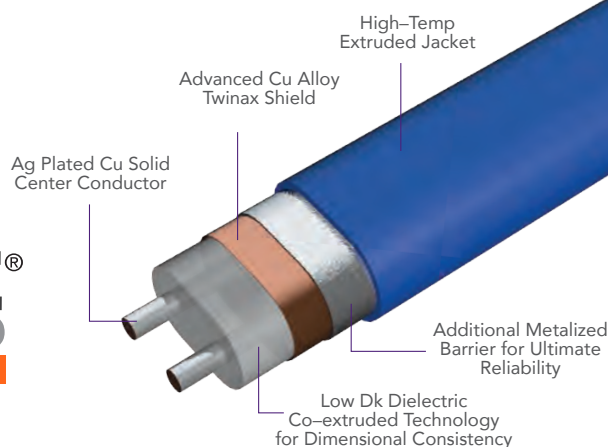


ULTRA LOW SKEW TWINAX CABLE

Samtec's proprietary co-extruded Eye Speed® twinax cable technology eliminates the performance limitations and inconsistencies of individually extruded dielectric twinax cabling; improving signal integrity, bandwidth and reach for high-performance system architectures.

- Micro cellular dielectric extrusion
- Critical dimensions measured at every dielectric spool
- Inline laser and CAPAC devices for capacitance monitoring and diameter control
- In-process stats summary sheet for Cpk acceptance

**EYE
SPEED
CABLE**



NOMINAL PERFORMANCE SPECIFICATIONS			28 AWG	30 AWG	32 AWG	34 AWG	36 AWG
14 GHz (28G NRZ/56G PAM4)	0.25 m	IL (dB)	-1.0	-1.2	-1.5	-1.8	-2.2
	1.00 m		-4.1	-4.7	-5.9	-7.5	-8.9
28 GHz (56G NRZ/112G PAM4)	0.25 m		-1.5	-1.8	-2.2	-2.7	-3.2
	1.00 m		-6.1	-7.1	-8.7	-10.9	-13.0
Density / Flexibility			Good	Good	Better	Best	Best

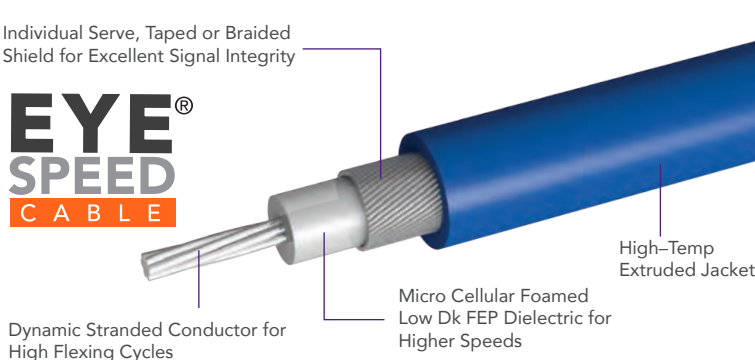
Eye Speed® Ultra Low Skew Twinax Cable is available in engineered impedance configurations of 85 Ω , 92 Ω and 100 Ω .

MICRO COAX CABLE

- Foaming introduces air voids for signal to travel faster
- Solid extrusion of foamed dielectric provides a constant and more durable construction
- Lighter weight and smaller size with higher bandwidth capabilities at longer lengths
- 26 - 38 AWG cable available
- Choice of signal conductor, shield and FEP dielectric to meet performance and cost specifications

Individual Serve, Taped or Braided Shield for Excellent Signal Integrity

**EYE
SPEED
CABLE**



NOMINAL PERFORMANCE SPECIFICATIONS			30 AWG	32 AWG	34 AWG	36 AWG	38 AWG
5 GHz (10 Gbps)	0.25 m	IL (dB)	-0.9	-1.0	-1.3	-2.2	-2.6
	1.00 m		-3.4	-3.3	-6.0	-6.9	-8.5
10 GHz (20 Gbps)	0.25 m		-1.4	-1.6	-2.2	-3.5	-4.0
	1.00 m		-5.1	-5.5	-9.0	-10.7	-12.7
Density / Flexibility			Good	Better	Better	Best	Best

Eye Speed® Micro Coax Cable is available in engineered impedance configurations of 50 Ω and 75 Ω .

FLYOVER® QSFP CABLE ASSEMBLIES



FEATURES & BENEFITS

QSFP28 and QSFP-DD systems utilize Samtec Flyover® technology to route data above lossy PCB, simplifying board layout and extending signal reach. The modular design enables optimized systems that improve heat management, increase signal integrity performance, build in scalability for future upgrades and reduces costs by creating a multifunction board.

NRZ	PAM 4
56 G b p s	112 G b p s

FLYOVER® QSFP28 SYSTEM

- 4 Channels (x4 bidirectional, 8 differential pairs)
- ~100 Gbps 28G NRZ aggregate
(~200 Gbps 56G PAM4; 400 Gbps 112G PAM4)
- Compatible with all MSA QSFP pluggables
- Heat dissipation: ~3.5 W/cable
- Eye Speed® 30 or 34 AWG twinax cable
- Multiple end 2 options for design flexibility
- Evaluation Kits available (REF-205303-X.XX-XX and REF-200471-X.XX-XX), visit [samtec.com/kits](https://www.samtec.com/kits)



Localized press-fit control and power contacts eliminate the need for a secondary cable and connector



High-speed contacts directly soldered to Eye Speed® ultra low skew twinax



Increases panel density and optimizes airflow

FLYOVER® QSFP DOUBLE DENSITY

- 8 Channels (x8 bidirectional, 16 differential pairs)
- ~200 Gbps 28G NRZ aggregate
(~400 Gbps 56G PAM4; 800 Gbps 112G PAM4)
- Belly-to-belly mating for maximum density
- Backward compatible with QSFP modules
- Heat dissipation: ~7+ W/cable
- Variety of end 2 options
- Evaluation Kits available (REF-205605-X.XX-XX and REF-203423-X.XX-XX), visit [samtec.com/kits](https://www.samtec.com/kits)

Roadmap: Flyover® QSFP-DD 800G

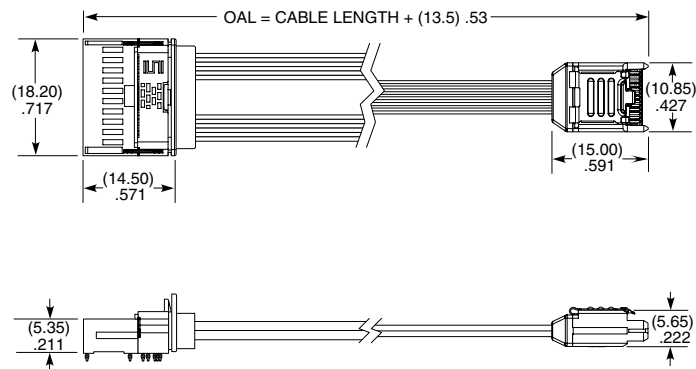
Samtec is developing Flyover® solutions for 800G including:

- Single to multiple ganged ports
- Belly-to-belly and mezzanine stack configurations
- Contact HDR@samtec.com for more information.

FLYOVER® QSFP28 CABLE ASSEMBLY

FQSFP	LEAD STYLE	CABLE LENGTH	PLATING	CONTACT TYPE	END OPTION
	-01 = 10 Low-Speed, 8 Pairs High-Speed	-"XX.X" = Length in inches 04.0" (101.6 mm) minimum	-L = 10 μ " (0.25 μ m) Gold over 50 μ " (1.27 μ m) Ni on contact area, Matte Tin on tail	-PF = Press-fit	-3 = ECUE -4 = ARC6-8

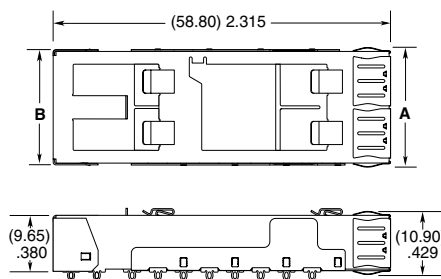
FQSFP



FQSFP-01-XX.X-L-PF-4 SHOWN

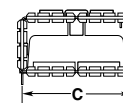
QSFP	CAGE OPTION	NO. OF PORTS	EMI PANEL OPTION	OPTION	FLYOVER
	-1 = Single Stack	-1 = One Port -2 = Two Ports -4 = Four Ports	-S = Spring Fingers	(Leave blank for no Light Pipe) -LP = Light Pipe (1 & 4 ports only) -N = No heat sink closed top (Not available with -LP)	(Leave blank for no flyover) -F = Flyover

QSFP



QSFP-1-1-S-F SHOWN

NO. OF PORTS	A	B	C
-1	(20.62) .812	(19.85) .781	(19.00) .748
-2	(39.62) 1.560	(38.85) 1.530	(38.00) 1.496
-4	(77.62) 3.056	(76.85) 3.026	(76.00) 2.992



HEAT SINKS		LIGHT PIPES	
PART NUMBER	HEAT SINK HEIGHT	PART NUMBER	NO. OF PORTS
HS-QSFP-P1-01	(4.20 mm) .165"	LP-FQSFP-1	1 pipe
HS-QSFP-P1-02	(6.50 mm) .256"	LP-FQSFP-2	2 pipes
HS-QSFP-P1-03	(13.50 mm) .531"	LP-FQSFP-4	4 pipes
HS-QSFP-P1-04	(1.50 mm) .059"		

View complete specifications at samtec.com/LP-FQSFP

For Light Pipe, add -LP to the end of part number.
View complete specifications at samtec.com/HS-QSFP

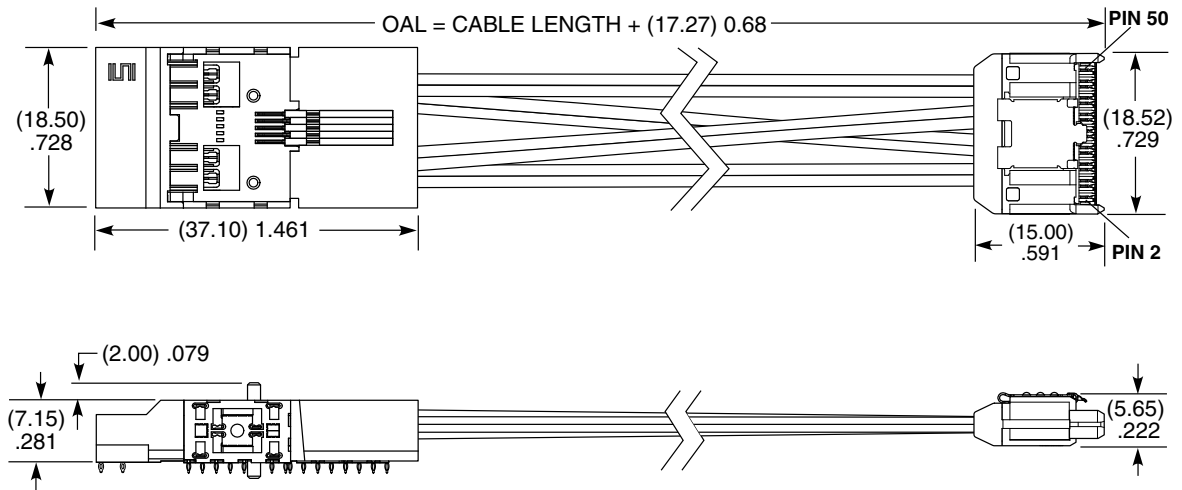
View complete specifications at: samtec.com/FQSFP & samtec.com/QSFP

Notes:
Some sizes, styles and options are non-standard, non-returnable.

FLYOVER® QSFP DOUBLE DENSITY

FQSFP	DD	LEAD STYLE	FOOTPRINT	CABLE LENGTH	END 2 OPTION
		-01 = 20 Low-Speed, 16 Pairs High-Speed	-A = Primary -B = Secondary (Belly-to-Belly only)	-"XX.X" = Length in inches 04.0" (101.6 mm) minimum	-3 = ARC6-16 Additional end options such as NovaRay® available; contact HDR@samtec.com

FQSFP-DD



FQSFP-DD-01-X-XX.X-3 SHOWN

TOOLING

Press-fit: CAT-PT-FQSFP-DD-01

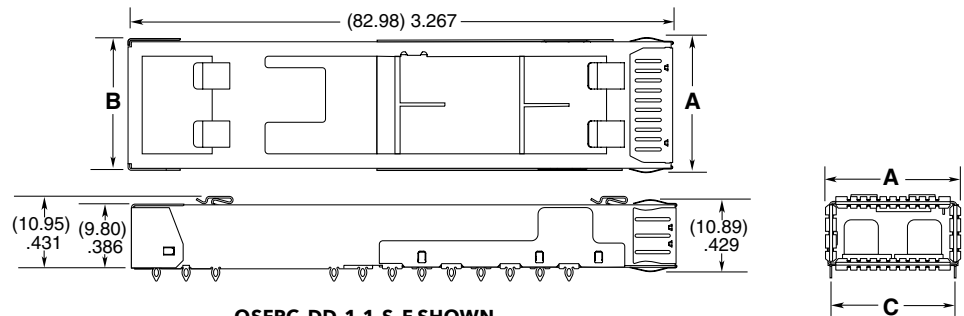
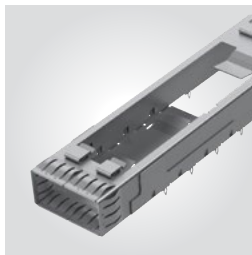
Note:
Some sizes, styles and
options are non-standard,
non-returnable.

View complete specifications at: samtec.com?FQSFP-DD

CAGE & HEAT SINK FOR QSFP-DD

QSFP	DD	STACK	NO. OF PORTS	EMI PANEL OPTION	FLYOVER
		-1 =Single Stack	-1 = One Port -3 = Three Ports	-S = Spring Fingers	-F = Flyover

QSFP-DD



QSFP-DD-1-1-S-F SHOWN

TOOLING

Press-fit: CAT-PT-QSFP-DD-02

NO OF PORTS	A	B	C
-1	(20.62) .812	(19.87) .782	(19.00) .748
-3	(58.62) 2.308	(57.87) 2.278	(57.00) 2.244

View complete specifications at: samtec.com?QSFP-DD

HS-QSFP	DD	HEAT SINK STYLE	HEAT SINK HEIGHT
---------	----	-----------------	------------------

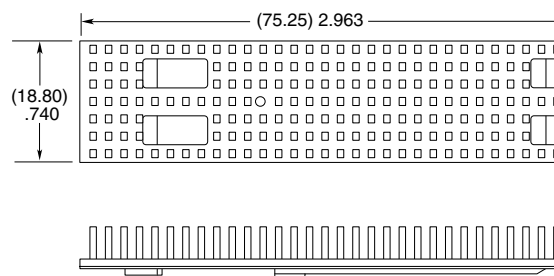
-P1
= Pin (Aluminum)

-1
= (4.20 mm) .165" height

-2
= (6.50 mm) .256" height

-3
= (13.50 mm) .531" height

HS-QSFP-DD



HS-QSFP-DD-P1-2 SHOWN

HEAT SINK HEIGHT	A
-1	(4.20) .165
-2	(6.50) .256
-3	(13.50) .531

Note:
Some sizes, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?HS-QSFP-DD



EXTREME HIGH-SPEED, HIGH-DENSITY CABLE



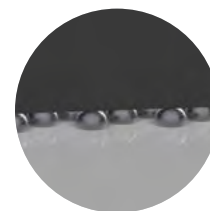
NRZ	PAM4
56 Gbps	112 Gbps

FEATURES & BENEFITS

- 112 Gbps PAM4 per channel
- 4.0 Tbps aggregate data rate - 9 IEEE 400G channels
- Innovative, fully shielded differential pair design enables extremely low crosstalk (to 40 GHz) and tight impedance control
- 112 differential pairs per square inch
- 34 AWG ultra-low skew twinax cable
- 92 Ω solution addresses both 85 Ω and 100 Ω applications
- Industry leading aggregate data rate density - 2x the data rate in 60% of the space
- 8 to 32 differential pairs; up to 72+ pairs in development
- Panel I/O solution in development



Two reliable points of contact guaranteed



BGA attach for density and optimized trace breakout region

Aggregate Data Rate (NRZ)						
448 Gbps	672 Gbps	896 Gbps		1344 Gbps	1792 Gbps	4032 Gbps*
1 Bank			2 Bank			3 Bank*
2 Row	3 Row	4 Row	2 Row	3 Row	4 Row	6 Row*
8 Pairs	12 Pairs	16 Pairs		24 Pairs	32 Pairs	72 Pairs*
						*In development

EXTREME DENSITY & PERFORMANCE SYSTEM

NVAC	STYLE	CABLE STYLE	NO. OF ROWS	NO. OF BANKS	CABLE LENGTH	01	PIN OUT	OPTION
	-DP = 4 pairs per wafer	-1 = 34 AWG, 100 Ω Cable -3 = 34 AWG, 92 Ω Cable	-02 = 2 Rows -03 = 3 Rows -04 = 4 Rows	-1 = 1 Bank -2 = 2 Banks	- "XX.X" = Length in inches (152.4 mm) 06.0" minimum		-1 = Pin A01 to Pin AN	-L = Latch

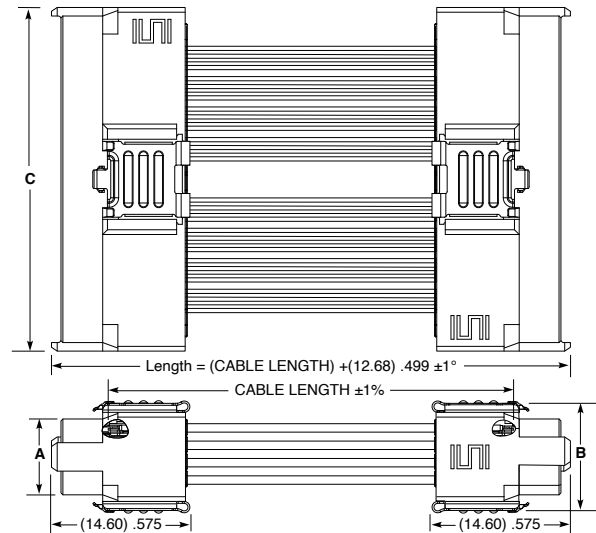
NVAC
Board Mates:
NVAM-C



PRELIMINARY

NO. OF BANKS	C
-1	(20.25) .797
-2	(36.25) 1.427

ROWS	A	B
-02	(4.40) .173	(7.30) .287
-03	(6.20) .244	(9.10) .358
-04	(8.00) .315	(10.90) .429



Notes:
Cable lengths longer than
40.00" (1 meter) are not
supported with S.I. test data.

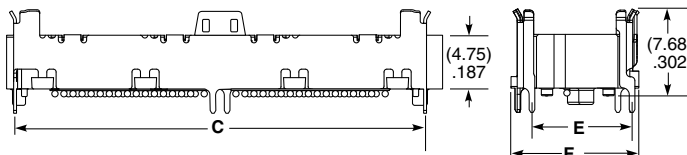
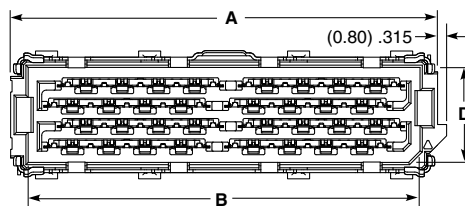
View complete specifications at: samtec.com?NVAC

NVAM	STYLE	NO. OF ROWS	NO. OF BANKS	02.0	PLATING OPTIONS	SOLDER TYPE	C
	-DP = 4 pairs per wafer	-02 = 2 Rows -03 = 3 Rows -04 = 4 Rows	-1 = 1 Bank -2 = 2 Banks		-S = 30 μ" (0.76 μm) Gold on contact area, Matte Tin on solder tail	-2 = Lead-Free Solder Charge	

NVAM-C
Cable Mates:
NVAC



PRELIMINARY



NO. OF BANKS	A	B	C
-1	(21.75) .856	(18.65) .734	(20.25) .797
-2	(37.75) 1.486	(34.65) 1.364	(36.25) 1.427

NO. OF ROWS	D	E	F
-02	(4.80) .189	(5.25) .207	(7.70) .303
-03	(6.60) .260	(7.05) .278	(9.50) .374
-04	(8.40) .331	(8.85) .348	(11.30) .445

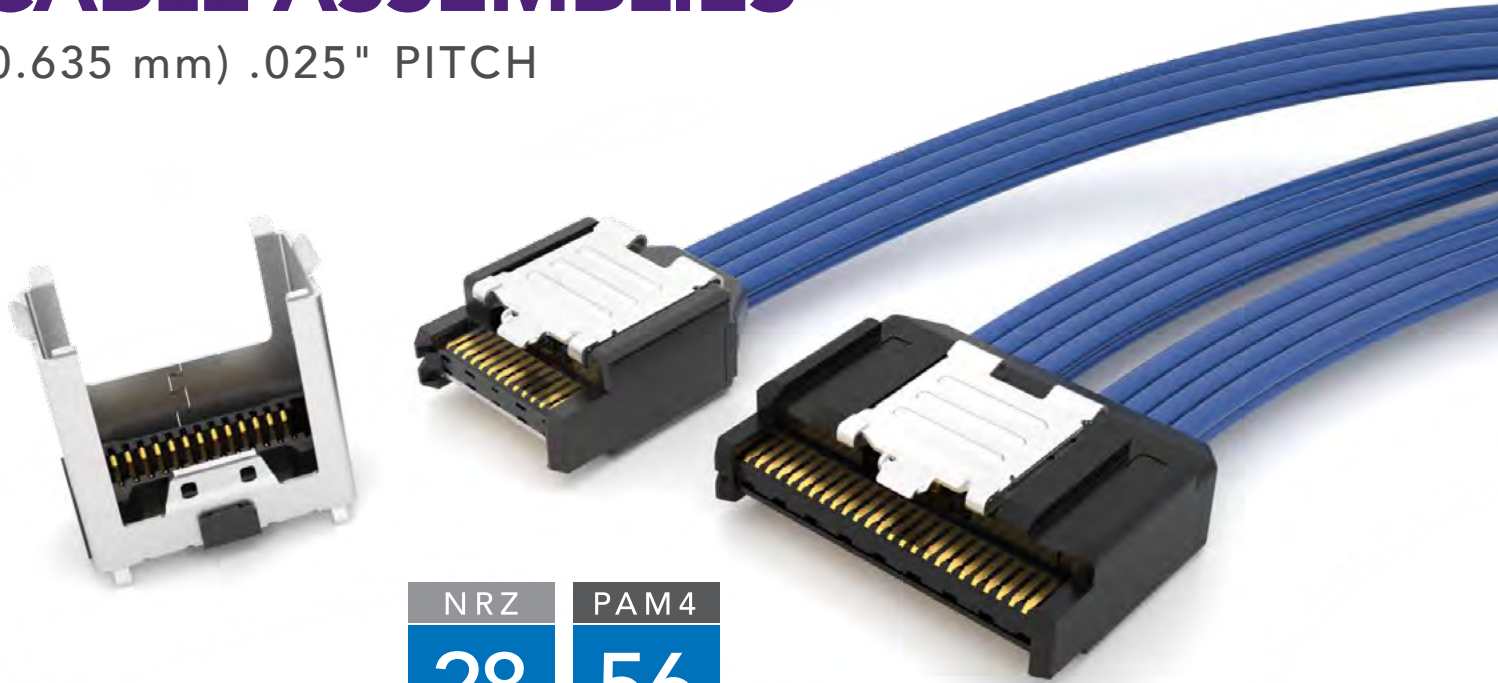
Note:
Some sizes, styles and
options are non-standard,
non-returnable.

View complete specifications at: samtec.com?NVAM-C

ACCELERATE[®]

SLIM, DIRECT ATTACH CABLE ASSEMBLIES

(0.635 mm) .025" PITCH



NRZ

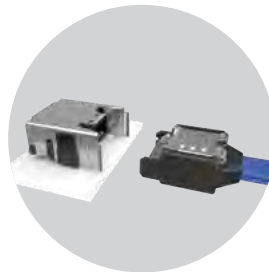
28
G b p s

PAM4

56
G b p s

FEATURES & BENEFITS

- Slimmest cable assembly in the industry – 7.6 mm width
- High-density 2-row design
- 8 and 16 differential pair configurations (24 pair in development)
- 34 AWG, 100 Ω Eye Speed[®] ultra low skew twinax cable
- Mating board level socket (ARF6 Series) features standard rugged weld tabs for increased stability on the PCB
- Rugged metal latching and shielding
- Supports 56 Gbps PAM4 (28 Gbps NRZ) applications
- Utilizes Samtec's Flyover[®] Technology to simplify board layout and extend signal reach



Right-angle available.
Visit [samtec.com?ARF6-RA](https://www.samtec.com?ARF6-RA)
for specifications.



Two rows of high-density
contacts directly
soldered to the cable

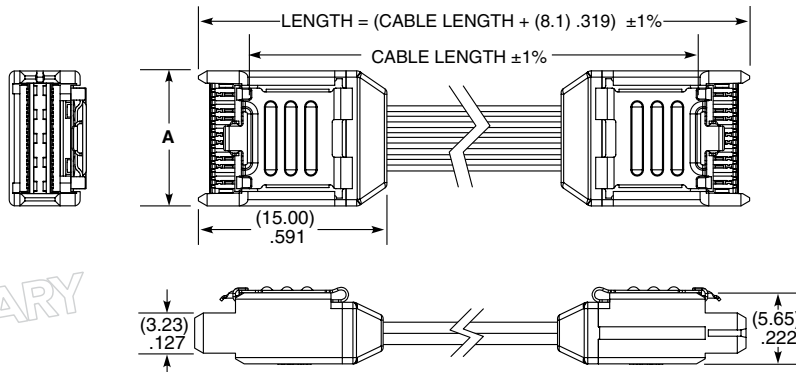
KEY SPECIFICATIONS

PITCH	CABLE	SIGNAL ROUTING	INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	OPERATING TEMP RANGE
(0.635 mm) .025"	34 AWG Eye Speed [®] ultra low skew twinax	100 Ω Differential	Black LCP	Copper Alloy	Au or Sn over 50 μ " (1.27 μ m) Ni	-40 °C to +125 °C

(0.635 mm) .025" • SLIM CABLE & SOCKET

ARC6	NO OF PAIRS	CABLE LENGTH	END 1	END 2	WIRING OPTION	CABLE TYPE
	-08 -16 -24	- "XX.X" = Length in Inches 03.0" (76.2 mm) minimum	-LU = Latch Up	-LU = Latch Up -LD = Latch Down	-2 = Pin 1 to Pin 2 (End 2 -LD option only) -3 = Pin 1 to Pin N-1 (End 2 -LU option only)	-1 = 34 AWG 100 Ω Eye Speed®

ARC6 Board Mates: ARF6



ARC6-08-XX.X-LU-LU-3-1 SHOWN

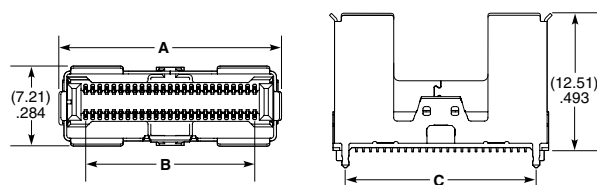
Notes:
Cable lengths longer than 40.00" (1 meter) are not supported with S.I. test data.

NO. OF PAIRS	A	N	N-1
-08	(10.90) .429	26	25
-16	(18.52) .729	50	49
-24	(26.14) 1.029	74	73

View complete specifications at: samtec.com?ARC6

ARF6	NO. OF PAIRS	PLATING	ROW	A	K	"X"R
	-08 -16 -24	-S = 30 μ" (0.76 μm) Gold on contact area, Matte Tin on tail	-D = Double Row	-A = Alignment Pin	-K = Polyimide film Pick & Place Pad	-TR = Tape & Reel -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks)

ARF6 Cable Mates: ARC6



ARF6-16-L-D-A SHOWN

NO. OF PAIRS	A	B	C
-08	(12.46) .491	(7.62) .300	(9.59) .378
-16	(20.08) .791	(15.24) .600	(17.21) .678
-24	(27.70) 1.091	(22.86) .900	(24.83) .978

Notes:
Tape & Reel packaging and K-Dot are standard.

Some sizes, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?ARF6



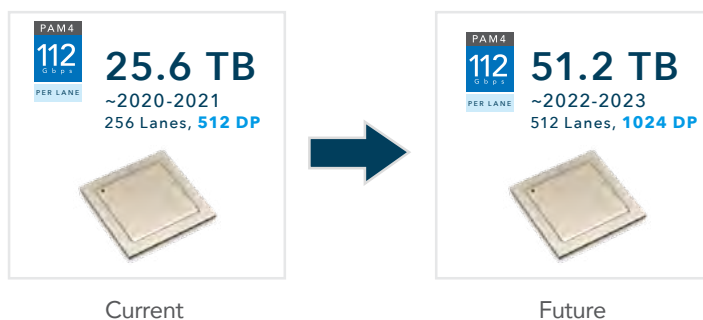
112 Gbps PAM4, LOW-PROFILE HIGH-DENSITY CABLE SYSTEM



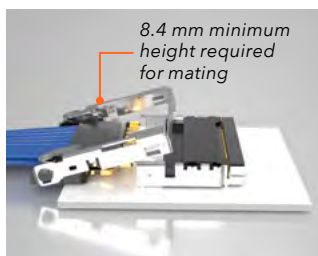
NRZ	PAM4
56 Gbps	112 Gbps

FEATURES & BENEFITS

- Ultra-high density configuration adjacent to the IC package
- Up to 16 pairs in an incredibly low 3.4 mm profile
- An extremely low profile allows Si-Fly™ connectors to reside under heat sinks or other cooling hardware
- Co-packaged interconnect option eludes the BGA and routes signals from the silicon package through a long-reach cable, supporting 5x the signal reach of traditional PCB solutions
- Extreme channel performance enabling 25.6 TB aggregate with a path to 51.2 TB
- 112 Gbps PAM4 per lane



Roadmap:
Co-packaged
interconnect
configuration
for advanced
112G+ data rate
requirements



8.4 mm minimum
height required
for mating



In development: Rugged latching configuration provides a secure connection directly adjacent to the IC package for increased signal integrity performance

KEY SPECIFICATIONS

CABLE	SIGNAL ROUTING	INSULATOR MATERIAL	CONTACT MATERIAL	PLATING
34 AWG ultra low skew twinax	92 Ω	Black LCP	Copper Alloy	Au or Sn over 50 μ " (1.27 μ m) Ni

0.6 mm CO-PACKAGED CABLE & INTERCONNECT

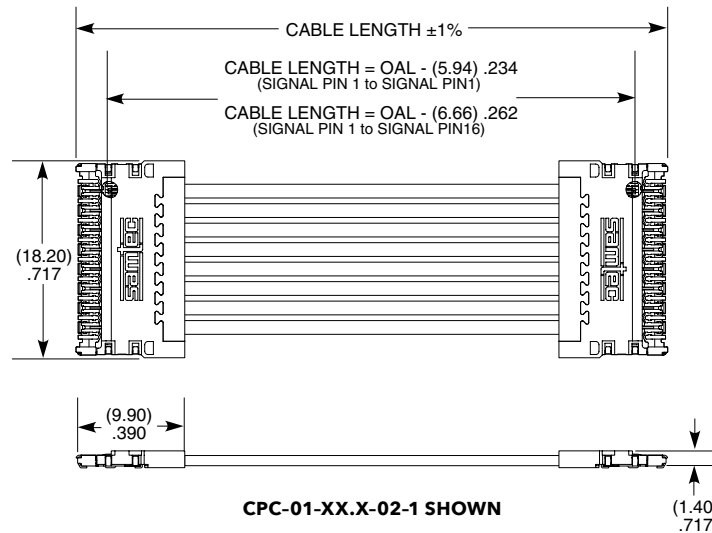
CPC	STYLE	CABLE STYLE	CABLE LENGTH	END 2	WIRING OPTION
	-01 = 8 Pairs	-1 = 34 AWG ultra low skew twinax cable	- "XX.X" = Wire Length in Inches 06.0" (152.4 mm) minimum	-02 = CPC to CPC	-1 = Pin 1 to Pin 16 -2 = Pin 1 to Pin 1

CPC

Board Mates:
CPI



PRELIMINARY



Notes:
Latching configuration not shown. Currently in development.

Cable lengths longer than 40.00" (1 meter) are not supported with S.I. test data.

View complete specifications at: samtec.com?CPC

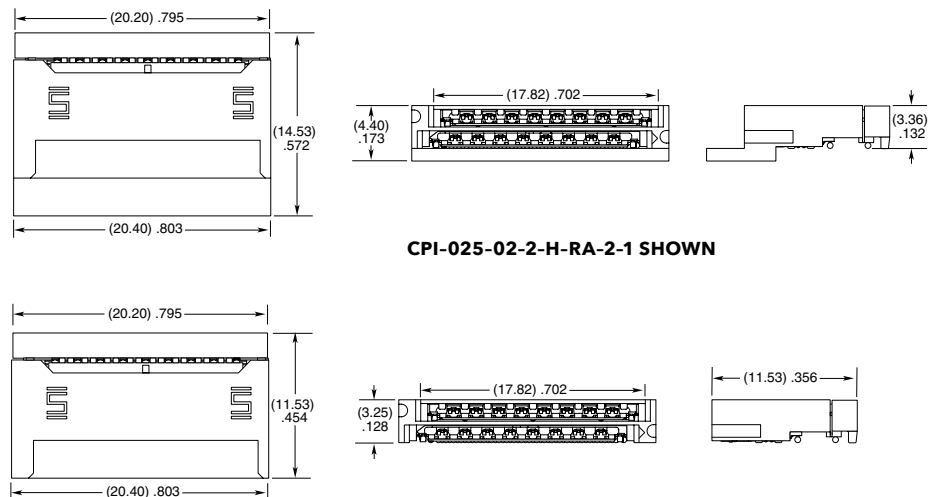
CPI	NO OF POSITIONS	LEAD STYLE	ROW	PLATING OPTION	RA	SOLDER TYPE	WELD TAB
	-025 (Per Row) (8 Differential Pairs)	-01 = Surface Mount -02 = Overhang Mount	-1 = 1 Row -2 = 2 Row	-H = 30 μ " (0.76 μ m) Gold on contact area, Tin on tail		-2 = Lead-Free Solder Ball	-1 = Surface Mount

CPI

Cable Mates:
CPC



PRELIMINARY



Note:
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?CPI

FIREFLY™ HIGH-DENSITY COPPER FLYOVER® SYSTEM



FEATURES & BENEFITS

- Pin compatible with optical FireFly™ using the same connector system
- Data connection is taken "off board" for easier routing
- Low-cost solution for seamless integration of new and existing designs
- Low-profile housing for space savings
- x4 bidirectional or x12 unidirectional
- Variety of end 2 termination options

14
G b p s

x4 Bidirectional ECUE
x12 Unidirectional ECUE

PAM 4

56
G b p s

x4 Bidirectional ECUE-2



Standard Copper (ECUE)

- 14 Gbps
- 100 Ω , 34 AWG or 36 AWG Eye Speed® twinax cable



Optimized Copper (ECUE-2)

- 28 Gbps card design
- 100 Ω , 34 AWG Eye Speed® ultra low skew twinax cable
- Optimized for use with connector UEC5-2



PCI Express®-Over-FireFly™ Copper (PCUE)

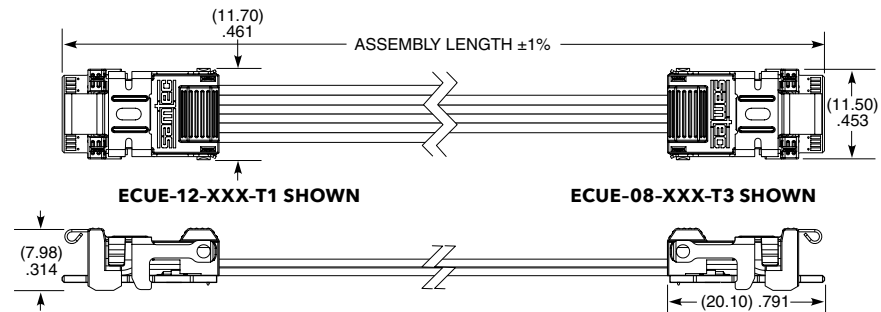
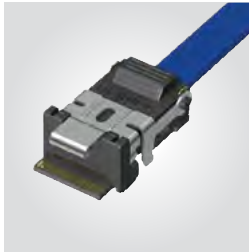
- PCIe® 4.0
- 100 Ω , 34 AWG Eye Speed® ultra low skew twinax cable
- Optimized for use with connector UEC5-2

LOW-PROFILE MICRO FLYOVER® CABLE

SERIES	NO OF PAIRS	ASSEMBLY LENGTH	CABLE TYPE	END 2 OPTION	WIRING OPTION	DATA RATE	OPTION
ECUE = Rugged FireFly™ Cable Assembly	-08 = Eight Pair (-T2 & -T3 cable only) -12 = Twelve Pair (-T1 cable only)	-“XXX” = Assembly Length in Centimeters (007 cm to 999 cm)	-T1 = 36 AWG twinax (-12 pairs only) -T2 = 34 AWG twinax (-08 pairs only) -T3 = 34 AWG ultra low skew twinax (-08 pairs only)	-FF = FireFly™ (Mates with UEC5/UCC8)	-01 = Pin A1 to Pin A19 -02 = Pin A1 to Pin B1 -B4 = Pin A1 to Pin B19 (-08 pair only)	-1 = 14 Gbps (-T1 or -T2 only) -2 = 28 Gbps (-T3 only)	Leave blank for standard FireFly™ -D1 = Decoupling Capacitors (only available with -02 & -B4 wire options)

ECUE

Board Mates:
UEC5, UCC8



Notes:

All FireFly™ designs, specifications and components are preliminary and subject to change without notice.

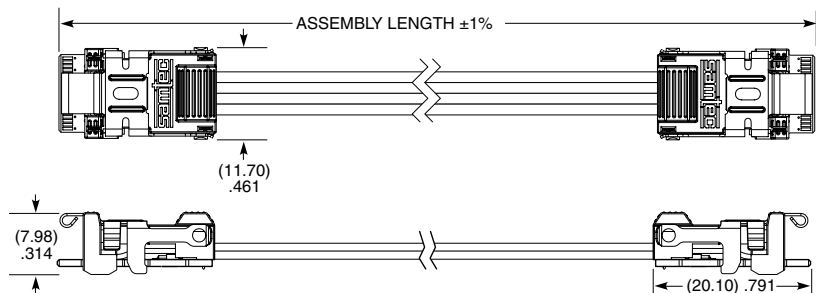
Cable lengths longer than 150 cm (59.06") are not supported with S.I. test data.

View complete specifications at: samtec.com?ECUE

SERIES	SPEED	NO. OF CHANNELS	CABLE LENGTH	END 2
PCUE = PCIe®-over-FireFly™ Copper Flyover®	-G4 = Gen 4 Speed	-04 = 8 pairs	-“XXX” = Overall Length in Centimeters (010 cm to 999 cm)	-FF = FireFly™ (Mates with UEC5/UCC8)

PCUE

Board Mates:
UEC5, UCC8



Notes:

Supports PCIe® sideband signals

Two additional low speed channels compatible with PCUO or custom usage

Decoupling capacitors in-line with signals on PCB.

PCI-SIG®, PCI Express® and the PCIe® design marks are registered trademarks and/or service marks of PCI-SIG.

Some sizes, styles and options are non-standard, non-returnable.

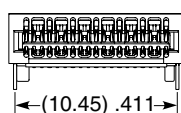
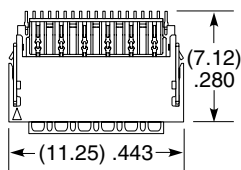
View complete specifications at: samtec.com?PCUE

RUGGED MICRO FLYOVER® SOCKET SYSTEM

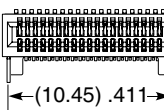
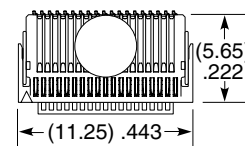
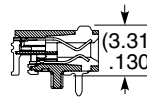
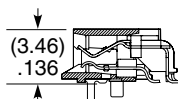
UEC5	NO. OF POSITIONS	DATA RATE	PLATING OPTION	D	RA	WELD TAB	OPTION	PACKAGING
	-019 (Per Row)	-1 = Up to 16 Gbps -2 = 28 Gbps+	-H = 30 μ " (0.76 μ m) Gold on contact, Gold flash on tail (-1 Data Rate only) -H = 30 μ " (0.76 μ m) Gold on contact, Matte Tin on tail (-2 Data Rate only)			-1 = Through-hole -2 = Surface Mount (Data Rate -1 only)	Leave blank for -2 Data Rate -A = Alignment Pin (Available with Data Rate -1 only)	Leave blank for Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

UEC5

Board Mates:
ECUE, ECUO,
PCUO, PCUE,
ETUO



UEC5-019-2-X-D-RA-1



UEC5-019-1-X-D-RA-1-A

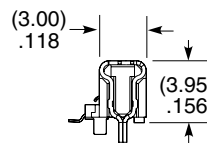
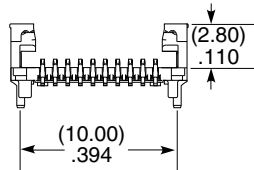
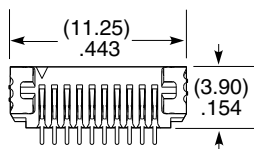
Note:
PCB footprints are not interchangeable for -1 and -2 data rate versions.

View complete specifications at: samtec.com?UEC5-1 & samtec.com?UEC5-2

UCC8	NO. OF POSITIONS	1	PLATING OPTION	S	WELD TAB	A	PACKAGING
	-010		-H = 30 μ " (0.76 μ m) Gold on contact, Gold flash on tail		-1 = Through-hole		Leave blank for Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

UCC8

Board Mates:
ECUE, ECUO,
PCUO, PCUE,
ETUO



Note:
Some sizes, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?UCC8

HIGH-SPEED EDGE CARD CABLE & SOCKET

(0.50 mm) .0197" PITCH • FEDP/FCDP SERIES

16
Gbps



FEDP

Mates:
FCDP-DV, FCDP-RA

SPECIFICATIONS

Cable:

34 AWG Eye Speed®
ultra low skew twinax

Signal Routing:
100 Ω

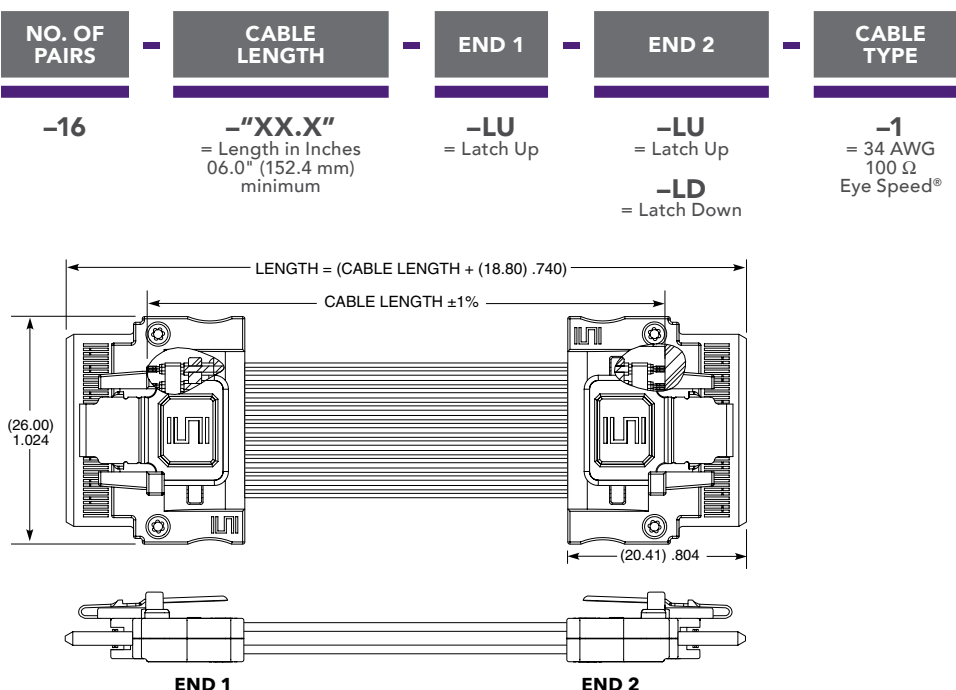
Operating Temp Range:

-40 °C to +125 °C

Current Rating:

1.3 A per pin
(2 pins powered)

**EYE
SPEED
CABLE**



FEDP-16-XX.X-LU-LU-1 SHOWN

Note:

For speeds up to 28G NRZ/56G PAM4, FEDP must be paired with FQSFP and FQSFP-DD. Contact hdr@samtec.com for more information.

Some sizes, styles and options are non-standard, non-returnable.

FCDP

Mates:
FEDP

SPECIFICATIONS

Insulator Material:

Black LCP

Contact Material:

Copper Alloy

Plating:

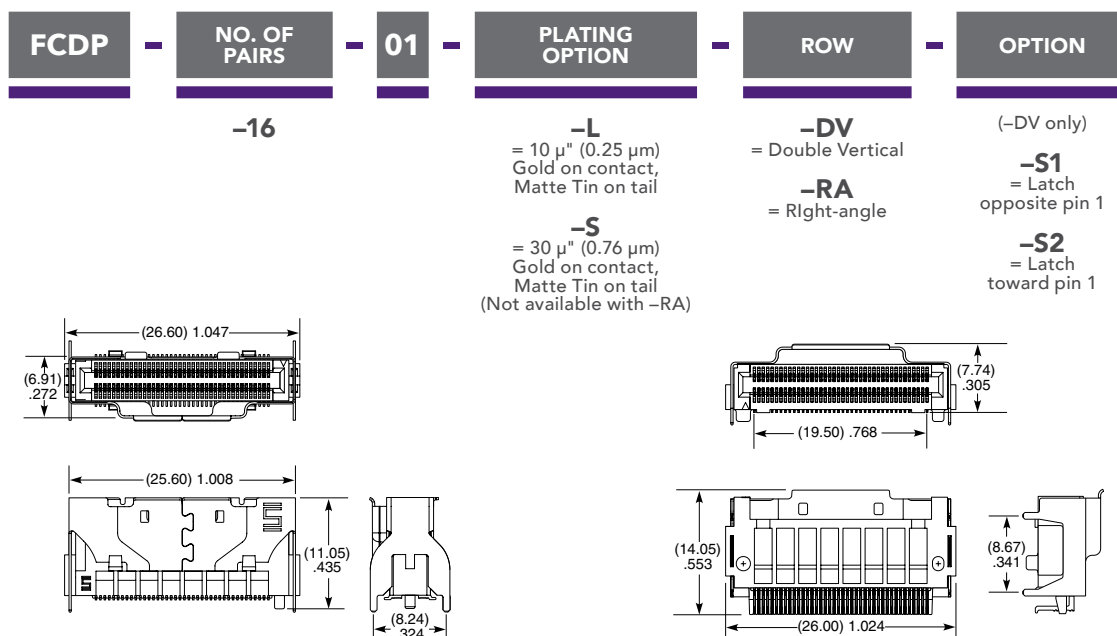
Au or Sn over
50 μ" (1.27 μm) Ni

Shield Material:

Copper Alloy

Current Rating:

1.3 A per pin
(2 pins powered)



FCDP-16-01-X-DV-S1 SHOWN

FCDP-16-01-L-RA SHOWN

Note:

Some sizes, styles and options are non-standard, non-returnable.

TWINAX EDGE CARD CABLE ASSEMBLY

(0.80 mm) .0315" PITCH • ECDP SERIES

14
Gbps



ECDP

Mates:

HSEC8 (-L2 option),
HSEC8 (-BL option)

SPECIFICATIONS

Cable:

30 AWG twinax cable

Plating:

Edge Card = ENIG,
3-10 microinches

Operating Temp Range:

-25 °C to +105 °C

Current Rating:

2.3 A per pin
(2 adjacent pins powered)

Impedance:

100 Ω Differential

Bend Radius:

(3.18 mm) .125"

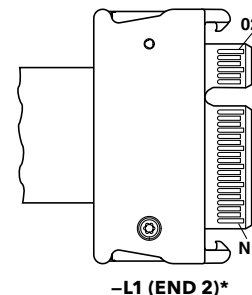
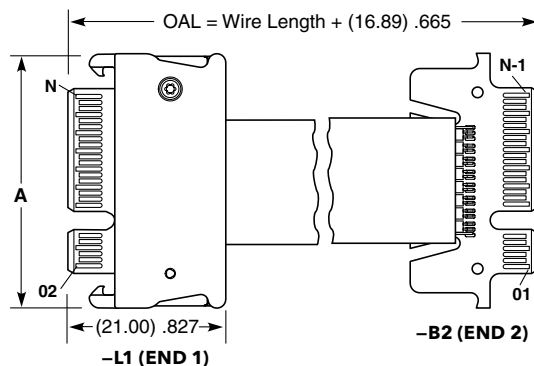
Pinout Map:

See web address below

ECDP	NO. OF PAIRS	WIRE LENGTH	END 1	END 2	WIRING OPTION	CABLE TYPE
	-04, -08, -16, -32	- "XX.XX" = Wire Length in Inches (95.3 mm) 03.75" minimum	-L1 = Double Vertical with latches -B1 = Board lock, No housing	-L1 = Double Vertical with latches (Wiring option -3 & -4 only) -L2 = Double Vertical with latches (Wiring option -1 & -2 only) -B1 = Board lock, No housing (Wiring option -3 & -4 only) -B2 = Board lock, No housing (Wiring option -1 & -2 only)	-1 = Pin 1 to Pin 1 -2 = Pin 1 to Pin 2 -3 = Pin 1 to Pin N-1 -4 = Pin 1 to Pin N	-3 = 100 Ω Eye Speed [®]

NO. OF PAIRS	A
-04	(20.85) .821
-08	(24.05) .947
-16	(33.66) 1.325
-32	(52.86) 2.081

CABLE	CONNECTOR
ECDP-04	HSEC8-109-XX
ECDP-08	HSEC8-113-XX
ECDP-16	HSEC8-125-XX
ECDP-32	HSEC8-149-XX



*Same pinout for
-B1 end 2 and -L1 end 2.

Notes:

Cable lengths longer than
40.00" (1 meter) are not
supported with S.I. test data.

Design your full cable
assembly with Samtec's
High-Speed Cable Builder at
www.samtec.com/cablebuilder

Some lengths, styles and
options are non-standard,
non-returnable.



QPAIRS® TWINAX CABLE ASSEMBLIES

14
Gbps



(0.50 mm) .0197" & (0.80 mm) .0315" PITCH • HQDP/EQDP SERIES

EQDP

Mates:

QTE-DP, QSE-DP

HQDP

Mates:

QTH-DP, QSH-DP

SPECIFICATIONS

Cable:

30 AWG twinax ribbon

Signal Routing:

100 Ω Differential

Cable Bending Radius:

(3.18 mm) 1/8" min

Plating:

Au over 50 μ" (1.27 μm) Ni

Current Rating:

EQDP = 500 mA per pin

HQDP = 400 mA per pin

(6 adjacent pins powered)

Propagation Delay:

4.67 nsec/meter

Operating Temp Range:

-25 °C to +105 °C

Skew (pair-to-pair):

<10 ps/ft

Skew (within a pair):

<5 ps/ft

EMI Performance:

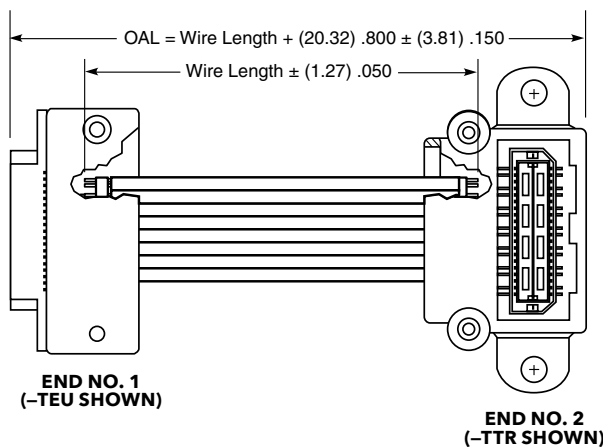
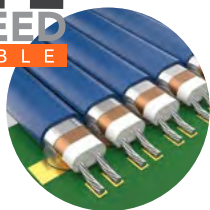
FCC Class A

SERIES	NO. OF PAIRS	WIRE LENGTH	END NO. 1	END NO. 2	WIRING OPTION	SCREW OPTION
HQDP = (0.50 mm) .0197" pitch	-020, -040, -060 (20 pairs per bank) HQDP Series	-"XX.XX" = Wire Length in Inches (43.7 mm) 01.72" minimum	Specify END ASSEMBLIES from chart		-5 = Pin 1 to Pin 1	Leave blank for no Screw Option
EQDP = (0.80 mm) .0315" pitch	-014, -028, -042 (14 pairs per bank) EQDP Series				-6 = Pin 1 to Pin 2	-F = End No. 1
					-7 = Pin 1 to Second Last Pin	-S = End No. 2
					-8 = Pin 1 to Last Pin	-B = Both Ends

END	SURFACE MOUNT
TTR	Terminal, Top, Notch Right
TTL	Terminal, Top, Notch Left
TBR	Terminal, Bottom, Notch Right
TBL	Terminal, Bottom, Notch Left
STR	Socket, Top, Notch Right
STL	Socket, Top, Notch Left
SBR	Socket, Bottom, Notch Right
SBL	Socket, Bottom, Notch Left

END	EDGE MOUNT
TEU	Terminal, Edge, Notch Up
TED	Terminal, Edge, Notch Down
SEU	Socket, Edge, Notch Up
SED	Socket, Edge, Notch Down

EYE
SPEED
CABLE



Notes:

Cable lengths longer than 40.00" (1 meter) are not supported with S.I. test data.

Design your full cable assembly with Samtec's High-Speed Cable Builder at www.samtec.com/cablebuilder

This Series is non-standard, non-returnable.

WIRING REQUIREMENTS

WIRING OPTION	END OPTIONS
5 or 6	TTR, TBL, STL, SBR, TEU, SED to TTR, TBL, STL, SBR, TED, SEU or TTL, TBR, STR, SBL, TED, SEU to TTL, TBR, STR, SBL, TEU, SED
7 or 8	TTR, TBL, STL, SBR, TEU, SED to TTL, TBR, STR, SBL, TEU, SED or TTL, TBR, STR, SBL, TED, SEU to TTR, TBL, STL, SBR, TED, SEU

EDGE RATE® TWINAX CABLE ASSEMBLIES

(0.80 mm) .0315" PITCH • ERDP SERIES

14
Gbps



ERDP

Mates:

ERF8 (-L), ERM8 (-L)

(Mating connectors require latching option -L)

SPECIFICATIONS

Cable:

30 AWG twinax ribbon cable

Signal Routing:

100 Ω Differential

Plating:

Au over 50 μ" (1.27 μm) Ni

Operating Temp Range:

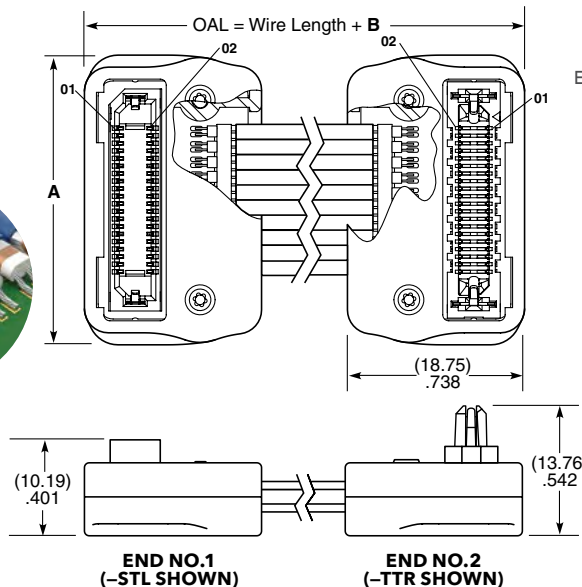
-25 °C to +105 °C

ERDP	NO. POSITIONS PER ROW	WIRE LENGTH	END NO. 1	END NO. 2	WIRING OPTION	LATCH
	-013 = 8 Pair	- "XX.XX" = Wire Length in Inches (43.7 mm) 01.72" minimum	-TTR = Terminal, Top Right		-5 = Pin 1 to Pin 1	Specify LATCH from chart (Required callout)
	-025 = 16 Pair		-TTL = Terminal, Top Left		-6 = Pin 1 to Pin 2	
	-049 = 32 Pair		-TBR = Terminal, Bottom Right		-7 = Pin 1 to Pin N - 1	
			-TBL = Terminal, Bottom Left		-8 = Pin 1 to Pin N	
			-STR = Socket, Top Right			
			-STL = Socket, Top Left			
			-SBR = Socket, Bottom Right			
			-SBL = Socket, Bottom Left			
			-TEU = Terminal, Edge Mount Up			
			-TED = Terminal, Edge Mount Down			

POSITIONS PER ROW	A
-013	(25.86) 1.018
-025	(34.67) 1.365
-049	(53.85) 2.120

END TO END	B
DV to DV	(23.47) .924
DV to Edge Mount (-TEX)	(26.69) 1.051
Edge Mount (-TEX)	(29.92) 1.178

**EYE
SPEED
CABLE**



Notes:

Cable lengths longer than 40.00" (1 meter) are not supported with S.I. test data.

Design your full cable assembly with Samtec's High-Speed Cable Builder at www.samtec.com/cablebuilder

Some lengths, styles and options are non-standard, non-returnable.

LATCH	ASSEMBLY
† -L	End No. 1 Standard Latch, End No. 2 Squeeze Latch
◆ -R	End No. 1 Squeeze Latch, End No. 2 Standard Latch
-D	Both Ends Standard Latch
-N	No Housing Both Ends Standard Latch
* -B	Both Ends Squeeze Latch
◆ -F	End No. 1 Screw Option, End No. 2 Friction Latch
† -S	End No. 1 Friction Latch, End No. 2 Screw Option
* -C	Both Ends Screw Option
* -G	End No. 1 Screw Option, End No. 2 Squeeze Latch
* -T	End No. 1 Squeeze Latch, End No. 2 Screw Option

* -B, -C, -G & -T option only available with -TEX on both ends.

† -L & -S option only available with -TEX on second end.

◆ -R & -F option only available with -TEX on first end.

HIGH-SPEED HERMAPHRODITIC CABLE

(0.50 mm) .0197" PITCH • HLCD SERIES



HLCD

Mates:
LSHM

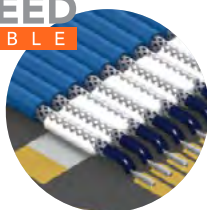
SPECIFICATIONS

Cable:
38 AWG 50 Ω coax cable
Signal Routing:
50 Ω Single-Ended
Plating:
Au over 50 μ" (1.27 μm) Ni
Operating Temp Range:
-25 °C to +105 °C
Current Rating:
0.9 A per pin
(2 pins powered)

HLCD	POSITIONS PER ROW	WIRE LENGTH	END NO. 1	END 1 OPTION	END NO. 2	END 2 OPTION	WIRING OPTION
	-20, -30, -40, -50 (Standard sizes)	- "XX.XX" = Wire Length in Inches (43.7 mm) 01.72" minimum	-TR = Vertical, Top Right	Leave blank for no screw down. Screw down not available for -TD, -TH, -BD & -BH options.	-TR = Vertical, Top Right	Leave blank for no screw down. Screw down not available for -TD -TH, -BD & -BH options.	-1 = Pin 1 to Pin 1
			-TL = Vertical, Top Left		-TL = Vertical, Top Left		-2 = Pin 1 to Pin 2
			-BR = Vertical, Bottom Right	S = Screw down in PCB	-BR = Vertical, Bottom Right		-3 = Pin 1 to Pin N-1
			-BL = Vertical, Bottom Left		-BL = Vertical, Bottom Left	S = Screw down in PCB	-4 = Pin 1 to Pin N
			-TD = Right- angle, Top		-TD = Right- angle, Top		
			-TH = Reversed Right- angle, Top		-TH = Reversed Right- angle, Top		
			-BD = Right- angle, Bottom		-BD = Right- angle, Bottom		
			-BH = Reversed Right- angle, Bottom		-BH = Reversed Right- angle, Bottom		

END TO END	A
Vertical to Vertical	(21.84) .860
Vertical to Right-angle	(25.35) .998
Vertical to Reversed Right-angle	
Right-angle to Right-angle	
Right-angle to Reversed Right-angle	(28.85) 1.136
Reversed Right-angle to Reversed Right-angle	

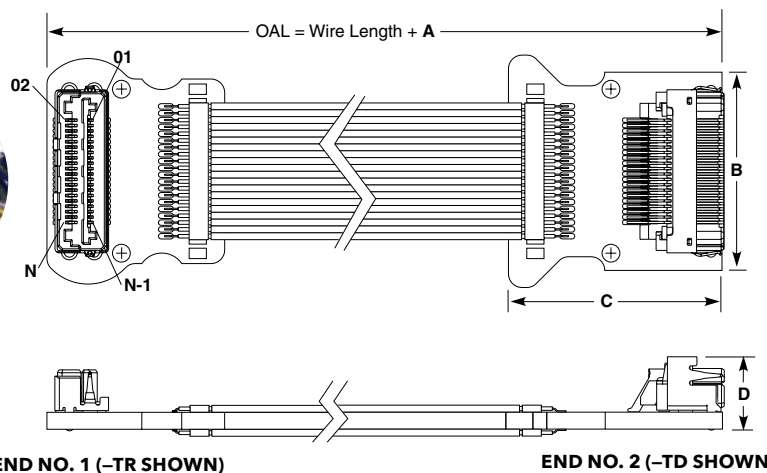
**EYE
SPEED®**
CABLE



Notes:
Cable lengths longer than
40.00" (1 meter) are not
supported with S.I. test data.

Design your full cable
assembly with Samtec's
High-Speed Cable Builder at
www.samtec.com/cablebuilder

Some lengths, styles and
options are non-standard,
non-returnable.



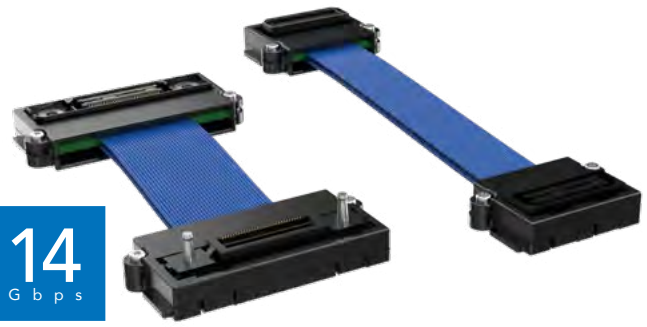
POSITIONS PER ROW	B	
	XR, XL	XH, XD
-20	(22.23) .875	(18.42) .725
-30	(24.77) .975	(26.04) 1.025
-40	(32.39) 1.275	(33.66) 1.325
-50	(40.01) 1.575	(41.28) 1.625

END OPTION	C	D
XL, XR	(16.51) .650	(6.02) .237
XD	(20.02) .788	(6.71) .264
XH		



Q STRIP® COAX CABLE ASSEMBLIES

14
G b p s



(0.50 mm) .0197" & (0.80 mm) .0315" PITCH • HQCD/EQCD SERIES

HQCD

Mates:
QTH, QSH

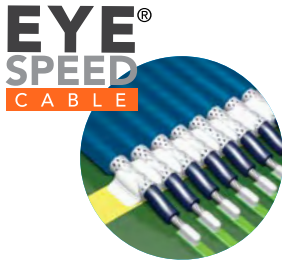
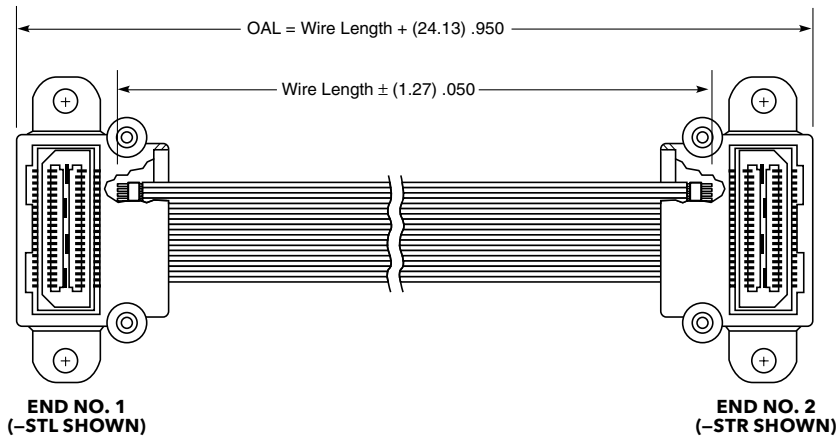
EQCD

Mates:
QTE, QSE

SPECIFICATIONS

Cable:
38 AWG micro coax ribbon
Signal Routing:
50 Ω Single-Ended
Overall Length:
(95.3 mm) 03.75" to
(1 m) 40" standard
Cable Flexing Life:
>10,000 cycles
Cable Bending Radius:
<2.5mm
Plating:
Au over 50 μ " (1.27 μ m) Ni
Current Rating:
EQCD = 500 mA per pin
HQCD = 300 mA per pin
(6 adjacent pins powered)
Cable Propagation Delay:
4.79 nsec/meter
Operating Temp Range:
-25 °C to +105 °C
Unmating Force (-RT1 option):
-RT1 option increases
unmating force up to 50%

SERIES	NO. OF POSITIONS PER ROW	WIRE LENGTH	END NO. 1	END NO. 2	WIRING OPTION	END OPTIONS
HQCD = (0.50 mm) .0197" pitch	-030, -060, -090 (HQCD Series)	-"XX.XX" = Wire Length in Inches (43.7 mm) 01.72" minimum	Specify END ASSEMBLIES from chart		-1 = Pin 1 to Pin 1 -2 = Pin 1 to Pin 2 -3 = Pin 1 to Second to Last Pin -4 = Pin 1 to Last Pin	Leave blank for no Screw Mount & Retention End Option -F = Screw Mount End No. 1 only (Not available with XPX options) -S = Screw Mount End No. 2 only -B = Screw Mount Both Ends (Not available with XPX options) -1 = End No. 1 Screw Mount. End No. 2 Retention Pin or Socket -2 = End No. 1 Retention Pin or Socket. End No. 2 Screw Mount Option
EQCD = (0.80 mm) .0315" pitch	-020, -040, -060 (EQCD Series)					



Notes:

Cable lengths longer than
40.00" (1 meter) are not
supported with S.I. test data.

Design your full cable
assembly with Samtec's
High-Speed Cable Builder at
www.samtec.com/cablebuilder

This Series is non-standard,
non-returnable.

END1 ONLY	PANEL MOUNT	END 1 or END 2	SURFACE MOUNT
TPU	Terminal, Panel Mount, Notch Up	TTR	Terminal, Top Mount, Notch Right
TPD	Terminal, Panel Mount, Notch Down	TTL	Terminal, Top Mount, Notch Left
SPU	Socket, Panel Mount, Notch Up	TBR	Terminal, Bottom Mount, Notch Right
SPD	Socket, Panel Mount, Notch Down	TBL	Terminal, Bottom Mount, Notch Left
		STR	Socket, Top Mount, Notch Right
		STL	Socket, Top Mount, Notch Left
		SBR	Socket, Bottom Mount, Notch Right
		SBL	Socket, Bottom Mount, Notch Left

EDGE RATE® CABLE ASSEMBLIES

(0.80 mm) .0315" PITCH • ERCD SERIES

14
Gbps



ERCD

Mates:

ERF8 (-L), ERM8 (-L)

(Mating connectors require latching option -L)

SPECIFICATIONS

Cable:

34 AWG coax ribbon cable

Signal Routing:

50 Ω Single-Ended

Plating:

Au over 50 μ" (1.27 μm) Ni

Operating Temp Range:

-25 °C to +105 °C

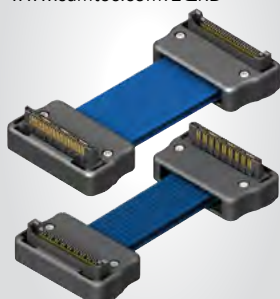
Current Rating:

1.3 A per pin
(2 pins powered)

OTHER SOLUTIONS

Q Rate® Cable Assemblies that mate to the QRF8, QRM8 Series.

For coax cable, visit the EQRD series located at www.samtec.com?EQRD



For twinax cable, visit the EQRP series located at www.samtec.com?EQRP

ERCD	NO. POSITIONS PER ROW	WIRE LENGTH	END NO. 1	END NO. 2	WIRING OPTION	LATCH
------	-----------------------	-------------	-----------	-----------	---------------	-------

-010, -013,
-020, -025,
-030, -040,
-050, -060

"XX.XX"
= Wire Length
in Inches
(43.7 mm)
01.72"
minimum

-TTR
= Terminal,
Top Right

-TTL
= Terminal,
Top Left

-TBR
= Terminal,
Bottom Right

-TBL
= Terminal,
Bottom Left

-STR
= Socket,
Top Right

-STL
= Socket,
Top Left

-SBR
= Socket,
Bottom Right

-SBL
= Socket,
Bottom Left

-TEU
= Terminal,
Edge Mount Up

-TED
= Terminal,
Edge Mount Down

-1
= Pin 1 to
Pin 1

-2
= Pin 1 to
Pin 2

-3
= Pin 1 to Pin
N -1

-4
= Pin 1 to
Pin N

Specify
LATCH
from
chart
(Required
callout)

POSITIONS PER ROW	A
-010	(22.66) .892
-013	(25.06) .987
-020	(30.66) 1.207
-025	(34.65) 1.364
-030	(38.66) 1.522
-040	(46.66) 1.837
-050	(54.66) 2.152
-060	(62.66) 2.467

END TO END	B
DV to DV	(23.47) .924
DV to Edge Mount (-TEX)	(26.69) 1.051
Edge Mount (-TEX)	(29.92) 1.178

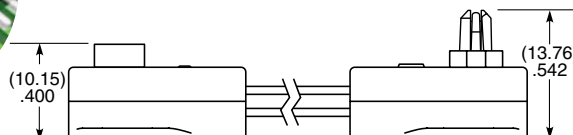
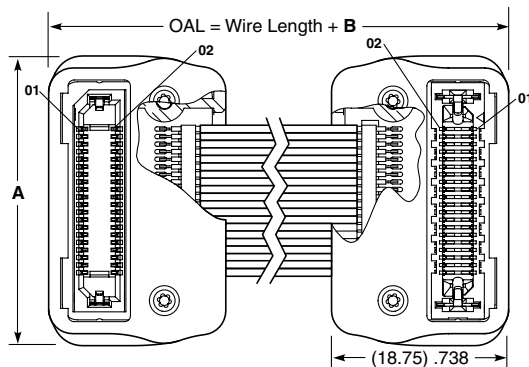
LATCH	ASSEMBLY
† -L	End No. 1 Standard Latch, End No. 2 Squeeze Latch
◆ -R	End No. 1 Squeeze Latch, End No. 2 Standard Latch
-D	Both Ends Standard Latch
-N	No Housing
-B	Both Ends Standard Latch
* -B	Both Ends Squeeze Latch
-F	End No. 1 Screw Option, End No. 2 Friction Latch
-S	End No. 1 Friction Latch, End No. 2 Screw Option
-C	Both Ends Screw Option
† -G	End No. 1 Screw Option, End No. 2 Squeeze Latch
◆ -T	End No. 1 Squeeze Latch, End No. 2 Screw Option

* -B option only available with
-TEX on both ends.

† -L & -S option only available with
-TEX on second end.

◆ -R & -T option only available with
-TEX on first end.

**EYE
SPEED**
CABLE



Notes:

Cable lengths longer than 40.00" (1 meter) are not supported with S.I. test data.

Design your full cable assembly with Samtec's High-Speed Cable Builder at www.samtec.com/cablebuilder

Some lengths, styles and options are non-standard, non-returnable.



HIGH-SPEED HIGH-DENSITY JUMPER

(1.27 mm) .050" PITCH • SEAC SERIES

14
Gbps



SEAC-N

Mates:
SEAFc, SEAF,
SEAF-RA, SEAFp

SEAC with latch posts

Mates:
SEAFc, SEAF-LP,
SEAF-RA-LP

SPECIFICATIONS

Cable:
36 AWG 50 Ω coax, or
32 AWG 100 Ω twinax
Signal Routing:
50 Ω Single-Ended, or
100 Ω Differential Pair
Plating:
Au over 50 μ" (1.27 μm) Ni
Operating Temp Range:
-40 °C to +125 °C (coax)
-25 °C to +105 °C (twinax)

**EYE
SPEED
CABLE**

SEAC	NO. OF POSITIONS PER ROW	NO. OF ROWS	CABLE LENGTH	TU	TU	CABLE TYPE	LATCH OPTION
	-020 (-04, -06, -08 & -10 row only)	-04, -06, -08, -10	- "XX.X" = Cable Length in Inches (152.4 mm) 06.0" minimum			Leave Blank for 36 AWG 50 Ω coax -2 = 32 AWG 100 Ω twinax	Leave Blank for latch post -N = No Latch
	-030 (-04, -06 & -08 row only)						
	-040 (-04 & -06 row only)						
	-050 (-04 row only)						

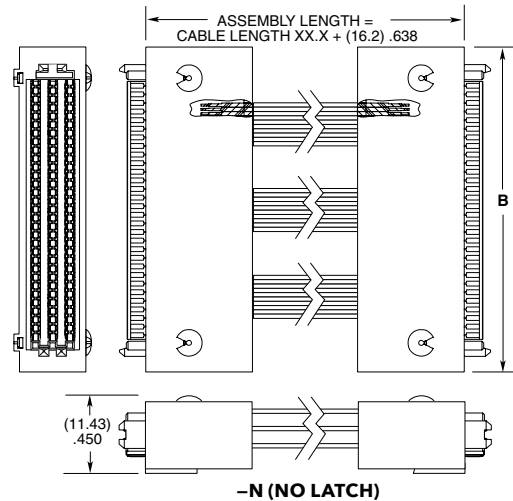
SIGNAL ROUTING

Product has some
lines dedicated to ground.

For single-ended and
differential pair signal/ground
assignments see signal routing
information on the assembly
print at the web address above.

Design your High-Speed Cable
with Samtec's High-Speed
Cable Solutionator® at
www.samtec.com/hdr

POSITIONS PER ROW	A	B	C
-020	(30.38) 1.196	(33.53) 1.320	(48.26) 1.900
-030	(43.08) 1.696	(46.23) 1.820	(60.96) 2.400
-040	(55.78) 2.196	(58.93) 2.320	(73.66) 2.900
-050	(68.48) 2.696	(71.63) 2.820	(86.36) 3.400



OTHER SOLUTIONS

Other end options
Mixed SEAC end types
300 positions or greater

Notes:
Mixed latch styles not available

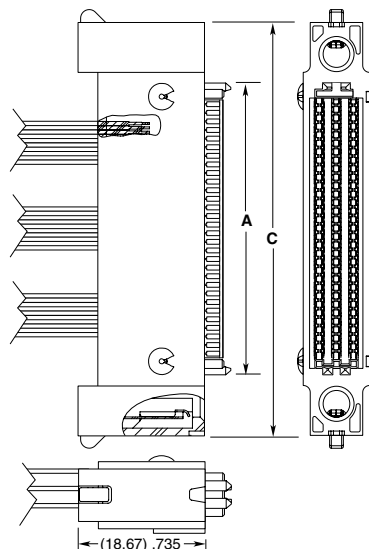
Cable lengths longer than
40.00" (1 meter) are not
supported with S.I. test data.

Design your full cable
assembly with Samtec's
High-Speed Cable Builder at
www.samtec.com/cablebuilder

PCIe® 2.0 & 3.0 capable

PCI-SIG®, PCI Express® and
the PCIe® design marks are
registered trademarks and/or
service marks of PCI-SIG.

Some lengths, styles and
options are non-standard,
non-returnable.

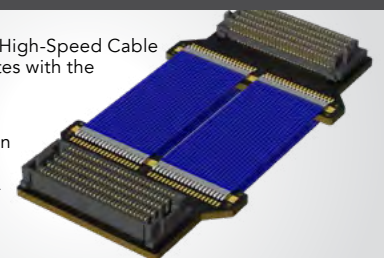


LATCH POST

SEARAY™ .8 mm CABLE ASSEMBLY

(0.80 mm) .0315" Pitch High-Speed Cable
in 8 to 10 rows that mates with the
SEAM8/SEAF8 Series.

For more information on
the ESCA Series,
visit samtec.com/ESCA



SEARAY™ MICRO COAX CABLE ASSEMBLY

(0.80 mm) .0315" PITCH • ESCA SERIES

14
G b p s



ESCA
Mates:
SEAM8, SEAF8

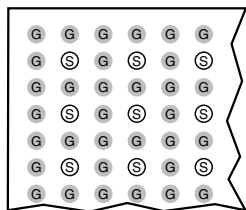
SPECIFICATIONS

Cable:
34 AWG micro
ribbon coax cable
Signal Routing:
50 Ω Single-Ended
Plating:
Au over 50 μ " (1.27 μ m) Ni
Operating Temp Range:
-25 °C to +105 °C

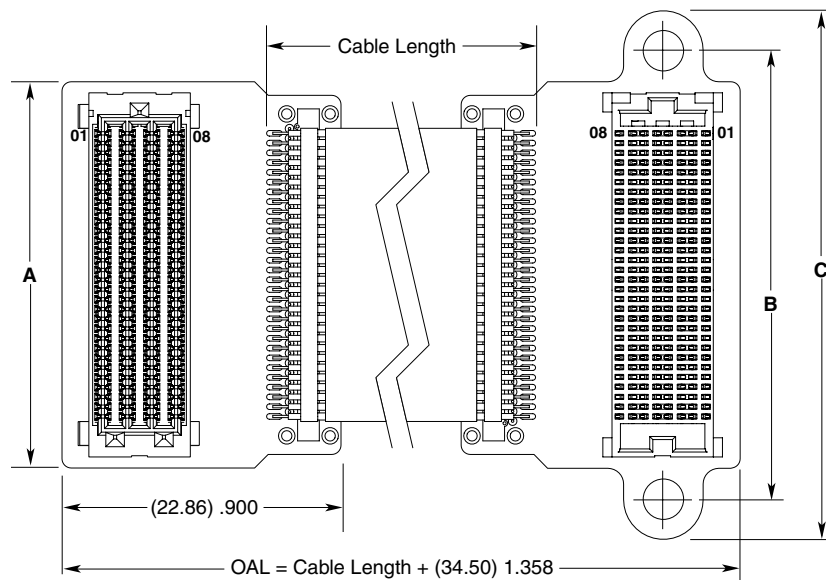
ESCA	NO. OF PINS PER ROW	NO. OF ROWS	CABLE LENGTH	END 1	END 2
	-20, -30	-08 = Eight Rows -10 = Ten Rows	- "XX.X" = Overall Length in Inches (50.8 mm) 02.0" minimum	-1 = SEAM8 without Screw Down -2 = SEAM8 with Screw Down -3 = SEAF8 without Screw Down -4 = SEAF8 with Screw Down	

NO. PINS PER ROW	A	B	C
-20	(23.65) .931	(28.73) 1.131	(35.20) 1.386
-30	(31.65) 1.246	(36.73) 1.446	(43.20) 1.701

SIGNAL MAPPING



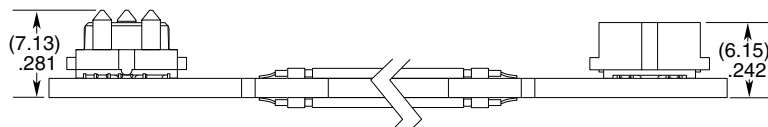
For complete signal mapping,
see www.samtec.com?ESCA
For other alternative
mapping options,
contact hdr@samtec.com.



Notes:
Cable lengths longer than
40.00" (1 meter) are not
supported with S.I. test data.

Design your full cable
assembly with Samtec's
High-Speed Cable Builder at
www.samtec.com/cablebuilder

Some lengths, styles and
options are non-standard,
non-returnable.

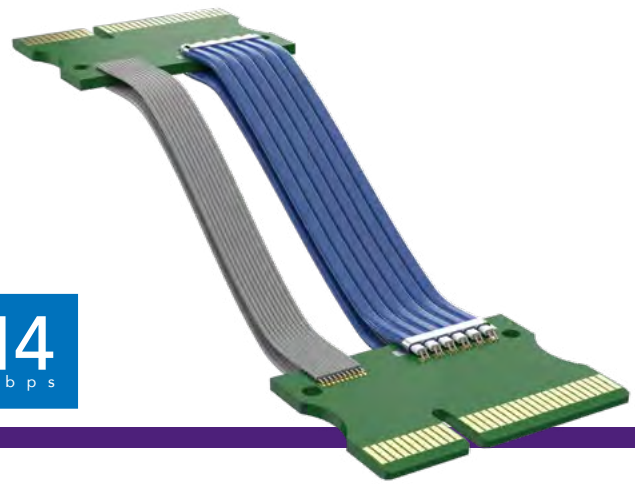


ESCA-30-08-XX.XX-1-4 SHOWN

PCI EXPRESS® JUMPERS

(1.00 mm) .0394" PITCH • PCIEC SERIES

14
Gbps



PCIEC

Mates:

PCIe, PCIe-LP

SPECIFICATIONS

Cable:

Eye Speed® 30 AWG twinax or
Eye Speed® 32 AWG twinax;
30 AWG insulated ribbon

Operating Temp:

-25 °C to +105 °C

Contact:

Phosphor Bronze

Plating:

Au or Sn over 50 μ" Ni

Performance:

Supports PCIe® Gen 2 & 3

Bend Radius:

(3.18 mm) .125"

-EM Connector:

Black Nylon

Card Insertion Depth:

(8.00 mm) .315"

PCIEC

NO. OF POSITIONS

-036 (x1),
-064 (x4),
-098 (x8),
-164 (x16)

WIRE LENGTH

-“XXXX”
= Wire Length
in millimeters
0050 mm
minimum

END NO. 1

-EC
= Edge
Card

END NO. 2

-EC
= PCIe®
Edge Card

-EM
= PCIe®
Edge Mount
Connector

CABLE OPTION

Specify
CABLE
OPTION
from
chart

IMPEDANCE

Leave blank
for 100 Ω

-85
= 85 Ω

APPLICATIONS

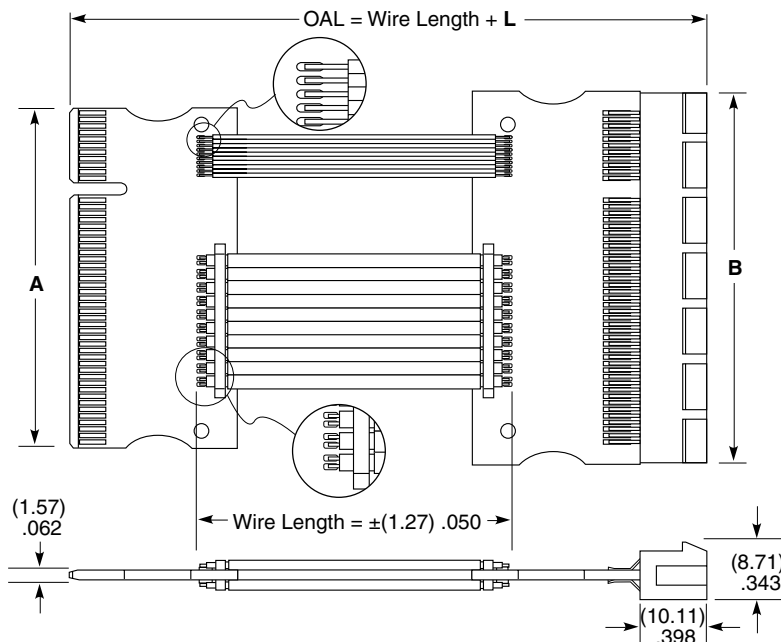
Loop back Extender (From one PCIe® slot to another PCIe® slot)

Ser-Des Physical Extender (From one PCIe® slot to another PCIe® Ser-Des)

Physical Extender for easy troubleshooting of PCIe® card debug and analysis
(PCIe® slot to Emulator or Analyzer)

CABLE OPTION	IMPEDANCE	
	85 Ω	100 Ω
BLANK	32 AWG TAPED SHIELD	NOT AVAILABLE*
-C (No Power Lines)	NOT TOOLED*	30 AWG TAPED SHIELD
-CP (With Power Lines)	NOT TOOLED*	30 AWG TAPED SHIELD
-P (With Power Lines)	32 AWG TAPED SHIELD	NOT AVAILABLE*

* Contact hdr@samtec.com for information



Notes:

Cable lengths longer than
40.00" (1 meter) are not
supported with S.I. test data.

Design your full cable
assembly with Samtec's
High-Speed Cable Builder at
www.samtec.com/cablebuilder

PCI-SIG®, PCI Express® and
the PCIe® design marks are
registered trademarks and/or
service marks of PCI-SIG

This Series is non-standard,
non-returnable.

END TO END	L
-EC to -EC	(39.6) 1.56
-EC to -EM	(49.6) 1.95

NO. OF POSITIONS	A	B
-036 (x1)	(20.30) .800	(25.40) 1.00
-064 (x4)	(34.30) 1.35	(39.40) 1.55
-098 (x8)	(51.30) 2.02	(56.40) 2.22
-164 (x16)	(84.30) 3.32	(89.40) 3.52

HIGH-SPEED COST EFFECTIVE COAX CABLE

(0.80 mm) .0315" PITCH • FCF8/FCS8 SERIES



FCF8

Mates:
FCS8

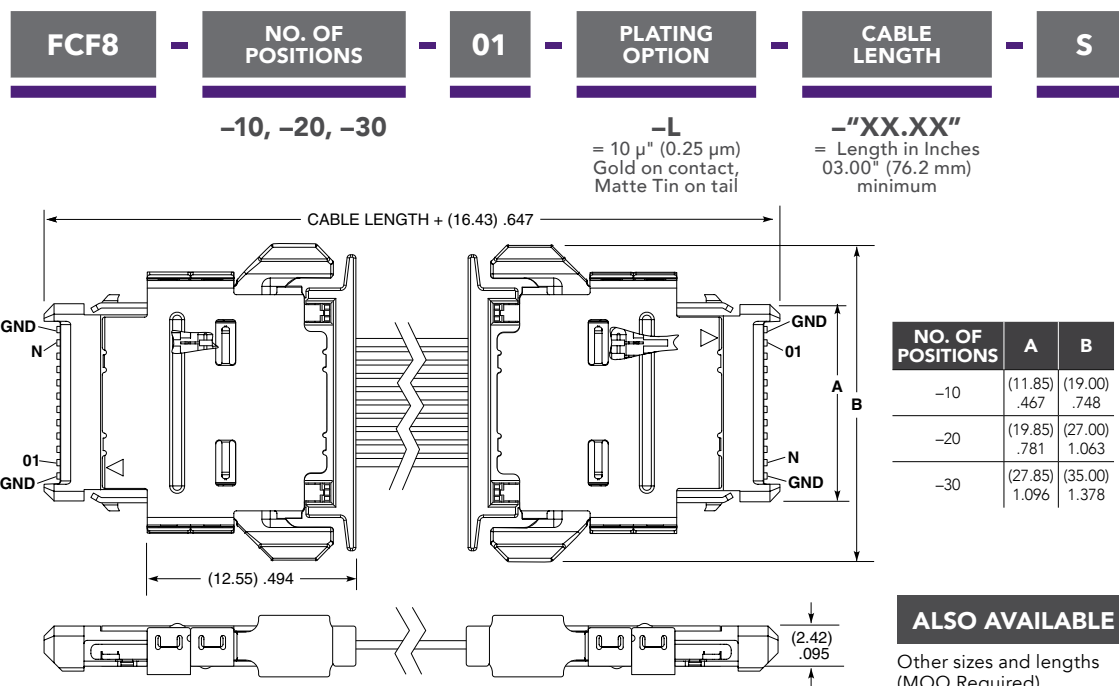
SPECIFICATIONS

Cable:
38 AWG coax
Overmold:
Nylon
Terminal Material:
Phosphor Bronze
Contact Plating:
Au or Sn over
50 μ " (1.27 μ m) Ni
Operating Temp Range:
-25 °C to +105 °C
Current Rating:
1.8 A per pin
(1 pin powered)

Notes:
Design your full cable assembly with Samtec's High-Speed Cable Builder at www.samtec.com/cablebuilder

Cable lengths longer than 40.00" (1 meter) are not supported with S.I. test data.

Some lengths, styles and options are non-standard, non-returnable.



FCS8

Mates:
FCF8

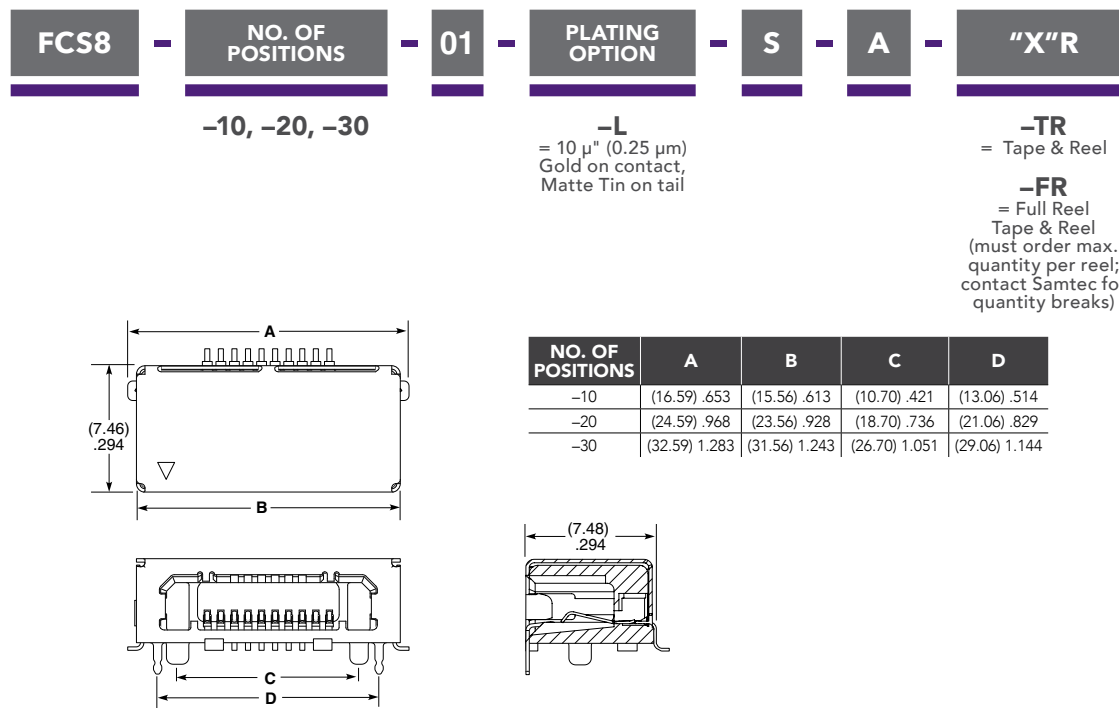
SPECIFICATIONS

Insulator Material:
Black LCP
Contact Material:
BeCu
Contact Plating:
Au or Sn over
50 μ " (1.27 μ m) Ni
Shield:
Nickel Plated Phosphor Bronze
Operating Temp Range:
-55 °C to +125 °C
Current Rating:
1.8 A per pin
(1 pin powered)

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.15 mm) .006" max*
*(.004" stencil solution may be available; contact IPG@samtec.com)

Note:
Some sizes, styles and options are non-standard, non-returnable.



HIGH-DENSITY HIGH-SPEED I/O SYSTEM

(0.635 mm) .025" PITCH • HDLSP/HDI6/HDC SERIES



HDLSP Mates: HDI6

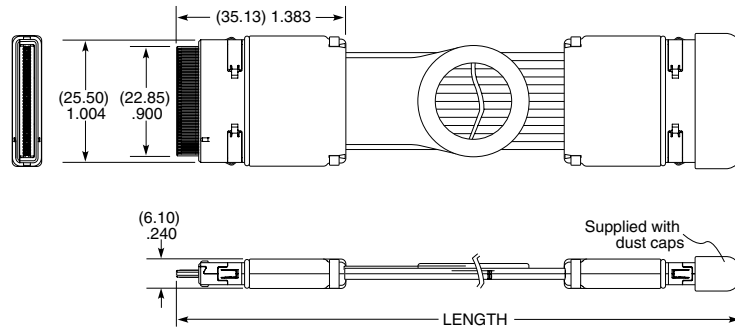
SPECIFICATIONS

Cable:
32 AWG low skew
pair cable
Insulator Material:
LCP
Terminal Material:
Phosphor Bronze
Jacket Material:
PVC
Insulator:
Dielectric
Conductors:
Copper
Braid:
Tinned Copper
Covers:
Diecast Zinc Alloy
Current Rating:
1.5 A per pin
(4 adjacent pins powered)

HDLSP
= High-density
Low Skew Pair Cable

-035
(Per Row)
= 12 Pairs per side

-"XXXX"
= Length in millimeters
-1000, -2000
(Standard lengths)



Note:
Some lengths, styles and
options are non-standard,
non-returnable.

HDI6 Mates: HDLSP

SPECIFICATIONS

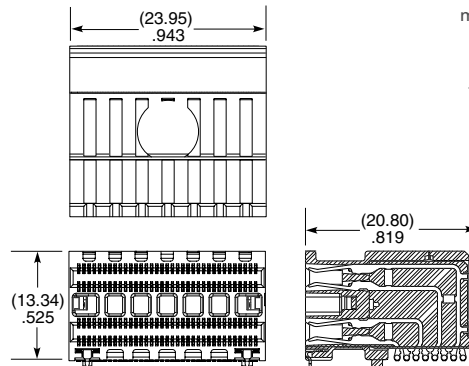
Insulator Material:
Black LCP
Terminal Material:
Phosphor Bronze
Plating:
Au or Sn over 50 μ " (1.27 μ m) Ni
Current Rating:
1.5 A per pin
(4 adjacent pins powered)
Operating Temp Range:
-25 °C to +105 °C
Voltage Rating:
150 VAC

HDI6 - **NO. OF POSITIONS** - **01** - **RA** - **"X"R**

-035
(Per Row)

-TR
= Tape &
Reel

-FR
= Full Reel
Tape & Reel
(must order
max. quantity
per reel;
contact
Samtec
for quantity
breaks)



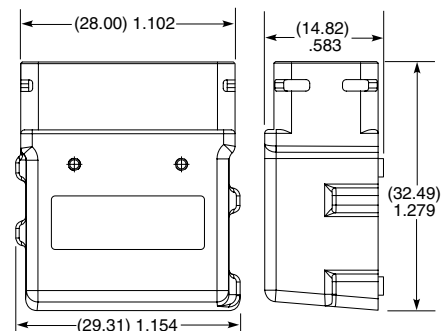
Notes:
For HT3.1 see
www.samtec.com/ht3 and
specify part number
ASP-149117-01

Some lengths, styles and
options are non-standard,
non-returnable.

SERIES - **NO. OF POSITIONS** - **01**

HDC
= Cage

-035
= Number of
positions



RUGGED LATCHING HIGH-SPEED SYSTEM

(0.80 mm) .0315" PITCH • EPLSP/ERI8/ERC SERIES



EPLSP

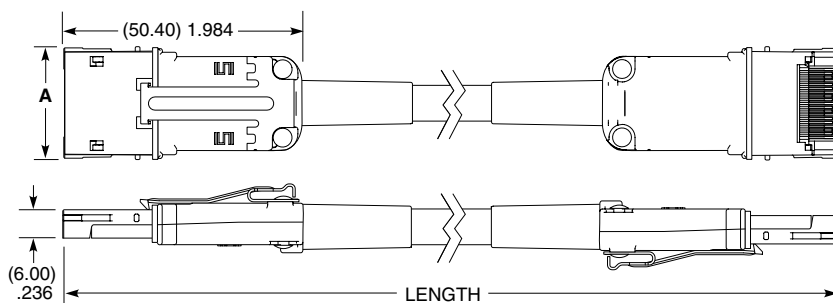
Mates:
ERI8

SPECIFICATIONS

Cable:
32 AWG Low Skew Pair/
28 AWG Power
Bend Radius:
(25.40 mm) 1.00"
Signal Routing:
100 Ω Differential
Pinout Map:
1:1 Map Standard
(See web address below
for additional information)
Operating Temp Range:
-20 °C to +105 °C
Current Rating:
1.7 A per pin
(2 pins powered)

SERIES	NO. OF POSITIONS	LENGTH
EPLSP = Eye Speed® I/O Cable	-019 = 9 Pairs, 5 Power, 19 positions -031 = 17 Pairs, 5 Power, 31 positions	-"XXXX" = Length in millimeters -1000, -2000, -3000 (Standard lengths)

NO. OF POSITIONS	A
-019	(23.85) .939
-031	(32.95) 1.30



Note:
This Series is non-standard,
non-returnable.

ERI8

Mates:
EPLSP

SPECIFICATIONS

Insulator Material:
Black LCP
Terminal Material:
BeCu
Plating:
Au or Sn over
50 μ " (1.27 μ m) Ni
Current Rating:
1.7 A per pin
(2 pins powered)
Voltage Rating:
225 VAC/320 VDC
Operating Temp Range:
-55 °C to +125 °C

**EDGE
RATE
CONTACT**

ERI8

NO. OF POSITIONS

PLATING OPTION

D

RA

OTHER OPTION

-019

= 9 Pairs,
5 Power,
19 positions

-031

= 17 Pairs,
5 Power,
31 positions

-S

= 30 μ"
(0.76 μm)
Gold on
contact,
Matte Tin
on tail

-TR

= Tape
& Reel

-FR

= Full Reel
Tape &
Reel
(must
order
max.
quantity
per reel;
contact
Samtec

NO. OF POSITIONS	A
-019	(19.08) .751
-031	(28.68) 1.13

SERIES

NO. OF POSITIONS

01

OPTION

ERC

= Cage

-019,
-031

= Number of
Positions

-01

= Without
Gasket

-02

= With
Gasket

NO. OF POSITIONS	A
------------------	---

NO. OF POSITIONS	A
-019	(19.08) .751
-031	(28.68) 1.13

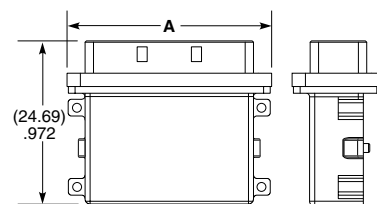
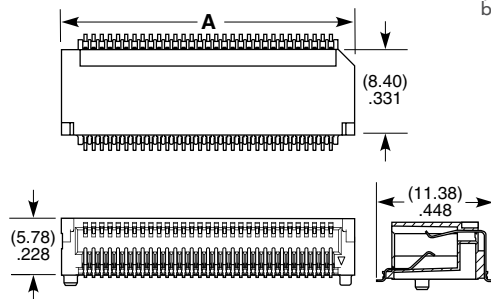
NO. OF POSITIONS	A
-019	(30.55) 1.203
-031	(40.15) 1.58

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max

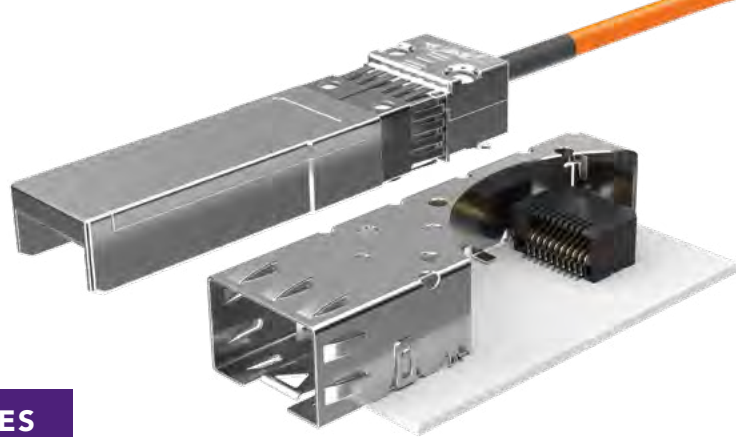
Notes:
Active equalization
reference design for
Eye Speed® I/O system
see www.samtec.com?EPLSP

Some lengths, styles and
options are non-standard,
non-returnable.



SFP & SFP+ CABLE & TRANSCEIVER

(0.80 mm) .0315" PITCH • SFPE/MECT SERIES



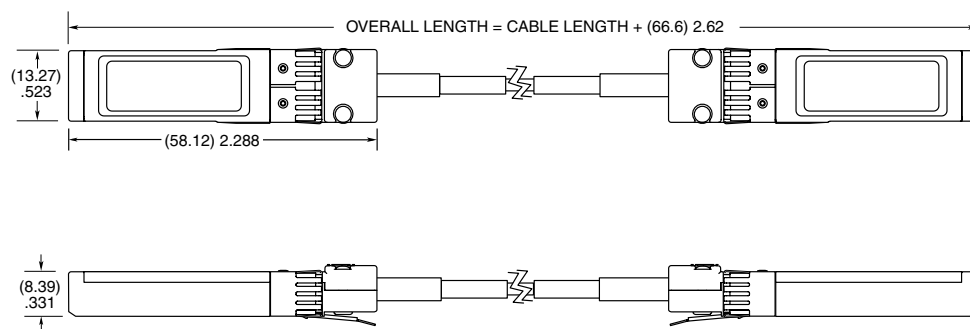
SFPE

Mates:
MECT, SFPC

SPECIFICATIONS

Impedance:
100 Ω
Signal Routing:
Differential

SFPE	-	NO. OF PAIRS	-	CABLE LENGTH	-	EQUALIZATION	-	WIRE GAUGE
		-010 = 2 Pairs		-XXXX = Length in millimeters -1000, -2000, -3000 (Standard lengths)		-NE = Non Equalized		-32 = 32 AWG



MECT

Mates:
SFP, SFP+, XFP or
XENPAK transceivers

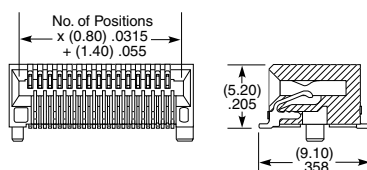
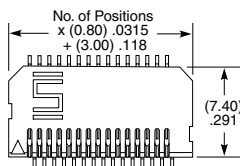
SPECIFICATIONS

Insulator Material:
Black LCP
Contact Material:
Phosphor Bronze
Plating:
Sn or Au over
100 μ " (2.54 μ m) Ni
Operating Temp Range:
-55 °C to +125 °C
Current Rating:
2 A per pin
(6 pins powered)
Voltage Rating:
265 VAC

PROCESSING

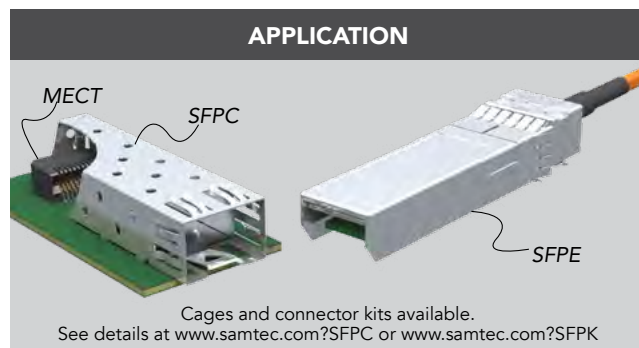
Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max

MECT	-	1	POSITIONS PER ROW	-	CARD THICKNESS	-	PLATING OPTION	-	D	-	RA1	-	OTHER OPTION
			10, 15, 35		-01 = (1 mm) .039" thick board		-M = 15 μ " (0.38 μ m) Gold on contact, Matte Tin on tail						-TR = Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)



15 POSITIONS SHOWN

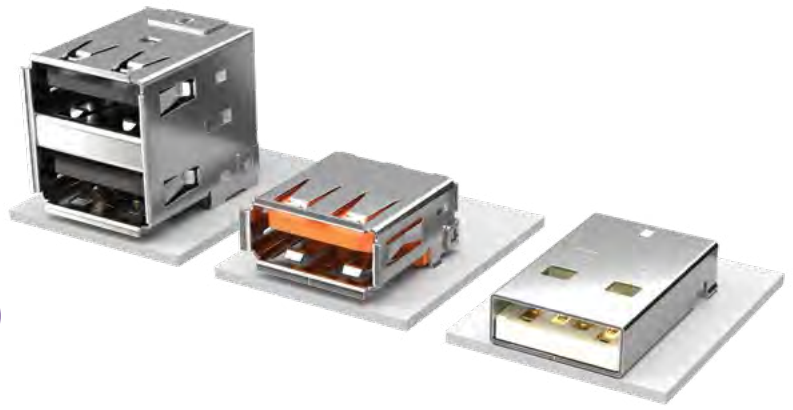
APPLICATION



Note:
Some sizes, styles and
options are non-standard,
non-returnable.

STANDARD & RUGGED USB 2.0

USB-A/USBR-A/USB-AM SERIES



SPECIFICATIONS

Insulator Material:

High Temperature
Thermoplastic

Contact Material:

Phosphor Bronze

Plating:

Gold on Contacts,
Nickel on Shell, Tin on Tails

Operating Temp Range:

-50 °C to +85 °C

Voltage Rating:

30 VAC

Cycles:

1500 (max tested)

Packaging:

Packaged and shipped in Bulk
Packaging Trays; Trays suitable
for automation available

Lead-Free Solderable:

-TH & -VU=Yes
(Wave Solder only)

TID Numbers (USB-A):

USB-A-D-X-X-TH (61001199)

USB-A-S-X-X-TH (61001180)

USB-A-S-X-X-SM2 (61001152)

TID Number (USB-AM):

USB-AM-S-X-X-SM (61001154)

SERIES	A	SHELL TYPE	PLATING	COLOR	TERMINATION
USB = Standard Connector		-S = Single	-F = Gold Flash on Mating Area, Tin on Tails	-B = Black (USB only)	-TH = Through-hole
USBR = Increased Retention Connector (Complies with Class 1, DIV II minimum withdrawal requirement of 15N.)		-D = Double (-TH option only)	-S = 30 μ" (0.76 μm) Gold on Mating Area, Tin on Tails	-W = White (USB only)	-SM2 = Surface Mount (USB only)
				-O = Orange (USBR only)	-VU = Upright, Through-hole

USB	TYPE	SHELL TYPE	PLATING	COLOR	TERMINATION
	-AM = A Type (Plug)	-S = Single	-F = Gold Flash on Mating Area, Tin on Tails	-B = Black	-TH = Through-hole
			-S = 30 μ" (0.76 μm) Gold on Mating Area, Tin on Tails	-W = White	-SM1 = Surface Mount

STANDARD & RUGGED USB 2.0

USB-B/USBR-B SERIES



SPECIFICATIONS

Insulator Material:

High Temperature
Thermoplastic

Contact Material:

Phosphor Bronze

Plating:

Gold on Contacts,
Nickel on Shell, Tin on Tails

Operating Temp Range:

-50 °C to +85 °C

Voltage Rating:

30 VAC

Cycles:

1500
(maximum number
of cycles tested)

Packaging:

Packaged and shipped in
Bulk Packaging Trays; Trays
suitable for automation are
available upon request.

Lead-Free Solderable:

USB-SM=Yes

USB-TH= Yes

(Wave Solder only)

USBR=Yes (Wave Solder only)

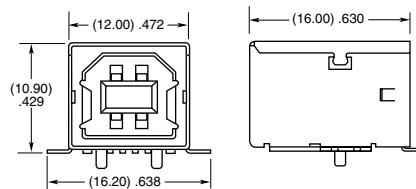
TID Number:

USB-B-S-X-TH (61001155)

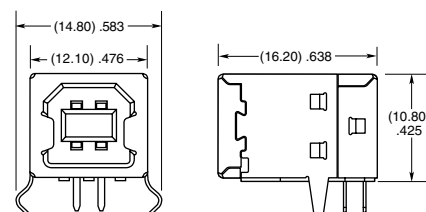
SERIES	B	S	PLATING	COLOR	TERMINATION	OTHER OPTION
USB = Standard Connector USBR = Increased Retention Connector (Complies with Class 1, DIV II minimum withdrawal requirement of 15N)			-F = Gold Flash on Mating Area, Tin on Tails -S = 30 μ" (0.76 μm) Gold on Mating Area, Tin on Tails	-B = Black (USB only) -W = White (USB only) -O = Orange (USBR only)	-TH = Through-hole -SM = Surface Mount (USB only) -VT = Vertical Top Entry	-TR = Tape and Reel (-SM only) -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks) (-SM only)

MATING / UNMATING FORCE (100 CYCLES)

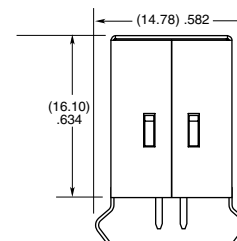
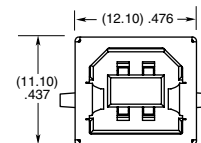
SERIES	MATING	UNMATING
USB	5.3 (23.59 N)	6.1 (27.15 N)
USBR	11.8 (52.51 N)	11.5 (51.18 N)



-SM



-TH



-VT

OPTICS

FUTURE PROOF • HIGH PERFORMANCE • PCI EXPRESS® • END OPTION FLEXIBILITY

129

FIREFLY™ MICRO FLYOVER SYSTEM™ (ECUO)

FIREFLY™



130

FIREFLY™ EXTENDED TEMPERATURE MICRO FLYOVER SYSTEM™ (ETUO)

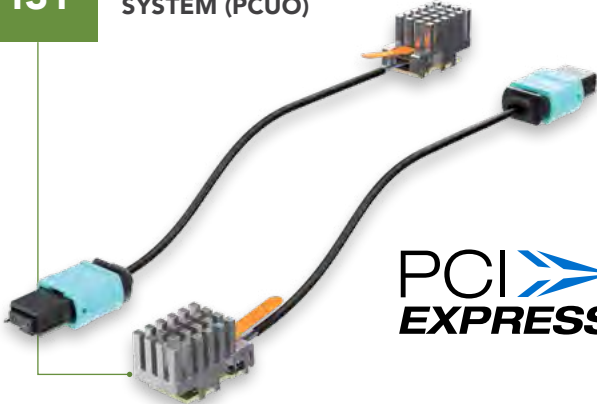
FIREFLY™



131

PCI EXPRESS®-OVER-FIBER FIREFLY™ SYSTEM (PCUO)

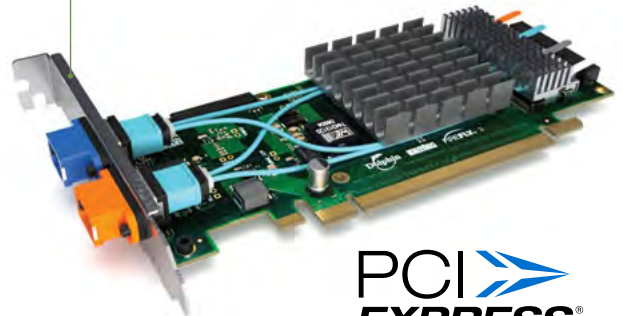
**PCI
EXPRESS®**



132

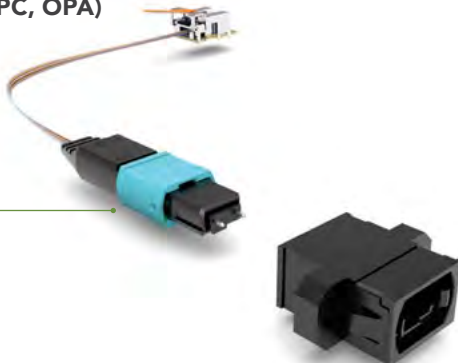
PCI EXPRESS®-OVER-FIBER FIREFLY™ ADAPTOR CARD (PCOA)

**PCI
EXPRESS®**



133

OPTICAL PATCH CABLE & ADAPTOR (FOPC, OPA)



134

FIREFLY™ EVALUATION & DEVELOPMENT KITS



FIREFLY™ MICRO FLYOVER SYSTEM™

FEATURES & BENEFITS

- Data connection taken “off board” simplifies board layout
- Industry leading miniature footprint allows for higher density close to data source
- Performance up to 28 Gbps per lane with a path to 56 Gbps PAM4 via optical cable for greater reach
- Simple assembly process with easy insertion/removal and trace routing, no through-holes
- Interchangeability of copper and optical using the same two-piece surface mount connector
- PCI Express®-Over-Fiber (PCUO) supports PCIe® protocol for low latency, power savings and guaranteed transmission; 3.0 and 4.0 solutions
- -40 °C to +85 °C extended temperature system for military, aerospace and industrial applications
- Flexible end options include MTP®, MT, MXC®, U-SDI interface, MT38999, VITA 66.X and other common interfaces
- Variety of integral heat sinks for conduction and convection cooling



Micro two-piece
connector system



PCI Express®-Over-Fiber
Adaptor Card

PRODUCT ROADMAP

Advanced Optics

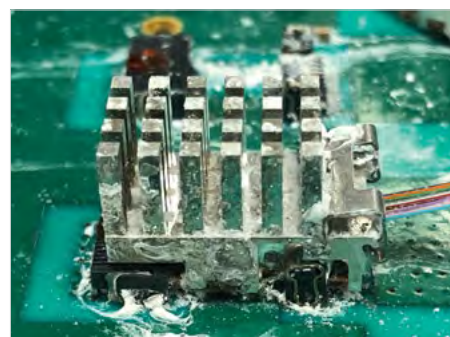
Samtec is focused on bringing to market 112 Gbps PAM4 solutions that are scalable, manufacturable and cost-efficient.

Immersion Cooling

Capable of immersion for liquid cooled systems.

Extreme Environments

Sealed for salt fog, blowing sand and dust, jet fuel exposure, etc. for exposed Military applications



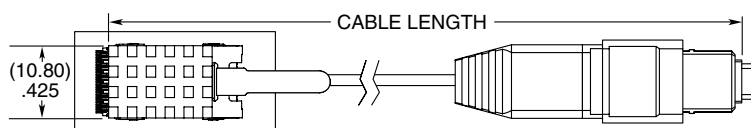
PCI-SIG®, PCI Express® and the PCIe® design marks are registered trademarks and/or service marks of PCI-SIG.



ECUO	WIDTH	DATA RATE	CABLE LENGTH	0	HEAT SINK	1	FIBER TYPE	END 2 OPTIONS
	-B04 = 4 Tx + 4 Rx -T12 = 12 Tx -R12 = 12 Rx -Y12 = 12 Tx + 12 Rx -U12 = 12 Channel AOC (Unidirectional)	-14 = 14 Gbps per lane -16 = 16.1 Gbps per lane (N/A -B04) -25 = 25.7 Gbps per lane (-B04 only) -28 = 28.1 Gbps per lane (-B04 only)	-"XXX" = Overall Length in Centimeters		-1 = Flat -2 = Pin-fin (-14 & -16 only) -3 = Flat with groove -4 = PCIe® Pin-fin (-14 & -16 only) -5 = 1.75 cm tall Pin-fin (-B04 only)		-4 = Aqua loose tube with Boot -5 = Jacketed ribbon with boot -6 = Jacketed ribbon -7 = Black loose tube with boot -8 = Black loose tube	(Leave blank for -U12) -Y12 requires -2X end option 12 Fibers -01 = MTP® Male -02 = MTP® Female -07 = MXC® Internal Plug -0E = MPO Plus®, Male, bayonet 24 Fibers -21 = MTP® Male -22 = MTP® Female -27 = MXC® Internal Plug -2E = MPO Plus®, Male, bayonet

ECUO

Mates with:
UEC5, UCC8, OPA



FEATURES

- Supports data center and HPC protocols, including: Ethernet, InfiniBand™, Fibre Channel
- Customizable optical connectors
- Integrated coupling capacitors
- Standard temperature range 0 °C to +70 °C
- Evaluation & Development boards available

Class 1 LASER PRODUCT
per IEC 60825-1 Ed. 3 (2014)

TOOLING

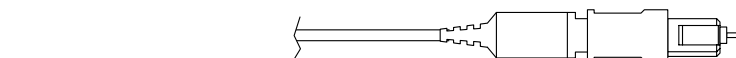
Insertion Tool: CAT-IN-ECUO-02

Notes:

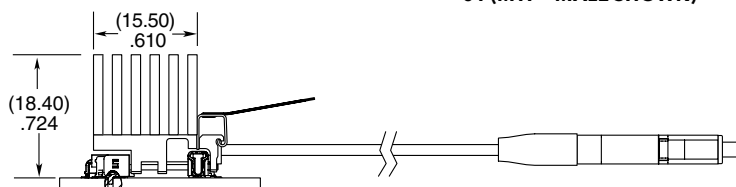
MTP® is a registered trademark of US Conec Ltd.

All FireFly™ designs, specifications and components are preliminary and subject to change without notice.

Some lengths, styles and options are non-standard, non-returnable.



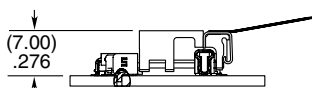
-01 (MTP® MALE SHOWN)



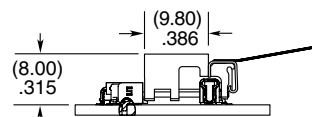
-07 (MXC® INTERNAL PLUG SHOWN)

-2 PIN-FIN HEAT SINK

:



-1 FLAT HEAT SINK



-3 FLAT WITH GROOVE HEAT SINK (MULTI-ROW CONFIGURATION)

View complete specifications at: samtec.com?ECUO



EXTENDED TEMP OPTICAL MICRO FLYOVER SYSTEM™

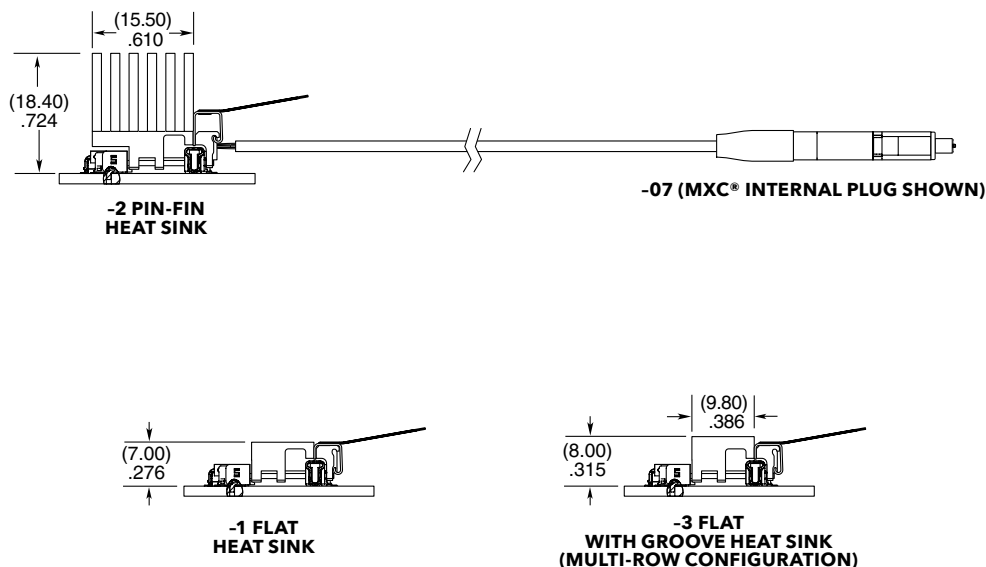
ETUO	WIDTH	DATA RATE	CABLE LENGTH	0	HEAT SINK	1	FIBER TYPE	END 2 OPTIONS
	-B04 = 4 Tx + 4 Rx -T12 = 12 Tx -R12 = 12 Rx -Y12 = 12 Tx + 12 Rx -U12 = 12 Channel AOC (Unidirectional)	-10 = 10.3125 Gbps -25 = 25.7 Gbps (-B04 only)	-"XXX" = Overall Length in Centimeters		-1 = Flat -2 = Pin-fin -3 = Flat with groove -4 = PCIe® Pin-fin (-10 only) -5 = 1.75 cm tall Pin-fin (-B04 only)		-5 = Jacketed ribbon with Boot -6 = Jacketed ribbon -7 = Black loose tube with boot -8 = Black loose tube	(Leave blank for -U12) -Y12 requires -2X end option 12 Fibers -01 = MTP® Male -02 = MTP® Female -07 = MXC® Internal Plug -0A = VITA 66.X Ready -0C = MT38999 Male -0E = MPO Plus®, Male, bayonet 24 Fibers -21 = MTP® Male -22 = MTP® Female -27 = MXC® Internal Plug -2A = VITA 66.X Ready -2C = MT38999 Male -2E = MPO Plus®, Male, bayonet

ETUO

Mates with:
UEC5, UCC8,
OPA

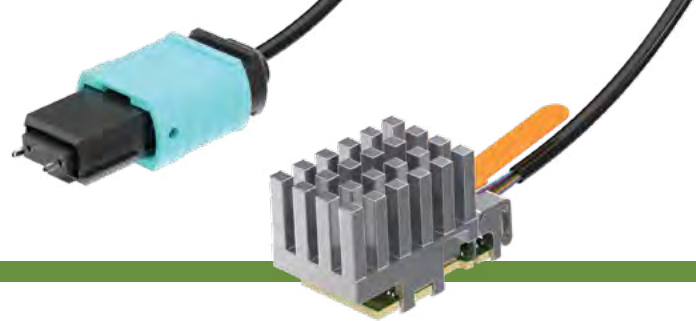
FEATURES

- Optimized for SWaP
- Extended temperature range from -40 °C to +85 °C
- Demonstrated error free transmission during applied external vibrations and shock test, to methods specified in MIL-STD-810G
- Micro rugged board level connector system with positive latching, weld tabs and loading guides for secure connection
- Pigtailed cable for maximum link budget
- Customizable optical connectors
- Integrated coupling capacitors
- Integral heat sink provides optimal cooling for thermal operating conditions
- Evaluation and Development boards available



Class 1 LASER PRODUCT
per IEC 60825-1 Ed. 3 (2014)

View complete specifications at: samtec.com?ETUO



PCIe®-OVER-FIBER FLYOVER®

PCUO	WIDTH	SPEED	CABLE LENGTH	0	HEAT SINK	1	FIBER TYPE	END 2 OPTIONS
	-04 = x4 Lanes	-G3 = Gen 3	-“XXX” = Overall Length in Centimeters		-1 = Flat		-7 = Black loose tube with boot	(-08 width requires -2X end option)
	-08 = x8 Lanes	-G4 = Gen 4			-4 = PCIe® Pin-fin		-8 = Black loose tube	-01/-21 = MTP® Male
								-02/-22 = MTP® Female
								-0A/-2A = VITA 66.X Ready
								-0C/-2C = MT38999 Male

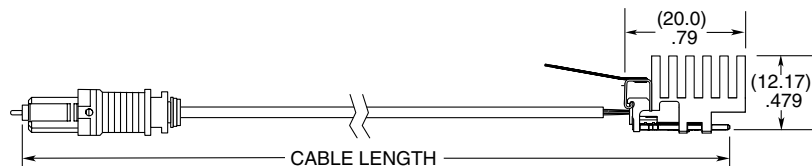
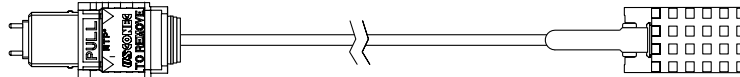
PCUO

Mates with:

UEC5, UCC8,
OPA

FEATURES

- PCIe® 4.0 x4, scalable to x8 and x16 widths
- Duplex auxiliary signals allow both transparent and non-transparent bridging
- High-performance signal quality with BER better than 1E-12
- Enables links up to 100 m
- Allows nontraditional FPGA/ASIC end points
- Standard temperature range 0 °C to +70 °C



PCUO-04-G3-XXX-0-4-1-8 SHOWN

Class 1 LASER PRODUCT
per IEC 60825-1 Ed. 3 (2014)

View complete specifications at: samtec.com?PCUO

samtec.com/FireFly

F-221



PCI
EXPRESS®
4.0 SOLUTIONS



PCIe®-OVER-FIBER ADAPTOR CARD

PCOA

SPEED

WIDTH

CONFIGURATION

-G3

= Gen 3

-G4

= Gen 4

-S4

= Single x4

-D4

= Dual x4

-Q4

= Quad x4

-S8

= Single x8

-D8

= Dual x8

-16

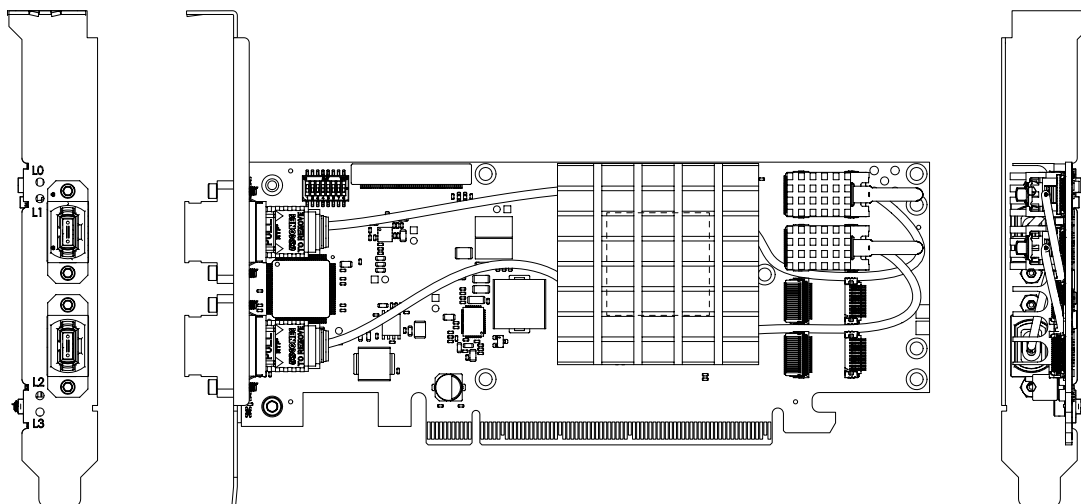
= Single x16

-0A

= Transparent Bridge Host
(For non-transparent bridging
support, contact Samtec)

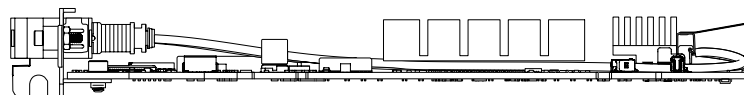
FEATURES

- Uses PCUO FireFly™ optical cable for clear signal transmissions with increased reach and cost optimization
- PCIe® x16 edge card connector
- Scalable configurations for cost optimized performance
- Transparent or non-transparent bridging for system flexibility and multi-processor support
- Reconfigurable host or target operation
- Ideal for high-performance and applications requiring robust data transmission



Class 1 LASER PRODUCT
per IEC 60825-1 Ed. 3 (2014)

Gen 3 only (Gen 4 in testing)



PCOA-G3-D4-0A SHOWN

Notes:

Some lengths, styles and options are non-standard, non-returnable.

PCI-SIG®, PCI Express® and the PCIe® design marks are registered trademarks and/or service marks of PCI-SIG.

View complete specifications at: samtec.com?PCOA

samtec.com/FireFly

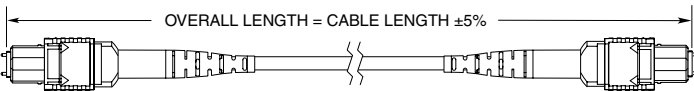
F-221

OPTICAL PATCH CABLE AND ADAPTOR

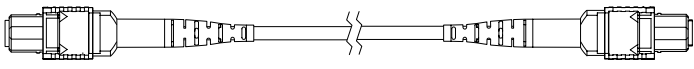
FOPC	END 1	END 2	CABLE LENGTH	FIBERS	CONSTRUCTION
	-01 = MTP Male	-01 = MTP Male	-003 = 3 Meters	-12, -24	-01 = 3 mm Round Jacket
	-02 = MTP Female	-02 = MTP Female	-010 = 10 Meters		
			-100 = 100 Meters (Other lengths available as custom parts)		



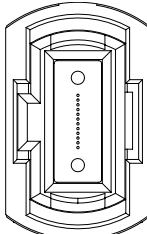
OVERALL LENGTH = CABLE LENGTH $\pm 5\%$



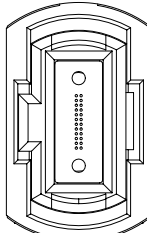
-01-01-XXX-12-01



-02-02-XXX-24-01



12 FIBER



24 FIBER

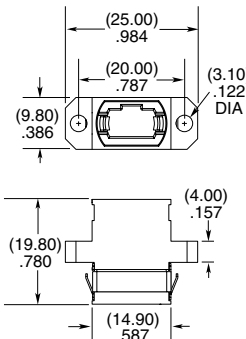
SPECIFICATIONS

Compliant Specifications:
TIA-604-5-D (FOCIS 5)
TIA-568-C.3
IEC-61754-7-1

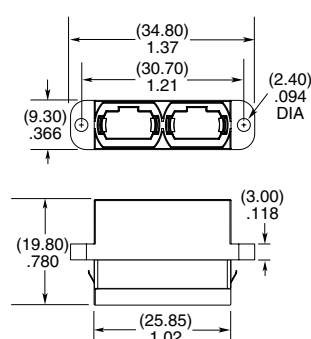
View complete specifications at: samtec.com?FOPC

OPA	PORTS	KEY	FLANGE
	-S = Single	-1 = Opposed	-F = Full
	-D = Double	-2 = Aligned	





-S



-D

SPECIFICATIONS

Compliant Specifications:
TIA-604-5-D (FOCIS 5)
IEC-61754-7

Recommended Panel Thickness:
(1.75 mm) .069"
(The OPA can be installed with any panel thickness but mounting hardware is needed for any thickness that is not (1.75 mm) .069". Contact the Optics Group at FireFly@samtec.com for questions about panel thickness and mounting hardware.)

View complete specifications at: samtec.com?OPA

Notes:
Some lengths, styles and options are non-standard, non-returnable

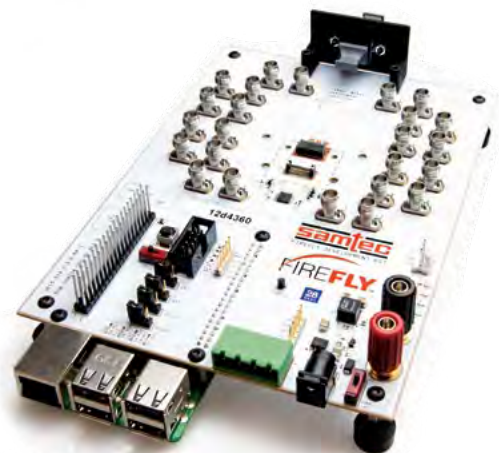


EVALUATION & DEVELOPMENT KITS

From concept and prototype to development and production, Samtec-designed and Partner-designed kits and boards featuring FireFly™ Micro Flyover System™ simplify design and reduce time to market. For more information, please visit samtec.com/kits or contact KitsAndBoards@samtec.com.

28 Gbps FireFly™ Evaluation Kit

Samtec's 28 Gbps FireFly™ Evaluation Kit offers an easy-to-use platform for testing and real-time evaluation of the FireFly™ Micro Flyover System™. The kit supports copper or optical FireFly™ in x4 or x12 configurations. (Samtec P/N: REF-209623-01)



14 Gbps FireFly™ FMC Development Kit

Samtec's 14 Gbps FireFly™ FMC Development Kit is VITA 57.1 electrically compliant and provides up to 140 Gbps full-duplex bandwidth over 10 channels from an FPGA to an industry-standard multi-mode fiber optic cable. (Samtec P/N: REF-193429-01)



25/28 Gbps FireFly™ FMC+ Development Kit

Samtec's 25/28 Gbps FireFly™ FMC+ Module is VITA 57.4 electrically compliant and provides up to 400/448 Gbps full-duplex bandwidth over 16 channels from an FPGA to an industry-standard multi-mode fiber optic cable. (Samtec P/N: REF-200772-XXX-XX-01)



25 Gbps FireFly™ FMC+ Development Kit (In development)

Samtec's 25 Gbps FireFly™ FMC+ Module is VITA 57.4 electrically compliant and provides up to 300 Gbps full-duplex bandwidth over 12 channels from an FPGA to an industry-standard multi-mode fiber optic cable.

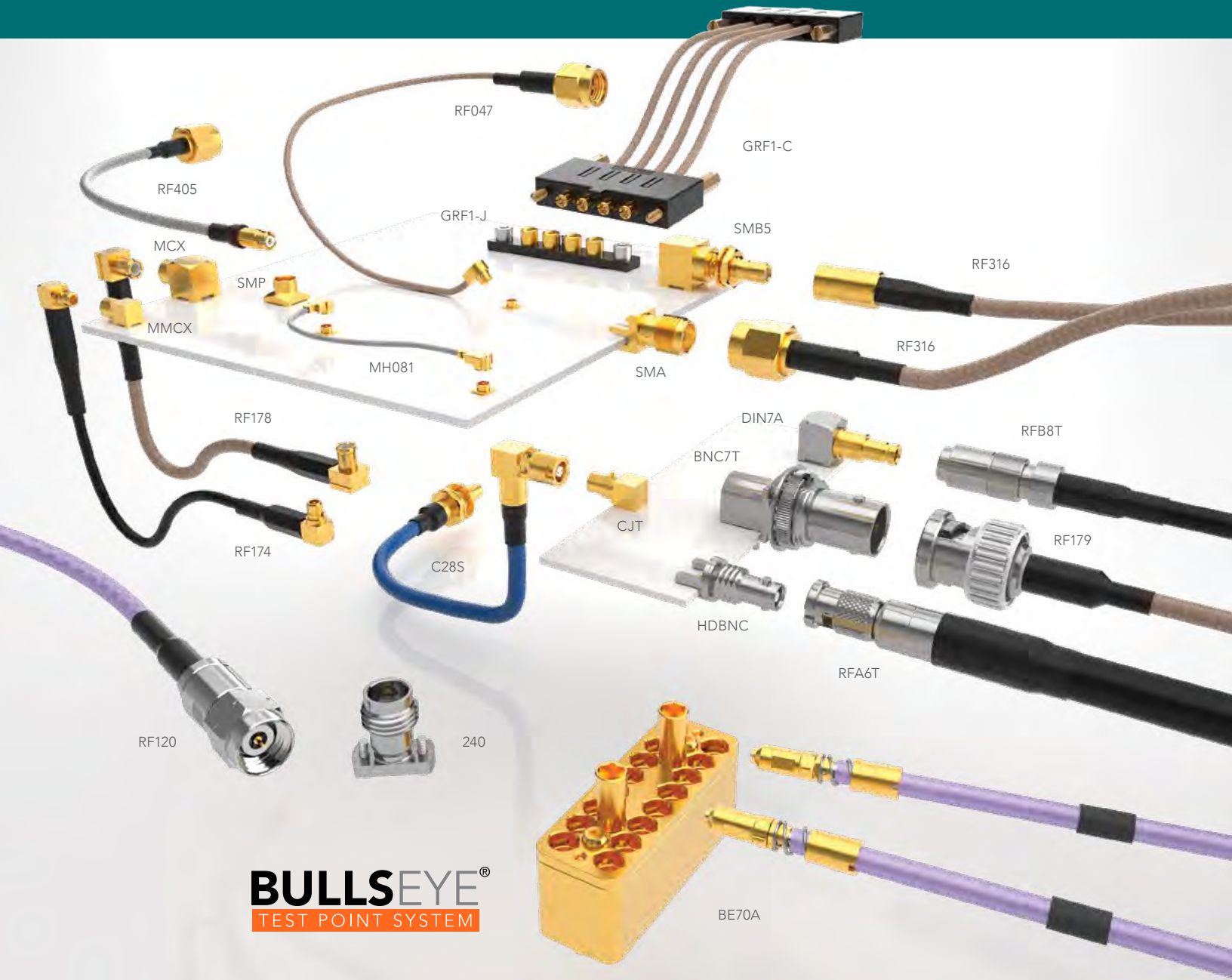
ECUE Flyover® SI Evaluation Kit

Samtec's ECUE Evaluation Kit routes eight high-speed differential pairs via UEC5-2/UCC8 series mating connectors, user-selected twinax cable lengths and 2.4 mm RF connectors. (Samtec P/N: REF-201830-XX)



RF SOLUTIONS

50 Ω & 75 Ω • PRECISION • 12G-SDI • NON-MAGNETIC • ORIGINAL SOLUTIONS



BULLSEYE®
TEST POINT SYSTEM

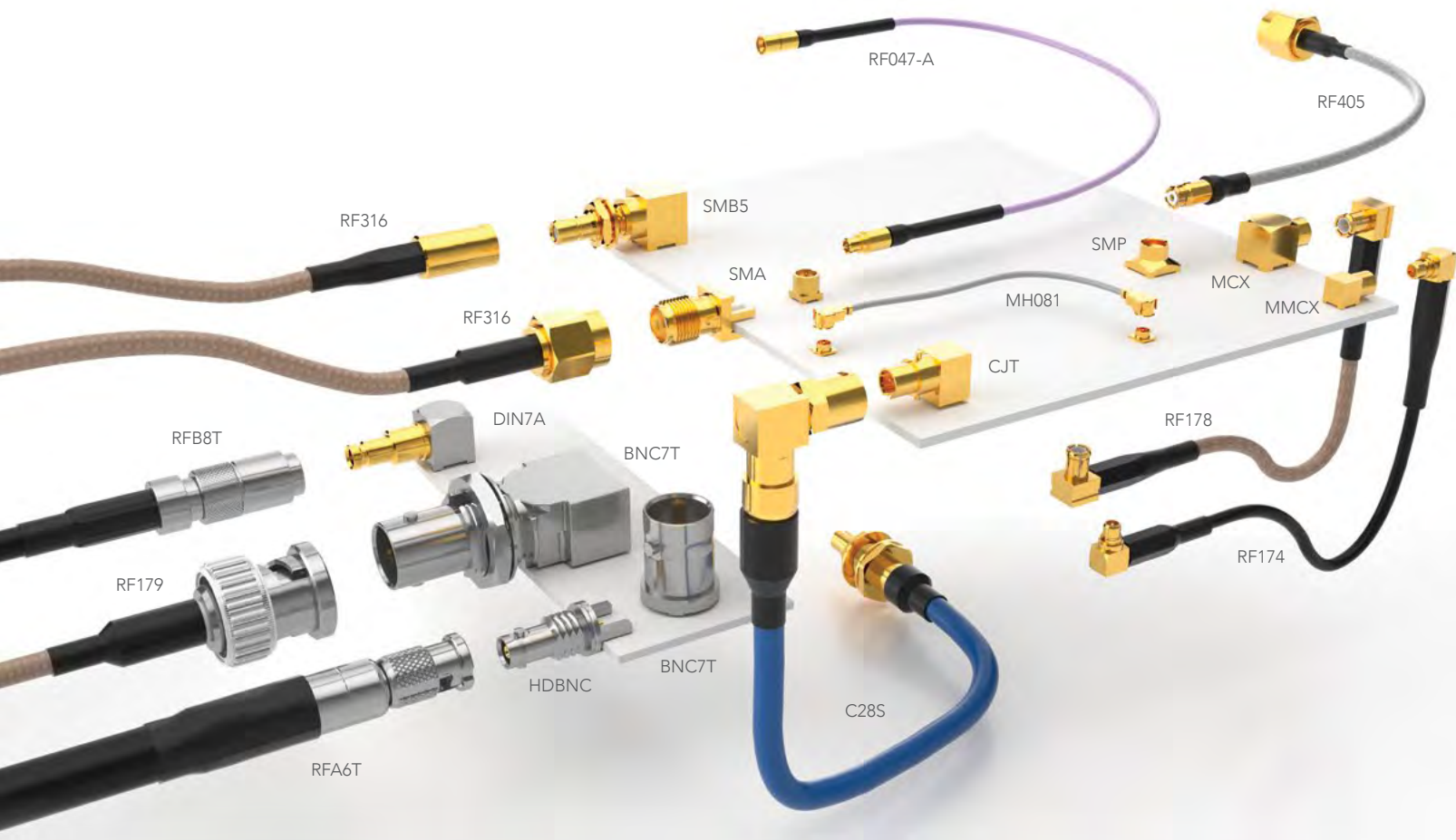
136-170

RF SOLUTIONS

50 Ω High-Frequency Precision RF (18 GHz to 110 GHz)	138-151
Bulls Eye® Test Assemblies (70 GHz).....	152-154
Ultra-Small Form Factor Waveguide Technology	155
50 Ω & 75 Ω Solutions (3 GHz to 12 GHz).....	156-168
Original RF Solutions.....	169
Custom RF Solutions.....	170

COMPLETE RF INTERCONNECT SOLUTIONS

50 Ω & 75 Ω • PRECISION • 12G-SDI • NON-MAGNETIC • ORIGINAL SOLUTIONS



FULL LINE RF CABLE ASSEMBLIES & CONNECTORS

As a manufacturer of a broad line of electronic interconnects, Samtec offers full RF solution capabilities. In addition to high-frequency precision RF and high-performance test systems, Samtec's full line includes:

- Micro High-Frequency U.FL and W.FL
- 50 Ω and 75 Ω cable assemblies, cable connectors and board level interconnects
- Ganged and high isolation cable systems
- 100 Ω shielded twisted pair cable assemblies
- Micro-mini interconnects
- Non-magnetic RF solutions
- High-frequency, precision (18 GHz to 110 GHz)

Samtec is the service leader in the industry with the resources and willingness to provide technical support for launch optimization, simulation and test & measurement. Visit [samtec.com/RF](https://www.samtec.com/RF) for additional information.

50 Ω RF CABLES & CONNECTORS

- High-frequency cables: semi-flexible, solid, foamed or air enhanced dielectric
- Variety of straight and right-angle jacks, plugs and bulkhead jacks
- Double-shielded RG 316 cable
- Micro high-frequency U.FL/W.FL assemblies
- Wide variety of industry standard cables with mix & match cable connectors
- Precision interconnects supporting frequencies from 18 to 110 GHz



NON-MAGNETIC RF SOLUTIONS

- Truly non-magnetic RF solutions; 100% inspected for magnetic permeability
- Nearly all Samtec interconnects can be ordered as non-magnetic
- Supported by Samtec's quick-turn lead times and unmatched service
- Ideal for medical imaging, advanced driver assistance systems, hand held devices, etc.
- Contact RFGroup@samtec.com



75 Ω RF CABLES & CONNECTORS

- Wide variety of industry standard cables with mix & match cable connectors
- Low-Profile BNC with Pick & Place capability, optimized for high volume manufacturing
- RFB8T Series (with Belden 1855A cable)
- Wide variety of terminations: BNC, HD-BNC™, DIN 1.0/2.3, SMB
- Straight and right-angle, die cast options
- 12G-SDI optimized 75 Ω interconnects

HD-BNC™ is a trademark of Amphenol.



12G-SDI BROADCAST VIDEO SOLUTIONS

- Samtec has the largest variety of 12G-SDI optimized products
- Analysis and launch optimization: RFGroup@samtec.com
- 75 Ω BNC, HD-BNC™ and DIN 1.0/2.3
- Right-angle, vertical, edge mount, low-profile and standard or tall through-hole
- For additional details, please visit: samtec.com/12gsdi



SAMTEC ORIGINAL SOLUTIONS

- High vibration and 75 Ω MMCX
- Ganged micro-miniature high-performance RF cable assemblies with rugged contacts
- Circular RF shielded twisted pair system
- IsoRate® cost-efficient high-performance isolated signal systems
- Machined U.FL to 500 cycles



PRECISION RF

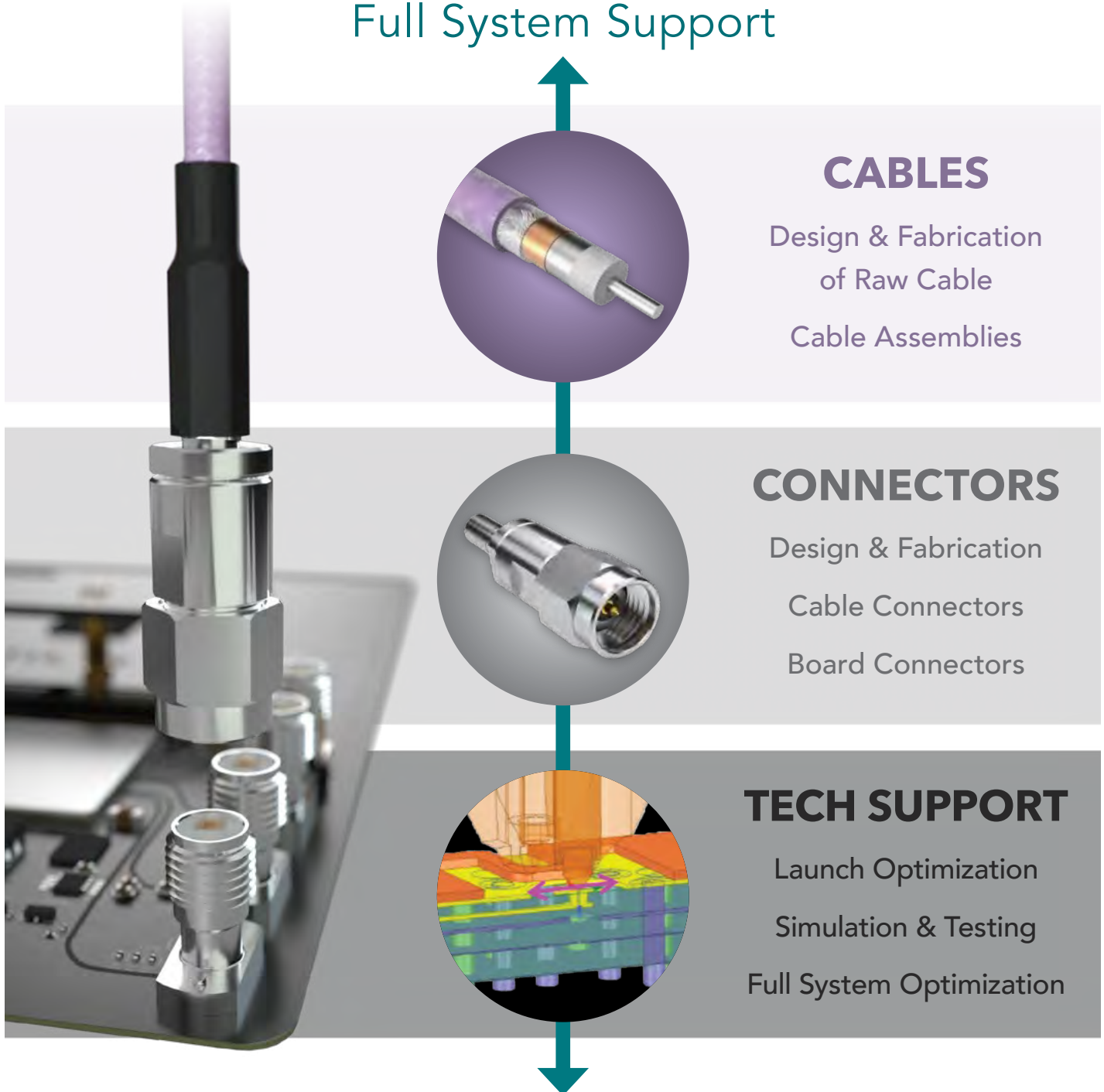
MICROWAVE / MILLIMETER WAVE CABLE ASSEMBLIES & INTERCONNECTS

The Samtec RF product line includes 18 to 110 GHz High-Frequency, Precision RF solutions for microwave and mmWave applications, including full cable assemblies, cable connectors and board level interconnects. Our focus is on delivering high-quality RF products that meet precision and performance expectations, blended with industry-leading system-level signal integrity expertise.

Vertical Integration

=

Full System Support



50 Ω μ WAVE/mmWAVE CABLES



STANDARD OFF-THE-SHELF ASSEMBLIES

TYPE		MWC-2550-01	MWC-2350-01	MWC-2350CU-01	MWC-19550-FCU-01	RG 405 (.086")	RG 402 (.141")	.047 Low-Loss Flexible	.085 Low-Loss Flexible	.086 Low-Loss Flexible	.178 Low-Loss Flexible	.277 Low-Loss Flexible
												
ELECTRICAL												
Max. Frequency (GHz)		40	35	50	45	20	20	65	50	65	27	18
Max. Insertion Loss (dB/m)	1 GHz	0.79	0.72	0.68	0.43	0.72	0.40	1.21	0.69	0.65	0.27	0.17
	26 GHz	3.80 @ 20 GHz	3.71 @ 20 GHz	4.27	2.78	4.26 @ 20 GHz	2.30 @ 20 GHz	7.43	4.28	3.90	1.23 @ 18 GHz	0.79 @ 18 GHz
	40 GHz	—	—	5.59	3.66	—	—	9.68	5.59	5.06	—	—
	50 GHz	—	—	6.46	—	—	—	11.14	6.47	5.81	—	—
Propagation Delay (ns/m)		4.76	4.72	4.76	4.12	4.79	4.79	4.76	4.75	4.20	4.17	4.02
Velocity of Propagation		70%			81%	70%	70%			80%		83%
Capacitance (pF/m)		96.80	95.45	97.80	82.39	104.97	98.07	95.00	88.2	83.37	82.00	
CONSTRUCTION												
Center Conductor		Solid Silver Plated Copper										
Dielectric		FEP			Foam Fluoro-polymer	PTFE		PFA	Solid PTFE	Foam Fluoro-polymer	PTFE Tape	
Shield		1) Ag Plated Cu 2) Ag Plated Cu		1) Ag Plated Cu 2) Cu Tape 3) Ag Plated Cu	1) Ag Plated Cu 2) Ag Plated Cu	Tinned Cu		1) Ag Plated Cu 2) Ag Plated Cu	Spiral Strip Ag Plated Cu	1) Ag Plated Cu 2) Ag Plated Cu	1) Flat Ag Plated Cu 2) Al Polyester 3) Round Ag Plated Cu	
Jacket		FEP				—	—	FEP				
MECHANICAL												
Operating Temp		-40° C to 200° C		-65° C to 125° C	-65° C to 150° C	-40° C to 125° C	-40° C to 125° C	-65° C to 150° C	-55° C to 200° C	-65° C to 150° C	-55° C to 200° C	
Min. Bend Radius		9.00 mm	12.00 mm	6.00 mm	12.50 mm	6.00 mm	10.90 mm	5.00 mm	13.20 mm	8.90 mm	24.80 mm	38.10 mm
Connector Options		SMA, SMP	3.50 mm	2.92 mm, 2.40 mm, SMPM	2.92 mm, 2.40 mm	SMA, SMP	SMA	1.35 mm, 1.85 mm, 2.40 mm, 2.92 mm, SMPM	2.92 mm, 2.40 mm	1.85 mm, 2.40 mm, 2.92 mm, SMPM	SMA, TNCA, N Type	SMA, TNCA, N Type
PART NUMBER												
Series		RF25S	RF23S	RF23C	RF120	RF405	RF402	RF047-A	RF085	RF086	RF180	RF280

*Shown at ~1/2 scale. ** Shown at 1/3 scale.

samtec.com/PrecisionRF

Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec's specifications which are subject to change without notice.

1.00 mm TO 110 GHz

1.00 mm Cable Connectors PRF10



CONNECTORS FOR INDUSTRY STANDARD CABLES

PRF10-J-C-VP-047D-SS	.047, semi-rigid
PRF10-P-C-VP-047D-SS	.047, semi-rigid

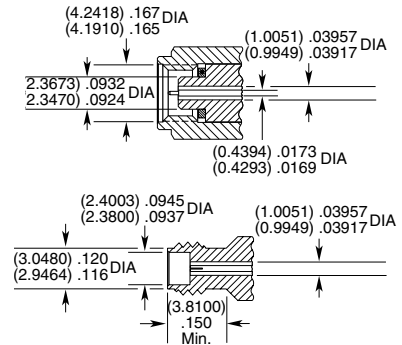
J-C = Cable Jack

P-C = Cable Plug

VP = Plating (75 μ" Gold center contact, passivated outer contact)

SS = Straight, Solder Clamp

INTERFACE STANDARD



1.35 mm TO 90 GHz

1.35 mm Cable Assemblies RF047-A



SERIES

RF047-A
= (1.2 mm) .047" overshield DIA
29 AWG millimeter wave cable

END 1 CONNECTOR

-13SJ
= 1.35 mm Straight Jack

-13SP
= 1.35 mm Straight Plug

END 2 CONNECTOR

OVERALL LENGTH

-"XXXX"
= Overall Length in
millimeters

-0100 (0100 mm) 3.94"
minimum

ALSO AVAILABLE

1.85 mm, 2.40 mm, 2.92 mm, SMPM = RF047-A

VSWR

Contact Samtec

1.35 mm Cable Connectors PRF13



CONNECTORS FOR INDUSTRY STANDARD CABLES

PRF13-P-C-VP-047A-SS	.047 Temp-Flex, low loss flexible, 29 AWG
PRF13-J-C-VP-047A-BS	.047 Temp-Flex, low loss flexible, 29 AWG

P-C = Cable Plug

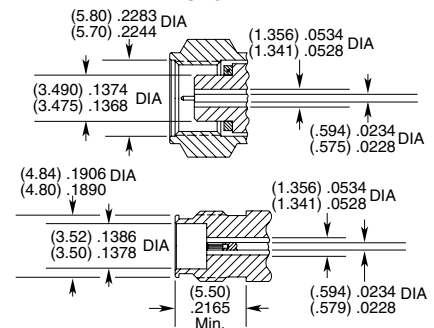
J-C = Cable Jack

VP = Plating (75 μ" Gold center contact, passivated outer contact)

SS = Straight, Solder Clamp

BS = Bulkhead, Solder Clamp

INTERFACE STANDARD



1.35 mm Board Connectors 135

Cable Mates:
RF047-A



135

GENDER

-J
= Jack

TYPE

-P
= PCB
Mount

PLATING

-VP
= Plating
(75 μ" gold
center contact,
passivated
outer contact)

ORIENTATION

-ST
= Straight

TERMINATION

-CM
= Compression
Mount

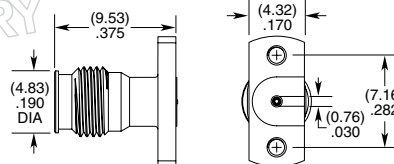
-CMM
= Compression
Mount Microstrip

OPTION

-1
= Without
screws

-2
= With
screws

PRELIMINARY



1.85 mm TO 65 GHz

1.85 mm Cable Assemblies RF047-A, RF086



VSWR

RF047-A: 1.40 max.
RF086: 1.40 max.

SERIES	END 1 CONNECTOR	END 2 CONNECTOR	OVERALL LENGTH
RF047-A = (1.2 mm) .047" overshield DIA 29 AWG millimeter wave cable RF086 = (2.18 mm) .086" overshield DIA 23 AWG millimeter wave cable	-18SJ = 1.85 mm Straight Jack -18SP = 1.85 mm Straight Plug		- "XXXX" = Overall Length in millimeters -0100 (0100 mm) 3.94" minimum
ALSO AVAILABLE 2.40 mm, SMPM, 2.92 mm = RF086 1.35 mm, 2.40 mm, SMPM, 2.92 mm = RF047-A			

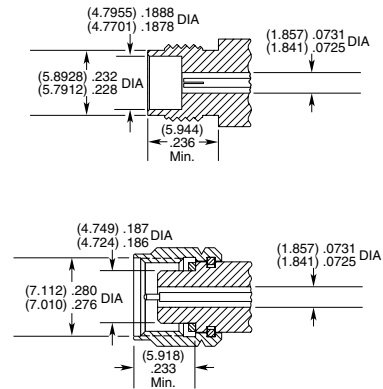
1.85 mm Cable Connectors PRF18



CONNECTORS FOR INDUSTRY STANDARD CABLES	
PRF18-J-C-EP-047D-SS	.047, semi-rigid
PRF18-P-C-EP-047D-SS	.047, semi-rigid
PRF18-J-C-EP-086-SS	.086 Temp-Flex, low loss flexible
PRF18-P-C-EP-086-SS	.086 Temp-Flex, low loss flexible
PRF18-J-C-EE-405-SD	RG 405, .085, semi-rigid
PRF18-J-C-EP-085-BS	Harbour SS405, flexible alternative to RG 405
PRF18-P-C-EE-085-SD	Harbour SS405, flexible alternative to RG 405
PRF18-P-C-EP-085-SS	Harbour SS405, flexible alternative to RG 405
PRF18-P-C-EP-047A-SS	.047 Temp-Flex, low loss flexible, 29 AWG
PRF18-J-C-EP-047A-SS	.047 Temp-Flex, low loss flexible, 29 AWG

P-C = Cable Plug
J-C = Cable Jack
EE = Plating (50 µ" gold center contact, & outer contact)
EP = Plating (50 µ" gold center contact, passivated outer contact)
SS = Straight, Solder Clamp
SD = Straight, Direct Solder
BS = Bulkhead, Solder Clamp

INTERFACE STANDARD

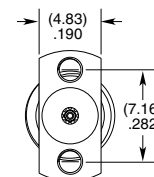
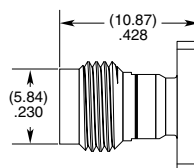


1.85 mm Board Connectors 185

Cable Mates:
RF047-A, RF086



185	GENDER	TYPE	PLATING	ORIENTATION	TERMINATION	OPTION
	-J = Jack	-P = PCB Mount	-EP = 50 µ" (1.27 µm) Gold center contact, Passivated outer contact	-ST = Straight	-CM = Compression Mount Stripline -CMM = Compression Mount Microstrip	-1 = Without Screws -2 = With Screws



2.40 mm TO 50 GHz

2.40 mm Cable Assemblies

RF047-A, RF085, RF086, RF23C, RF120



VSWR

RF047-A: 1.35 max.
RF086: 1.40 max.
RF085: 1.40 max.
RF23C: 1.40 max.
RF120: 1.40 max.

SERIES

RF047-A

(1.2 mm) .047" overshield DIA 29 AWG millimeter wave cable

RF086

= (2.18 mm) .086" overshield DIA 23 AWG millimeter wave cable

RF085

= (2.16 mm) .085" overshield DIA 24 AWG millimeter wave cable

RF23C

= MWC-2350CU-01 millimeter wave cable with copper foil shield

RF120

= MWC-19550-FCU-01 19 AWG millimeter wave cable

END 1 CONNECTOR

-24SJ

= 2.40 mm Straight Jack

-24SP

= 2.40 mm Straight Plug

END 2 CONNECTOR

OVERALL LENGTH

- "XXXX"

= Overall Length in millimeters

-0100 (100 mm) 3.94" minimum (RF047-A, RF085, RF086, RF120)

-0152 (0152 mm) 5.984" minimum (RF23C)

ALSO AVAILABLE

1.35 mm, 1.85 mm, 2.92 mm, SMPM = RF047-A

1.85 mm, 2.92 mm, SMPM = RF086

2.92 mm = RF085

2.92 mm, SMPM = RF23C

2.92 mm = RF120

2.40 mm Cable Connectors

PRF24



CONNECTORS FOR INDUSTRY STANDARD CABLES

PRF24-J-C-EP-085-SS	Harbour SS405, flexible alternative to RG 405
PRF24-J-C-EP-405-BS	RG 405, .085, semi-rigid
PRF24-P-C-EE-085-SD	Harbour SS405, flexible alternative to RG 405
PRF24-P-C-EP-120A-SS	Semflex HP120, low loss flexible
PRF24-J-C-EP-160-SS	Semflex HP160, low loss flexible
PRF24-P-C-EP-160-SS	Semflex HP160, low loss flexible
PRF24-J-C-EP-140B-SS	IW 1401, low loss flexible
PRF24-P-C-EP-140B-SS	IW 1401, low loss flexible
PRF24-J-C-EP-150B-SS	IW 1501, low loss flexible
PRF24-J-C-EP-150-SS	Dynawave DF150, low loss flexible
PRR24-J-C-EP-086-SS	.086 Temp-flex, low loss flexible
PRF24-P-C-EP-086-SS	.086 Temp-flex, low loss flexible

P-C = Cable Plug

J-C = Cable Jack

EE = Plating (50 μ" gold center contact & outer contact)

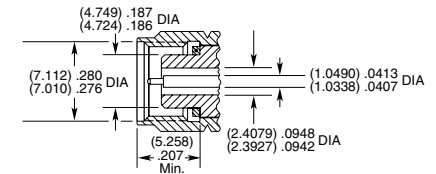
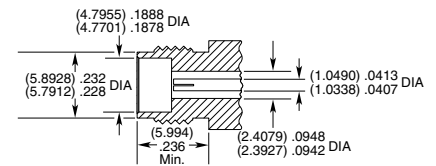
EP = Plating (50 μ" gold center contact, passivated outer contact)

SS = Straight, Solder Clamp

SD = Straight, Direct Solder

BS = Bulkhead, Solder Clamp

INTERFACE STANDARD



2.40 mm Board Connectors

240

Cable Mates:

RF047-A, RF086, RF085, RF23C, RF120



240

GENDER

-J

= Jack

TYPE

-P

= PCB Mount

PLATING

-EP

= 50 μ" (1.27 μm) Gold center contact, Passivated outer contact

ORIENTATION

-ST

= Straight

TERMINATION

-CM

= Compression Mount Stripline

-CMM

= Compression Mount Microstrip

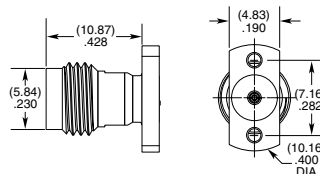
OPTION

-1

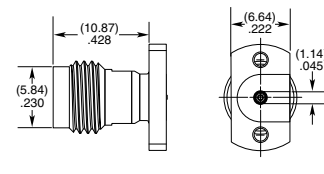
= without Screws

-2

= With Screws



-CM SHOWN



-CMM SHOWN

2.92 mm TO 40 GHz

2.92 mm Cable Assemblies

RF047-A, RF086, RF085, RF23C, RF120



VSWR

RF047-A: 1.35 max.
RF086: 1.40 max.
RF085: 1.40 max.
RF23C: 1.40 max.
RF120: 1.40 max.

SERIES

RF047-A

= (1.2 mm) .047" overshield DIA
 29 AWG millimeter wave cable

RF086

= (2.18 mm) .086" overshield DIA
 23 AWG millimeter wave cable

RF085

= (2.16 mm) .085" overshield DIA
 24 AWG millimeter wave cable

RF23C

= MWC-2350CU-01 millimeter wave
 cable with copper foil shield

RF120

= MWC-19550-FCU-01 19 AWG
 millimeter wave cable

END 1 CONNECTOR

-92SJ

= 2.92 mm Straight Jack

-92SP

= 2.92 mm Straight Plug

END 2 CONNECTOR

OVERALL LENGTH

- "XXXX"

= Overall Length in
 millimeters

-0100 (100 mm) 3.94"
 minimum (RF047-A, RF085,
 RF086, RF120)

-0152 (0152 mm) 5.984"
 minimum (RF23C)

ALSO AVAILABLE

1.35 mm, 1.85 mm, 2.40 mm, SMPM = RF047-A

1.85 mm, 2.40 mm, SMPM = RF086

2.40 mm = RF085

2.40 mm, SMPM = RF23C

2.40 mm = RF120

2.92 mm Cable Connectors

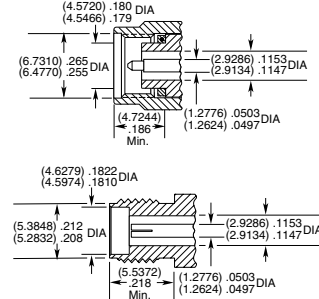
PRF92



CONNECTORS FOR INDUSTRY STANDARD CABLES

PRF92-P-C-EE-405-SD	RG 405, .085, semi-rigid
PRF92-P-C-EE-085A-SD	.085, semi-rigid, 23AWG
PRF92-P-C-EP-160-SS	Semflex HP160, low loss flexible
PRF92-P-C-EP-150B-SS	IW 1501, low loss flexible
PRF92-P-C-EP-142-SS	Harbour LL142, low loss flexible
PRF92-J-C-EP-085-SS	Harbour SS405, flexible alternative to RG 405
PRF92-J-C-EP-085-BS	Harbour SS405, flexible alternative to RG 405
PRF92-P-C-EP-085-SS	Harbour SS405, flexible alternative to RG 405
PRF92-P-C-EE-402-SD	RG 402, .141, semi-rigid
PRF92-P-C-EP-190-SS	Semflex HP190, low loss flexible
PRF92-J-C-EP-160-SS	Semflex HP160, low loss flexible
PRF92-P-C-EP-120A-SS	Semflex HP120, low loss flexible
PRF92-P-C-EP-140-SS	Dynawave DF140, low loss flexible
PRF92-P-C-EP-047D-SS	.047, semi-rigid
PRF92-J-C-EP-047D-SS	.047, semi-rigid
PRF92-P-C-EP-150-SS	Dynawave DF150, low loss flexible
PRF92-P-C-EE-118-SD	Haverhill HC35004, .118, semi-rigid
PRF92-J-C-EP-402-SS	RG 402, .141, semi-rigid
PRF92-J-C-EP-047D-4S	.047, semi-rigid
PRF92-J-C-EP-405-4S	RG 405, .085, semi-rigid
PRF92-P-C-EE-405-SD	RG 405, .085, semi-rigid
PRF92-P-C-EP-086-SS	.086 Temp-Flex, low loss flexible
PRF92-P-C-EP-200-SS	Times Max Gain 200, low loss flexible

INTERFACE STANDARD



P-C = Cable Plug

J-P = Cable Jack

EE = Plating (50 μ" Gold center contact & outer contact)

EP = Plating (50 μ" Gold center contact, passivated outer contact)

SS = Straight, Solder Clamp

SD = Straight, Direct Solder

BS = Bulkhead, Solder Clamp

4S = 4-hole flange, Solder Clamp

2.92 mm Board Connectors

292

Cable Mates:

RF047-A, RF085, RF086, RF23C, RF120



292

GENDER

-J

= Jack

TYPE

-P

= PCB
 Mount

PLATING

-HP

= 30 μ" (0.76 μm)
 Gold center contact,
 Passivated outer contact

ORIENTATION

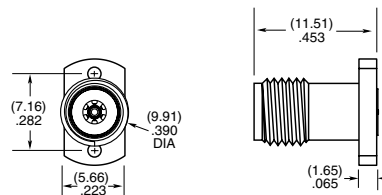
-ST

= Straight

TERMINATION

-CM2

= Compression
 Mount



3.50 mm TO 34 GHz

3.50 mm Cable Assemblies RF23S



VSWR

RF23S: 1.30 max

SERIES

RF23S

= MWC-2350-01 microwave cable with 23 AWG solid FEP Dielectric

END 1 CONNECTOR

-35SJP

= 3.50 mm Straight Jack

-35SPP

= 3.50 mm Straight Plug

END 2 CONNECTOR

OVERALL LENGTH

-"XXXX"

= Overall Length in millimeters

-0100 (100 mm) 3.94" min.

3.50 mm Cable Connectors PRF35



CONNECTORS FOR INDUSTRY STANDARD CABLES

PRF35-P-C-EP-405-SS	RG 405, .085, semi-rigid
PRF35-J-C-EP-402-SS	RG 402, .141, semi-rigid
PRF35-J-C-EP-402-BS	RG 402, .141, semi-rigid
PRF35-P-C-EP-402-SS	RG 402, .141, semi-rigid
PRF35-P-C-EP-120A-SS	Semflex HP120, low loss flexible
PRF35-J-C-EP-160-SS	Semflex HP160, low loss flexible
PRF35-P-C-EP-160-SS	Semflex HP160, low loss flexible

P-C = Cable Plug

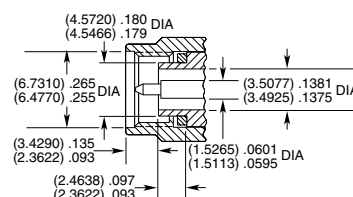
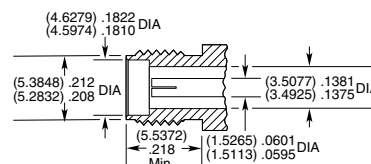
J-C = Cable Jack

EP = Plating (50 μ" Gold center contact, passivated outer contact)

SS = Straight, Solder Clamp

BS = Bulkhead, Solder Clamp

INTERFACE STANDARD



SSMA TO 34 GHz

SSMA Cable Connectors PRFS1



CONNECTORS FOR INDUSTRY STANDARD CABLES

PRFS1-J-C-EE-405-BD	RG 405, .085, semi-rigid
PRFS1-P-C-EE-405-SD	RG 405, .085, semi-rigid
PRFS1-P-C-EP-141A-SS	Harbour SS402, flexible alternative to RG 402

P-C = Cable Plug

J-C = Cable Jack

EE = Plating (50 μ" Gold center contact & outer contact)

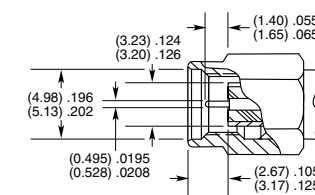
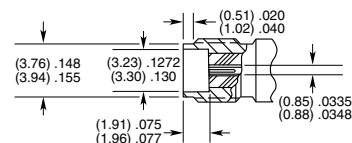
EP = Plating (50 μ" Gold center contact, passivated outer contact)

SS = Straight, Solder Clamp

SD = Straight, Direct Solder

BD = Bulkhead, Direct Solder

INTERFACE STANDARD



SMA TO 18 GHz

SMA Cable Assemblies

RF25S, RF402, RF405, RF180, RF280



VSWR

RF25S: 1.60 max.
RF402: 1.50 max.
RF405: 1.35 max.
RF180: 1.35 max.
RF280: 1.35 max.

Additional connector options available.
 Contact RFGroup@samtec.com

SERIES	END 1 CONNECTOR	END 2 CONNECTOR	OVERALL LENGTH
RF25S = MWC-2550-01 microwave cable with 25 AWG solid FEP dielectric	-01SP1* = SMA Straight Plug		-“XXXX” = Overall Length in millimeters
RF402 = RG 402 (.141") 19 AWG semi-flexible microwave cable	-01RP1* = SMA Right-angle Plug (RF25S not available)		-0100 (100 mm) 3.94" minimum
RF405 = RG 405 (.086") 24 AWG semi-flexible microwave cable	-01BJ1* = SMA Bulkhead Jack (RF402 & RF405 not available)		
RF180 = (4.52 mm) .178" overshield DIA, 16 AWG microwave cable	*Remove last "1" from end connector when specifying RF180 & RF280.		
RF280 = (7 mm) .277" overshield DIA, 11 AWG microwave cable			

ALSO AVAILABLE

SMP = RF25S, RF405

TNCA, N Type = RF180

TNCA, N Type = RF280

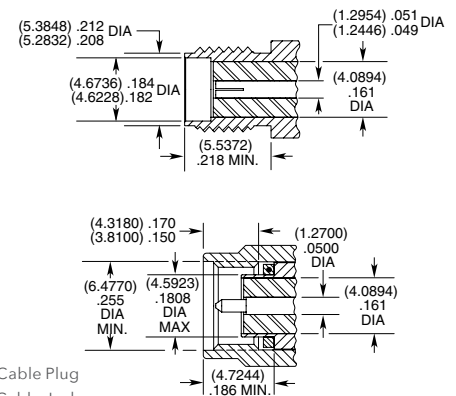
SMA Cable Connectors

PRF01



CONNECTORS FOR INDUSTRY STANDARD CABLES	
PRF01-P-C-EP-120B-SS	IW 1201, low loss flexible
PRF01-P-C-EP-120-SS	Harbour LL120, low loss flexible
PRF01-P-C-EP-142-SS	Harbour LL142, low loss flexible
PRF01-P-C-EP-190-SS	Semflex HP190, low loss flexible
PRF01-P-C-EP-335-SS	Harbour LL335, low loss flexible
PRF01-P-C-EP-290-SS	Semflex LA290, low loss flexible
PRF01-P-C-EP-142A-SS	Harbour SB142, low loss flexible
PRF01-P-C-EP-142-RS	Harbour LL142, low loss flexible
PRF01-P-C-EP-190-RS	Semflex HP190, low loss flexible
PRF01-J-C-EP-142-SS	Harbour LL142, low loss flexible
PRF01-P-C-EP-141A-SS	Harbour SS402, flexible alternative to RG 402
PRF01-P-C-EP-160-RS	Semflex HP160, low loss flexible
PRF01-P-C-EP-305-SS	Semflex HP305, low loss flexible
PRF01-P-C-EP-335A-SS	Harbour LL335i, low loss flexible
PRF01-P-C-EE-402-SD	RG 402, .141, semi-rigid
PRF01-P-C-EP-150-SS	Dynawave DF150, low loss flexible
PRF01-J-C-EE-405-SD	RG 405, .085, semi-rigid
PRF01-P-C-EE-047D-SD	.047, semi-rigid
PRF01-J-C-EE-047D-4D	.047, semi-rigid
PRF01-J-C-EE-047D-SD	.047, semi-rigid
PRF01-P-C-EP-160-SS	Semflex HP160, low loss flexible
PRF01-P-C-EE-405-SD	RG 405, .085, semi-rigid
PRF01-P-C-EP-200-SS	Times Max Gain 200, low loss flexible

INTERFACE STANDARD



P-C = Cable Plug

J-C = Cable Jack

EE = Plating (50 μ" Gold center contact & outer contact)

EP = Plating (50 μ" Gold center contact, passivated outer contact)

SS = Straight, Solder Clamp

SD = Straight, Direct Solder

RS = Right-angle, Solder Clamp

4D = 4-hole flange, Direct Solder

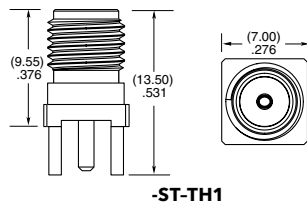
SMA Board Connectors

SMA-TH, SMA-SM, SMA-MT, SMA-EM

Cable Mates:
 RF25S, RF402, RF405, RF180, RF280



SMA	GENDER	TYPE	PLATING	ORIENTATION	TERMINATION
	-J = Jack	-P = PCB Mount	-H = 30 μ" (0.76 μm) Gold center contact, 3 μ" (0.08 μm) Gold outer contact	-ST = Straight	-TH1 = Through-hole
			-GF = 10 μ" (0.25 μm) Gold center contact, 3 μ" (0.08 μm) Gold outer contact (-SM1 only)	-RA = Right-angle	-SM1 = Surface Mount (-GF-RA only)
					-EM1 = Edge Mount (-ST only)
					-EM3 = Drop-in Edge Mount (-ST only)
					-MT1 = Mixed Technology (-ST only)



SMPM Cable Assemblies

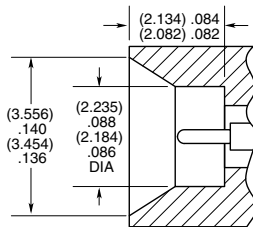


RF047-A: 1.40 max.
RF086: 1.40 max.
RF23C: 1.40 max.

SERIES	END 1 CONNECTOR	END 2 CONNECTOR	OVERALL LENGTH
RF047-A = (1.2 mm) .047" overshield DIA 29 AWG millimeter cable	-MOSP = SMPM Straight Plug, Full Detent		-"XXXX" = Overall Length in millimeters
RF086 = (2.18 mm) .086" overshield DIA 23 AWG millimeter cable	-MOSJ = SMPM Straight Jack		-0100 (0100 mm) 3.94" minimum (RF047-A, RF086)
RF23C = MWC-2350CU-01 millimeter wave cable with copper foil shield			-0152 (0152 mm) 5.984" minimum (RF23C)
ALSO AVAILABLE			
1.85 mm, 2.40 mm, 2.92 mm = RF086			
1.35 mm, 1.85 mm, 2.40 mm, 2.92 mm = RF047-A			
2.40 mm, 2.92 mm = RF23C			

CONNECTORS FOR INDUSTRY STANDARD CABLES	
PRFM0-J-C-EE-047A-BD	.047 Temp-Flex, low loss flexible, 29 AWG
PRFM0-J-C-EE-085-BD	Harbour SS405, flexible alternative to RG 405
PRFM0-J-C-EE-047A-RD	.047 Temp-Flex, low loss flexible, 29 AWG
PRFM0-J-C-EE-086-SD	.086 Temp-Flex, low loss flexible
PRFM0-J-C-EE-047B-SD	.047 Temp-Flex, low loss flexible, 28 AWG
PRFM0-P-C-HG-047A-SD	.047 Temp-Flex, low loss flexible, 29 AWG
PRFM0-J-C-HG-047A-SD	.047 Temp-Flex, low loss flexible, 29 AWG

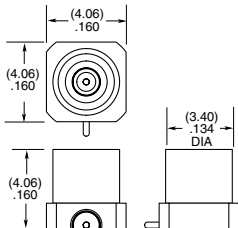
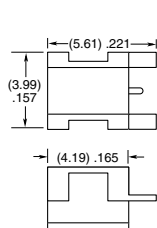
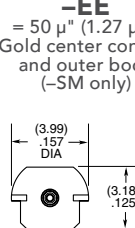
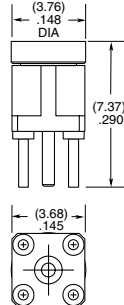
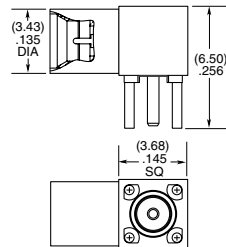
INTERFACE STANDARD (CATCHERS MITT)



P-C = Cable Plug
J-C = Cable Jack
EE = Plating (50 μ " Gold center contact, & outer contact)
HG = Plating (30 μ " Gold center contact, 10 μ " Gold outer contact)
SD = Straight, Direct Solder
BD = Bulkhead, Direct Solder
RD = Right-angle, Direct Solder

Cable Mates:
RF047-A, RF086, RF23C

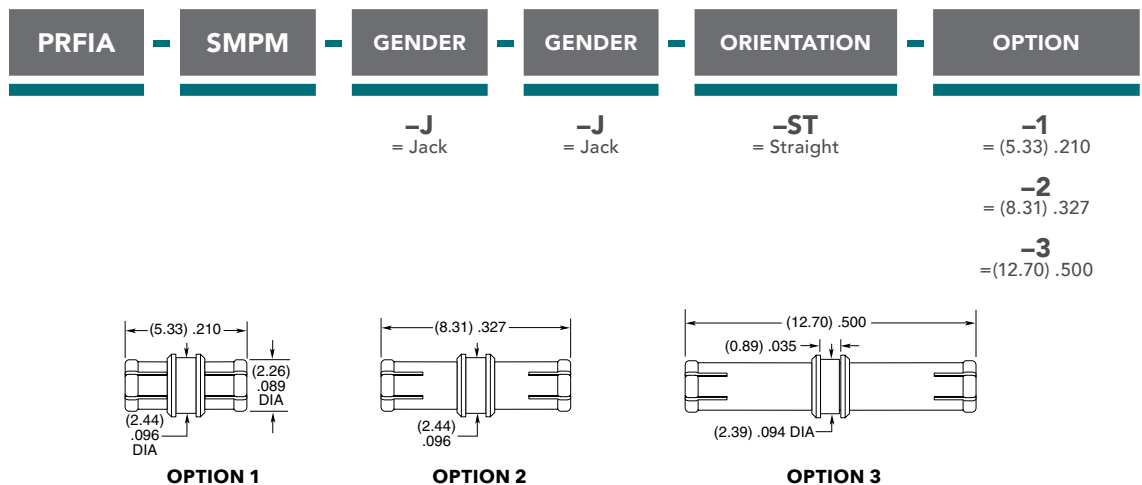


SMMP	GENDER	TYPE	PLATING	ORIENTATION	TERMINATION	1
	-PF = Full Detent -PS = Smooth Bore -PC = Catchers Mitt (-ST-TH only)	-P = PCB Mount	-HG = 30 μ" (0.76 μm) Gold center contact, 10 μ" (0.25 μm) Gold outer contact (-ST only) -HF = 30 μ" (0.76 μm) Gold center contact, 3 μ" (0.08 μm) Gold outer contact (-RA only) -EE = 50 μ" (1.27 μm) Gold center contact and outer body (-SM only)	-ST = Straight -RA = Right-angle (-TH required)	-EM = Drop-in Edge Mount (-ST only) -TH = Through-hole -SM = Surface Mount (-ST only)	
						
-ST-SM-1	-ST-EM-1	-ST-TH-1	-ST-TH-1	-RA-TH-1		

SMPM TO 65 GHz

SMPM Bullet Adaptor PRFIA

Mates With:
SMPM, GPPB



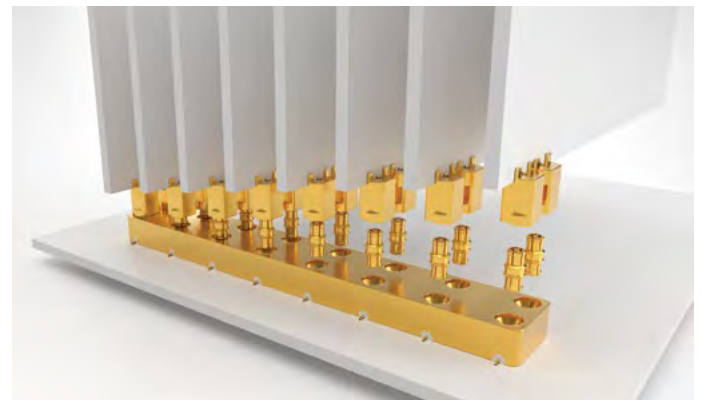
GANGED SMPM SOLUTIONS

BOARD-TO-BOARD GANGED, MULTI-POSITION SMPM BLOCKS

Series: GPPB
Mates with: PRFIA

FEATURES

- High-density, space-saving design
- 8.33 mm (.328") pitch (3.56 mm (.140") pitch in development)
- Push-on interface with varying retention forces
- Bullet adaptors enable blind mate applications accommodating axial and radial misalignment
- Board height options: 5.33 mm (.210"), 8.31 mm (.327"), 12.70 mm (.500")

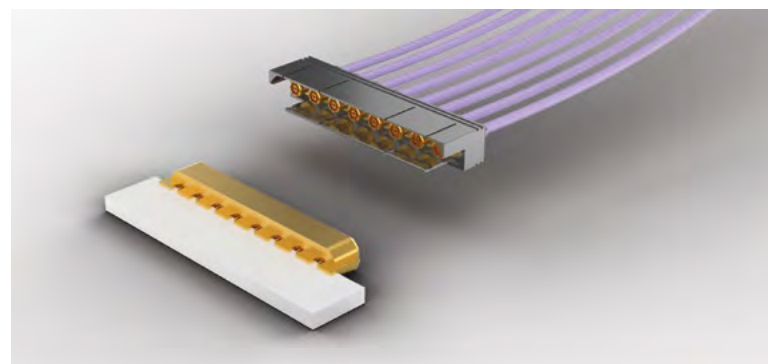


CABLE-TO-BOARD GANGED, MULTI-POSITION SMPM CABLE ASSEMBLY

Cable Assembly: GC47
Board Mate: GPPC

FEATURES

- High-density, space-saving design
- Pitch: 3.56 mm (.140")
- Push-on interface for quick installation
- .047 low-loss flexible microwave/millimeter wave cable



Applications include: 5G wireless, mmWave, military/defense, telecom, radar, test & measurement, applications that are space limited and require high operating frequency

SMP TO 40 GHz

SMP Cable Assemblies RF25S, RF405



VSWR

RF25S: Contact Samtec
RF405: Contact Samtec

SERIES

RF25S
= MWC-2550-01 microwave cable
with 25 AWG solid FEP dielectric

RF405
= RG 405 (.086") 24 AWG
semi-flexible microwave cable

END 1 CONNECTOR

-00SJ7
= SMP Straight Jack

-00RJ7
= SMP Right-angle Jack

END 2 CONNECTOR

OVERALL LENGTH

-"XXXX"
= Overall Length in
millimeters
-0100 (100 mm) 3.94"
minimum

ALSO AVAILABLE

SMA = RF25S

SMA = RF405

SMP Cable Connectors PRF00



CONNECTORS FOR INDUSTRY STANDARD CABLES

PRF00-J-C-EE-047A-RD	.047 Temp-Flex, low loss flexible, 29 AWG
PRF00-J-C-EE-085A-SD	.085, semi-rigid, 23 AWG
PRF00-PF-C-KK-047D-BD	.047, semi-rigid

J-C = Cable Jack

EE = Plating (50 μ" Gold center contact & outer contact)

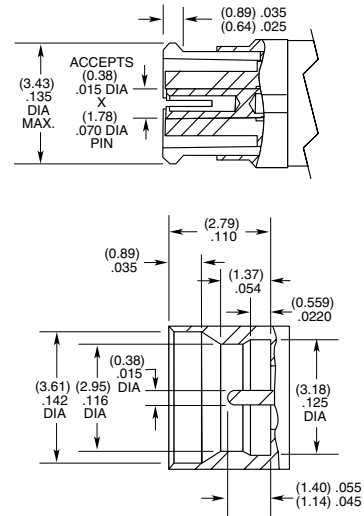
KK = Plating (100 μ" Gold over Nickel center contact, passivated outer contact)

BD = Bulkhead, Direct Solder

SD = Straight, Direct Solder

RD = Right-angle, Direct Solder

INTERFACE STANDARD (FULL DETENT)



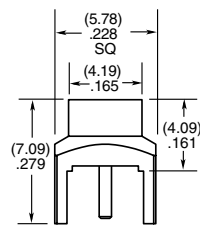
SMP TO 40 GHz

SMP Board Connectors SMP-TH, SMP-EM

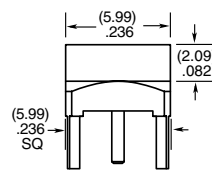
Cable Mates:
RF405, RF255



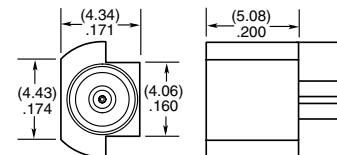
SMP	GENDER	TYPE	PLATING	ORIENTATION	TERMINATION
	-PF = Plug, Full Detent	-P = PCB Mount	-GF = 10 μ " (0.25 μ m) Gold center contact, Gold Flash outer contact (-TH2 only)	-ST = Straight	-TH2 = Through-hole
	-PL = Plug, Limited Detent				-EM3 = Drop-in Edge Mount (Not available with -PC)
	-PS = Plug, Smooth Bore		-HH = 30 μ " (0.76 μ m) Gold center and outer contact (-EM3)		
	-PC = Plug, Catcher's Mitt				



-PF/-PL/-PS-TH2



-PC-TH2

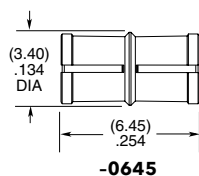


-EM3

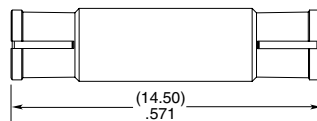
SMP Bullet Adaptor SMP-B



SMP	J	TYPE	PLATING	ORIENTATION	BULLET LENGTH
		-B = Bullet Adaptor	-GF = 10 μ " (0.25 μ m) Gold center contact, Gold Flash outer contact	-ST = Straight	-0645 = 6.45 mm (.254")
					-1450 = 14.50 mm (.571")



-0645



-1450

APPLICATION



Compensates for axial & radial misalignment

N TYPE TO 18 GHz

N Type Cable Assemblies

RF180, RF280



VSWR

RF180: 1.35 max.
RF280: 1.35 max.

SERIES	END 1 CONNECTOR	END 2 CONNECTOR	OVERALL LENGTH
RF180 = (4.52 mm) .178" overshield DIA, 16 AWG microwave cable RF280 = (7 mm) .277" overshield DIA, 11 AWG microwave cable	-06SP = N Type Straight Plug -06RP = N Type Right-angle Plug -06BJ = N Type Straight Bulkhead Jack		-"XXXX" = Overall length in millimeters -0100 (100 mm) 3.94" minimum

ALSO AVAILABLE

SMA, TNCA = RF180

SMA, TNCA = RF280

PRELIMINARY

N Type Cable Connectors

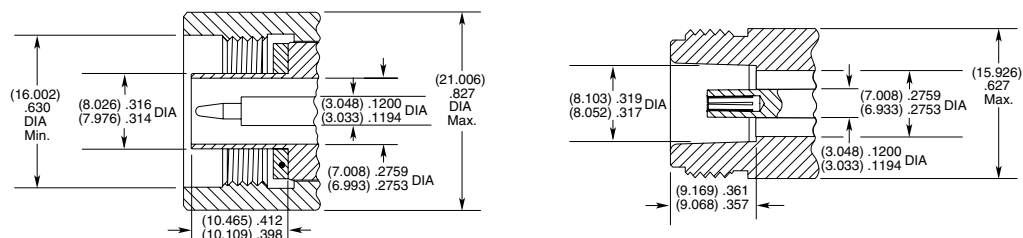
PRF06



CONNECTORS FOR INDUSTRY STANDARD CABLES	
PRF06-P-C-EP-142-SS	Harbour LL142, low loss flexible
PRF06-P-C-EP-190-SS	Semflex HP190, low loss flexible
PRF06-P-C-EP-335-SS	Harbour LL335, low loss flexible
PRF06-P-C-EP-290-SS	Semflex LA290, low loss flexible
PRF06-P-C-EP-142A-SS	Harbour SB142, low loss flexible
PRF06-P-C-EP-305-SS	Semflex HP305, low loss flexible
PRF06-P-C-EP-335-RS	Harbour LL335, low loss flexible
PRF06-J-C-EP-142-BS	Harbour LL142, low loss flexible
PRF06-J-C-EP-190-BS	Semflex HP190, low loss flexible
PRF06-P-C-EP-120A-SS	Semflex HP120, low loss flexible
PRF06-J-C-EP-402-4S	RG 402, .141, semi-rigid
PRF06-P-C-EP-142-RS	Harbour LL142, low loss flexible
PRF06-P-C-EP-190-RS	Semflex HP190, low loss flexible
PRF06-J-C-EP-290-BS	Semflex LA290, low loss flexible
PRF06-P-C-EP-141A-SS	Harbour SS402, flexible alternative to RG 402
PRF06-J-C-EP-335-BS	Harbour LL335, low loss flexible
PRF06-P-C-EP-335A-SS	Harbour LL335i, low loss flexible
PRF06-P-C-EP-290-RS	Semflex LA290, low loss flexible
PRF06-P-C-EP-300A-SS	Times Max Gain 300, low loss flexible
PRF06-P-C-EP-335A-RS	Harbour LL335i, low loss flexible
PRF06-P-C-EP-160B-SS	ATM CF-210, low loss flexible
PRF06-P-C-EP-270A-RS	Dynawave DF218, low loss flexible

P-C = Cable Plug
J-C = Cable Jack
EP = Plating (50 μ" Gold center contact, passivated outer contact)
SS = Straight, Solder Clamp
RS = Right-angle, Solder Clamp
BS = Bulkhead, Solder Clamp
4S = 4-hole Flange, Solder Clamp

INTERFACE STANDARD



TNCA TO 18 GHz

TNCA Cable Assemblies

RF180, RF280



VSWR

RF180: 1.35 max.
RF280: 1.35 max.

SERIES	END 1 CONNECTOR	END 2 CONNECTOR	OVERALL LENGTH
--------	-----------------	-----------------	----------------

RF180
= (4.52 mm) .178" overshield DIA,
16 AWG microwave cable

RF280
= (7 mm) .277" overshield DIA,
11 AWG microwave cable

-04SP
= TNCA Straight Plug

-04RP
= TNCA Right-angle Plug

-04BJ
= TNCA Straight Bulkhead Jack

-"XXXX"
= Overall length in
millimeters

-0100 (100 mm) 3.94"
minimum

ALSO AVAILABLE

SMA, N Type = RF180

SMA, N Type = RF280

PRELIMINARY

TNCA Cable Connectors

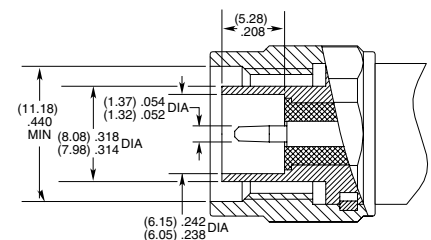
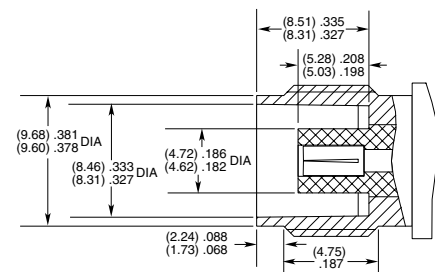
PRF04



CONNECTORS FOR INDUSTRY STANDARD CABLES	
PRF04-P-C-EP-142-RS	Harbour LL142, low loss flexible
PRF04-J-C-EP-142-BS	Harbour LL142, low loss flexible
PRF04-P-C-EP-142-SS	Harbour LL142, low loss flexible
PRF04-P-C-EP-335-SS	Harbour LL335, low loss flexible
PRF04-P-C-EP-290-SS	Semflex LA290, low loss flexible
PRF04-J-C-EP-190-BS	Semflex HP190, low loss flexible
PRF04-P-C-EP-190-RS	Semflex HP190, low loss flexible
PRF04-P-C-EP-190-SS	Semflex HP190, low loss flexible
PRF04-P-C-EP-335A-RS	Harbour LL335i, low loss flexible
PRF04-J-C-EP-335A-BS	Harbour LL335i, low loss flexible
PRF04-P-C-EP-300A-SS	Times Max Gain 300, low loss flexible
PRF04-P-C-EP-200-SS	Times Max Gain 200, low loss flexible

P-C = Cable Plug
J-C = Cable Jack
EP = Plating (50 μ" Gold center contact, passivated outer contact)
SS = Straight, Solder Clamp
RS = Right-angle, Solder Clamp
BS = Bulkhead, Solder Clamp

INTERFACE STANDARD



HIGH-PERFORMANCE TEST ASSEMBLIES TO 70 GHz

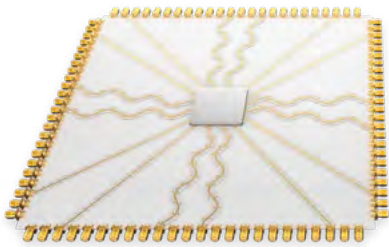
FEATURES & BENEFITS

The high-density array designs and advanced cabling solutions within Samtec's Bulls Eye® product family support test and measurement applications to 70 GHz.

- Compression interface to the board provides easy on/off and eliminates soldering costs
- High-density, space-saving design
- Enables smaller evaluation boards and shorter trace lengths
- Installation: while the attach process for each series is similar, each have unique specifications that need to be observed



Traditional with SMAs



Bulls Eye®



HIGH-DENSITY & SPACE-SAVING

Enables smaller evaluation boards and shorter trace lengths.

PRODUCT FAMILY CROSS REFERENCE GUIDE

ASSEMBLY	70 GHz	50 GHz	40 GHz	20 GHz	
End 2 Connectors	1.85 mm	2.40 mm (50 GHz)	2.92 mm (40 GHz)	2.92 mm (2 Row)	2.92 mm (4 Row)
Samtec Series	BE70A	BE40A		BDRA	BQRA
Cable Type	.086	MWC-2350CU-01		MWC-2350-01	
Cable Management	Yes				
PCB Transmission	Microstrip or Stripline			Stripline	
Design	Spring-Loaded Contact; 360° Grounding 	Pogo-Pin for Signal & Ground 	Fixed-Pin for Signal; Elastomer & Block for Ground 		
No. of Positions	2x 3, 4, 6, 8, 10, 12, 14, 16			2x 12	20
Impedance	50 Ω				
FPGA Development Kit	Xilinx® Zynq® UltraScale+™ RFSoc ZCU1275		Xilinx® Virtex® UltraScale™ FPGA VCU110		

70 GHz ASSEMBLIES

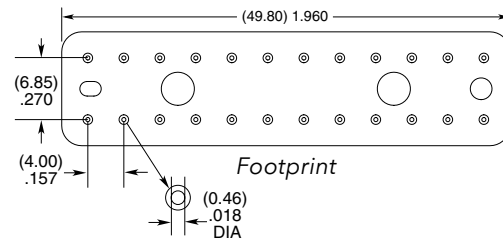
BE70A	TRANSMISSION TYPE	END 2	PHASE MATCHING	2	POSITIONS PER ROW	OVERALL LENGTH
	-S = Stripline -M = Microstrip	-18SJ = 1.85 mm Straight Jack -18SP = 1.85 mm Straight Plug	-2 = 2.0 Pico-second -5 = 5.0 Pico-second -N = No Phase Matching		-03, -04, -06, -08, -10, -12, -14, -16	-“XXXX” = Overall length in millimeters -0152 (0152 mm) 5.984" to -9999 (9999 mm) 393.7"

BE70A

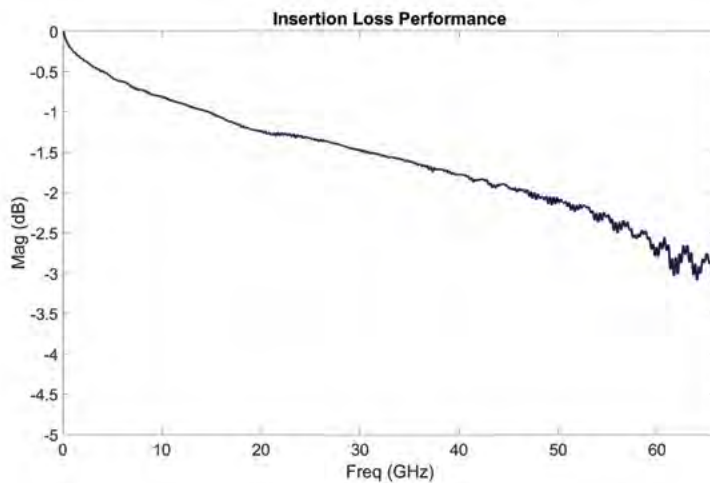
End 2 Connectors:
1.85 mm (70 GHz)



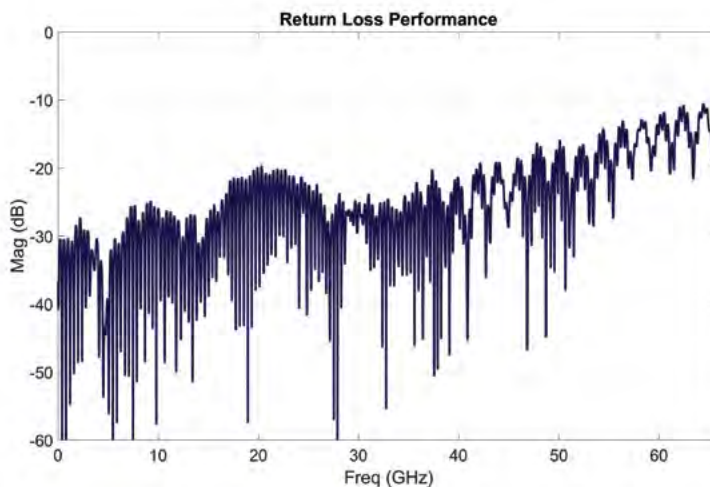
12 POSITIONS PER ROW SHOWN



BE70A, 2 X 4 FOOTPRINT, 12-INCH CABLE



~3 dB LOSS: BREAKOUT REGION + BE70A



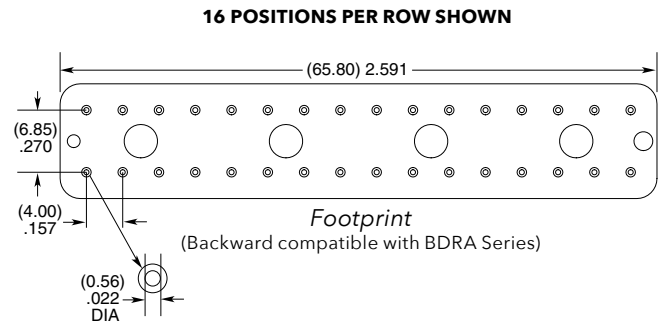
MEASURED: 1.975 mm STRIPLINE
+ BREAKOUT REGION + BE70A

50 GHz & 40 GHz ASSEMBLIES

BE40A	TRANSMISSION TYPE	END 2	PHASE MATCHING	2	POSITIONS PER ROW	OVERALL LENGTH
	-S = Stripline -M = Microstrip	-92SJ = 40 GHz, 2.92 mm Straight Plug -24SJ = 50 GHz, 2.40 mm Straight Jack -92SP = 40 GHz, 2.92 mm Straight Plug -24SP = 50 GHz, 2.40 mm Straight Plug	-2 = 2.0 Pico-second -5 = 5.0 Pico-second -N = No Phase Matching		-03, -04, -06, -08, -10, -12, -14, -16	-"XXXX" = Overall length in millimeters -0152 (0152 mm) 5.984" to -9999 (9999 mm) 393.7"

BE40A

End 2 Connectors:
2.40 mm (50 GHz)
2.92 mm (40 GHz)

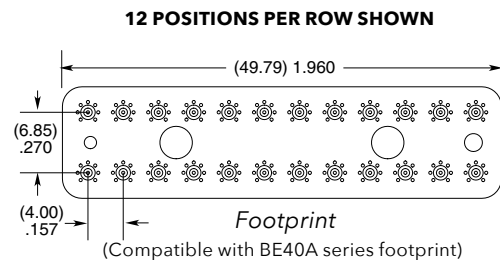
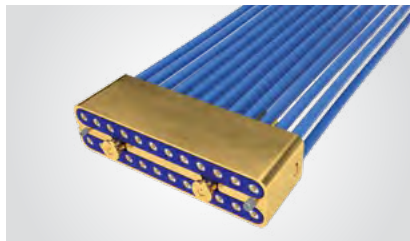


20 GHz ASSEMBLIES

BDRA	END 2	PHASE MATCHING	12	OVERALL LENGTH
	-92SJP = 2.92 mm Straight Jack -92SPP = 2.92 mm Straight Plug	-2 = 2.0 Pico-second -5 = 5.0 Pico-second -10 = 10.0 Pico-second	-12 = Number of phase matched pairs	-"XXXX" = Overall length in millimeters -0100 (100 mm) 3.94" to -9999 (9999 mm) 393.7"

BDRA

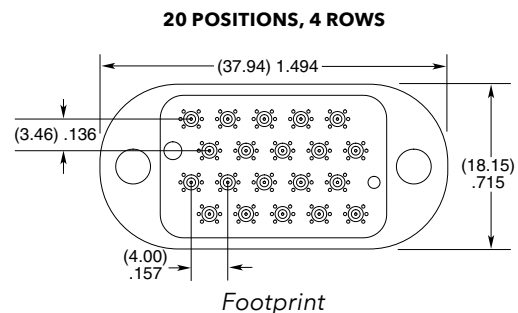
End 2 Connectors:
2.92 mm



BQRA	END 2	PHASE MATCHING	10	OVERALL LENGTH
	-92SJP = 2.92 mm Straight Jack -92SPP = 2.92 mm Straight Plug	-2 = 2.0 Pico-second -5 = 5.0 Pico-second -10 = 10.0 Pico-second	-10 = Number of phase matched pairs	-"XXXX" = Overall length in millimeters -0100 (100 mm) 3.94" to -9999 (9999 mm) 393.7"

BQRA

End 2 Connectors:
2.92 mm



NEXT GENERATION WAVEGUIDE TECHNOLOGY

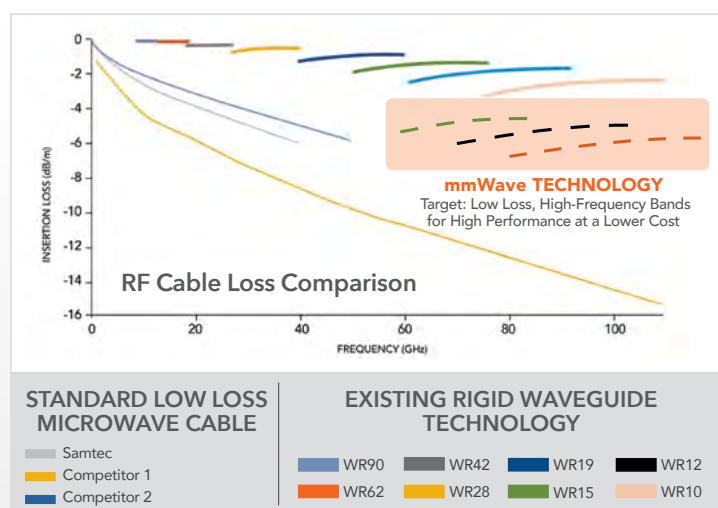
ULTRA SMALL FORM FACTOR • LOW LOSS DIELECTRIC • FLEXIBLE CABLE

To support the demands of next generation systems, Samtec is developing innovative interconnect solutions such as our new mmWave technology, which enables a high-frequency, ultra-small form factor, and highly flexible waveguide design.

Samtec High-Frequency Micro Waveguides offer high-performance at a lower overall cost than traditional metallic waveguides. Products currently in testing:

- Threaded Termination Cable and mating PCB Launch Right-Angle Connector
- In Development: Push-Pull Style Mini Termination Cable and mating PCB Launch Right-Angle Connector
- Roadmap: Low Loss Dielectric Push-Pull Mini Termination Cable and Vertical PCB Launch Connector
- Adaptors to traditional waveguide interfaces also available

Contact RFGroup@samtec.com for additional details.



Flexible Cable Construction

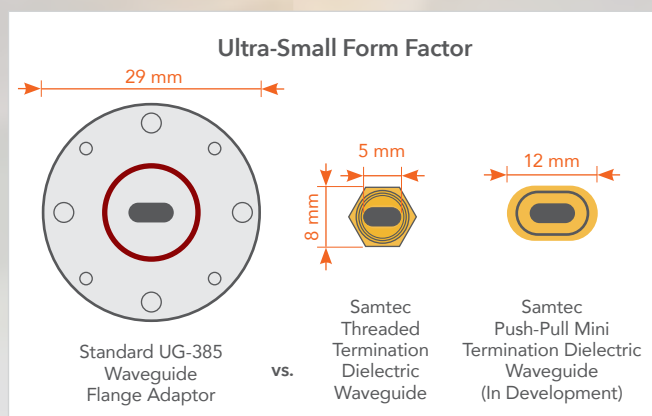


Low Loss Dielectric
(Target: 8 dB/meter)

Stripline Routing



Push-Pull Mini Termination Cable & PCB Launch Right-Angle Connector
(In Development)



LOW-FREQUENCY CABLES

STANDARD OFF-THE-SHELF ASSEMBLIES

TYPE		50 Ω CABLES						75 Ω CABLES						100 Ω CABLES
		RG 178	CTB-2650F-01	RG 174	RG 316	RG 316 DS	RG 58	RG 179	BELDEN 1855A	BELDEN 1694A	BELDEN 4855R	BELDEN 4694R	RG 6	TPS-28100-RF
ELECTRICAL														
Impedence	Ω	50 ± 2		50 ± 5	50 ± 2	50 ± 3		75 ± 3						100 ± 5
Insertion Loss (dB/m)	100 MHz	0.50	0.68	0.40	0.30	1.4 @ 2 GHz	0.20	0.30	0.12	0.07	0.12	0.06	0.07	-----
	1 GHz	1.70	2.37	1.40	1.25	1.6 @ 3 GHz	0.80	0.80	0.37	0.21	0.36	0.19	0.21	-----
	6 GHz	5.90	6.53	4.40	4.25	2.2 @ 5 GHz	5.40	3.60	0.97	0.59	0.91	0.51	0.59	-----
Propagation Delay	nS/m	4.83	4.17	5.06	4.83	-----	5.05	4.83	4.12	4.06		3.92	4.03	-----
Current Rating	Amps	3	3	5	5	-----	-----	3	5	-----	4.70	16	-----	-----
Capacitance	pF/m	96	85.6	101	96	95.8	102	64	55.7	53.14	53.40	52.20	53.14	38
CONSTRUCTION														
Center Conductor	Material	Silver Plated Copper Clad Steel	Silver Plated Copper	Bare Copper	Silver and Copper Plated Steel	Silver Plated Copper Clad Steel	Tinned Copper	Silver Plated Copper	Bare Copper		Silver Plated Copper		Bare Copper	Silver Plated Copper
	AWG	30	26	26	26	26	20	30	23	18	23	18	18	28
Dielectric	Material	PTFE	Foamed FEP	KLPE	PTFE	FEP	Solid Polyethylene	PTFE	FHDPE	FHDPE	PE (Foam)		FHDPE	FEP
Shield	Material	Silver Plated Copper		Tinned Copper	Silver Plated Copper		Tinned Copper	Silver Plated Copper	1. Al Foil-Polyester Tape-Al Foil 2. Tinned Copper	1. Bonded Al Foil 2. Al Wire	1. Al Foil-Polyester Tape-Al Foil 2. Tinned Copper		Silver Plated Copper	
Jacket	Material	FEP		PVC	FEP		PVC	FEP	PVC	PVC	PVC		PVC	PVC
	Temp Rating	-50 °C to +165 °C	-40 °C to +200 °C	-20 °C to +80 °C	-55 °C to +165 °C	-----	-50 °C to +90 °C	-50 °C to +165 °C	-30 °C to +75 °C	-30 °C to +75 °C	-30 °C to +75 °C	-20 °C to +75 °C	-30 °C to +75 °C	-20 °C to +105 °C
MECHANICAL														
Bend Radius	Min	10.2 mm	3.175 mm	25.4 mm	12.7 mm	12.8 mm	48.3 mm	10.2 mm	38.1 mm	69.85 mm	41 mm	70 mm	69.85 mm	19.05 mm
Connector Options		MMCX, MCX, SMA, SMB, BNC, TNC, N Type	IsoRate®	MMCX, MMCXV, MCX, SMA, SMB, BNC, TNC, N Type, Ganged		MMCX, MCX, SMA, BNC, TNC	SMA, TNC, N Type	MCX, MMCX7, SMB, BNC, DIN 1.0/2.3, Ganged	HD-BNC™, DIN 1.0/2.3	BNC, HD-BNC™, DIN 1.0/2.3	HD-BNC™, DIN 1.0/2.3	BNC, HD-BNC™, DIN 1.0/2.3		CJT
PART NUMBER														
Series		RF178	IJ5C	RF174	RF316, IJ5C, IJ5H, GRF1-C, GRF1H-C	RS316	RF058	RF179, GRF7-C, GRF7H-C	RFB8T	RFB6T	RFC8T	RFC6T	RFA6T	C28S

50 Ω MICRO HIGH FREQUENCY RF CABLES TO 6 GHz

MHF Cable Assemblies MH081, MH113



SPECIFICATIONS

Outer Contact Material:
Au plated Phosphor Bronze
Center Contact Material:
Au plated Phosphor Bronze (MHX)
Insulator Material:
PBT (MHX)
PTFE (SMA)
Operating Temperature:
-40 °C to +90 °C
Voltage Rating:
170 V max
Dielectric Withstanding Voltage:
200 Vrms

0.81 mm Cable:

Capacitance:
100 pF/meter
Max Attenuation (cable only):
3.1 dB @ 1 GHz
Conductor Size:
36 AWG, (0.81 mm) .032" dia.
Conductor Material:
Silver Plated Copper
Conductor Resistance:
1.40 Ωv/meter max
Insulator Diameter:
(0.4 mm) .016"
Insulator Material: FEP
Shield Material:
Silver Plated Copper
Jacket Material: PFA
Jacket Diameter:
(0.81 mm) .032" dia.
Bend Radius: 5.0 mm
Jacket Temp Rating:
-40 °C to +90 °C

1.13 mm Cable:

Capacitance:
95 pF/meter
Max Attenuation (cable only):
2 dB @ 1 GHz
Conductor Size:
32 AWG, (1.13 mm) .045" dia.
Conductor Material:
Silver Plated Copper
Conductor Resistance:
0.60 Ωv/meter max
Insulator Diameter:
(0.66 mm) .026"
Insulator Material:
FEP
Shield Material:
Tinned Copper
Jacket Material:
FEP
Jacket Diameter:
(1.13 mm) .045" dia.
Bend Radius:
6.8 mm
Jacket Temp Rating:
-40 °C to +90 °C

SERIES

MH081
= 0.81 mm Cable
MH113
= 1.13 mm Cable

END 1 CONNECTOR

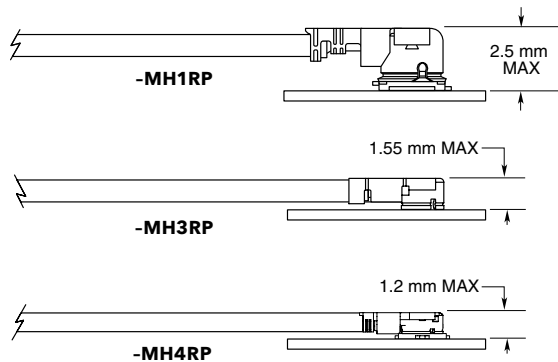
Specify END OPTIONS from chart

END 2 CONNECTOR

OVERALL LENGTH

-0030
= 1.18" (30 mm)
-0050
= 1.97" (50 mm)
-0100
= 3.94" (100 mm)
-0150
= 5.91" (150 mm)
-0300
= 11.81" (300 mm)

APPLICATION



EXTRACTION TOOLS

MH1RP = RSP-122893-01
MH3RP = RSP-122893-02
MH4RP = RSP-122893-03

MATING SOLUTIONS

MH1RP end
mates with RSP-122811-01
(Cycles: 30 max.)

MH3RP end
mates with RSP-122811-02

MH4RP
end mates with RSP-122811-03



END OPTIONS

-MH1RP = MHF1 Type Plug (3.9 μ" (0.1 μm) Gold on Center Contact, 1.9 μ" (0.05 μm) Gold on Shell)	
-MH3RP = MHF3 Type Plug (3.9 μ" (0.1 μm) Gold on Center Contact, 1.9 μ" (0.05 μm) Gold on Shell) (MH081 only)	
-MH4RP = MHF4 Type Plug (10 μ" (0.25 μm) Gold on Center Contact, 1.9 μ" (0.05 μm) Gold on Shell) (MH4RP is not available with MH1RP & MH3RP) (MH081 only)	
-01BJ1 = SMA Straight Bulkhead Jack (MH081 only) -01BJ2 = SMA Straight Bulkhead Jack, Reversed Polarity -01SB1 = SMA Straight Jack, Sealed Bulkhead -01SR1 = SMA Straight Jack, Sealed Bulkhead, Reversed Polarity (30 μ" (0.76 μm) Gold on Center Contact, Gold Flash on Shell)	
-SING = Single Ended (End 2 callout)	
XXXXXX = Stripped & Tinned (End 2 callout)	

STRIPPED & TINNED (Dimensions in mm)

CALLOUT	A	B	C
-303030	3.0	3.0	3.0
-303040	3.0	3.0	4.0
-403030	4.0	3.0	3.0
-403040	4.0	3.0	4.0
-404040	4.0	4.0	4.0

Both center conductor and braid shield are stripped, only the centerconductor is tinned.

50 Ω SMA TO 6 GHz

SMA Cable Assemblies

RF174, RF178, RF316,
RS316, RF058



SERIES	END 1 CONNECTOR	END 2 CONNECTOR	OVERALL LENGTH
RF174 = RG 174 Cable	-01SP1 = SMA Straight Plug		-“XXXX” = Overall Length in millimeters
RF178 = RG 178 Cable (-01BJ1 & -01BR1 only)	-01RP1 = SMA Right-angle Plug		-0100 (100 mm) 3.94" minimum
RF316 = RG 316 Cable, Single Braid Shield	-01BJ1 = SMA Straight Bulkhead Jack		
RS316 = RG 316 Cable, Double Shield (-01SP1 & -01BJ1 only)	-01SB1 = Straight Bulkhead Jack, Sealed		
RF058 = RG 58 Cable, (-01SP1, -01BJ1 & 01SB1 only)	-01SR1 = Straight Bulkhead Jack, Sealed, Reversed Polarity		
	-01BR1 = Straight Bulkhead Jack, Sealed, Reversed Polarity		
	-01PN1 = 4-Hole Panel Mount Jack		

ALSO AVAILABLE

50 Ω: MCX, MMCX, SMB, BNC, TNC,
N Type = RF174, RF178, RF316

50 Ω: MCX, MMCX, BNC, TNC = RS316

50 Ω: TNC = RF058

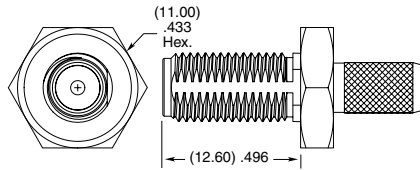
SMA Cable Connectors

SMA-CA



Supplied with pins, washers,
nuts and ferrules. See website
for dimensions.

SMA	GENDER	TYPE	PLATING	ORIENTATION	TERMINATION
	-J = Jack	-C = Cable -C4 = Cable 4-Mounting Screws (-PN1 only)	-H = 30 μ" (0.76 μm) Gold center contact, 3 μ" (0.08 μm) Gold outer contact (N/A with -BH1S) -HF = 30 μ" (0.76 μm) Gold center contact, 3 μ" (0.08 μm) Gold outer contact (-BH1S only)	-ST = Straight	-BH1 = Bulkhead RG 174 / 316 Cable -BH2 = Bulkhead RG 178 Cable -BR1 = Bulkhead RG 174 / 316, Reversed Polarity -BR2 = Bulkhead RG 178 Cable, Reversed Polarity
					-BH1S = Bulkhead RG 316 Cable, Double Shield -B10 = Bulkhead RG 58 Cable -PN1 = 4-Hole Panel Mount RG 174 / 316 Cable -S10 = Sealed Bulkhead RG 58 Cable



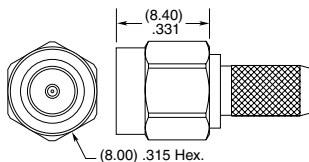
-S10, -B10



SMA Board Connectors

See page 145 for
Board Connectors

SMA	GENDER	TYPE	PLATING	ORIENTATION	TERMINATION
	-P = Plug	-C = Cable	-H = 30 μ" (0.76 μm) Gold center contact, 3 μ" (0.08 μm) Gold outer contact (-CA1, -C10 only) -HF = 30 μ" (0.76 μm) Gold center contact, 3 μ" (0.08 μm) Gold outer contact (-CA1S only)	-ST = Straight -RA = Right-angle	-CA1 = RG 174 / 316 Cable -C10 = RG 58 Cable (-ST only) -CA1S = RG 316 Double Shielded Cable (-ST only)



-ST-C10

Supplied with pins, washers, nuts and ferrules.
See website for dimensions.

50 Ω MCX TO 6 GHz

MCX Cable Assemblies

RF174, RF178, RF316, RS316



SERIES	END 1 CONNECTOR	END 2 CONNECTOR	OVERALL LENGTH
RF174 = RG 174 Cable	-02SJ1 = MCX Straight Jack		-“XXXX” = Overall Length in millimeters
RF178 = RG 178 Cable	-02RP1 = MCX Right-angle Plug (RS316 not available)		-0100 (100 mm) 3.94" minimum
RF316 = RG 316 Cable, Single Braid Shield	-02SP1 = MCX Straight Plug		
RS316 = RG 316 Cable, Double Shielded			

ALSO AVAILABLE

50 Ω: MMCX, SMA, SMB, BNC, TNC,

N Type = RF174, RF178, RF316

50 Ω: MMCX, SMA, BNC, TNC = RS316

MCX Cable Connectors

MCX-CA



Supplied with pins and ferrules.
See website for dimensions.

CONNECTORS FOR INDUSTRY STANDARD CABLES	
MCX-J-C-H-ST-CA1	RG 174/316 Cable
MCX-J-C-H-ST-CA2	RG 178 Cable
MCX-J-C-HF-ST-CA1S	RG 316 Double Shielded Cable
MCX-P-C-H-ST-CA1	RG 174/316 Cable
MCX-P-C-H-ST-CA2	RG 178 Cable
MCX-P-C-HF-ST-CA1S	RG 316 Double Shielded Cable
MCX-P-C-H-RA-CA1	RG 174/316 Cable
MCX-P-C-H-RA-CA2	RG 178 Cable

P-C = Cable Plug

J-C = Cable Jack

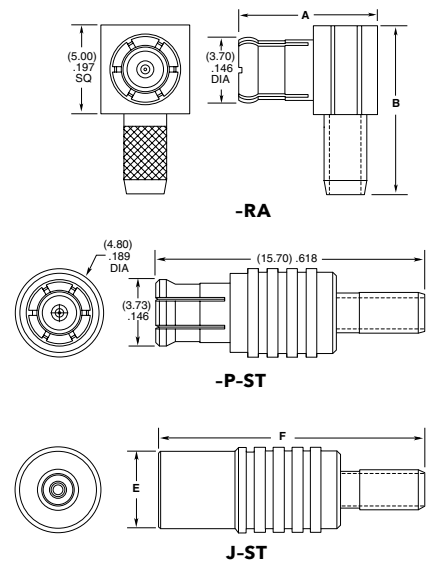
H or HF = Plating (30 μ" Gold center contact,
3 μ" Gold outer contact)

ST = Straight

RA = Right-angle

TYPE (-RA)	A	B
-P-CA1	(7.78) .306	(9.50) .374
-P-CA2	(8.58) .338	(10.00) .394

TYPE (-ST)	E	F
-J-CA1	(4.50) .177	(15.50) .610
-J-CA2	(4.78) .188	(15.00) .591
-J-CA1S	(4.50) .177	(15.50) .610



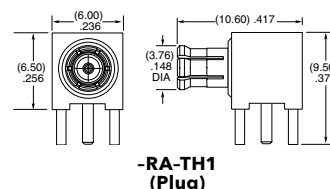
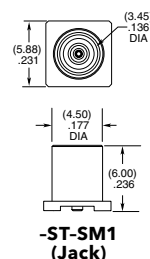
MCX Board Connectors

MCX-TH, MCX-SM, MCX-EM, MCX-MT

Cable Mates:
RF174, RF178, RF316, RS316, GRF1H-C, IJ5H



MCX	GENDER	TYPE	PLATING	ORIENTATION	TERMINATION
	-J = Jack	-P = PCB Mount	-H = 30 μ" (0.76 μm) Gold center contact, 3 μ" (0.08 μm) Gold outer contact	-ST = Straight	-TH1 = Through-hole (-ST plug not available)
	-P = Plug			-RA = Right-angle	-TH2 = Elevated Through-hole (-ST plug only)
					-SM1 = Surface Mount (Jack only)
					-EM1 = Edge Mount (-ST Jack only)
					-MT1 = Mixed Technology (-ST Jack only)



50 Ω MMCX TO 6 GHz

MMCX Cable Assemblies

RF174, RF178, RF316,
RS316



SERIES	END 1 CONNECTOR	END 2 CONNECTOR	OVERALL LENGTH
RF174 = RG 174 Cable	-03SP1 = MMCX Straight Jack		-“XXXX” = Overall Length in millimeters
RF178 = RG 178 Cable (-03SP1 & -03RP1 only)	-03RP1 = MMCX Right-angle Plug		-0100 (100 mm) 3.94" minimum
RF316 = RG 316 Cable, Single Braid Shield	-V3SP1 = MMCXV Straight Plug, High Vibration		
RS316 = RG 316 Cable, Double Shielded (-03SP1 only)	-V3RP1 = MMCXV Right-angle Plug, High Vibration		
	-V3SJ1 = MMCXV Straight Jack, High Vibration		

ALSO AVAILABLE

50 Ω: MCX, SMA, SMB, BNC, TNC,
N Type = RF174, RF178, RF316
50 Ω: MCX, SMA, BNC, TNC = RS316

MMCX Cable Connectors

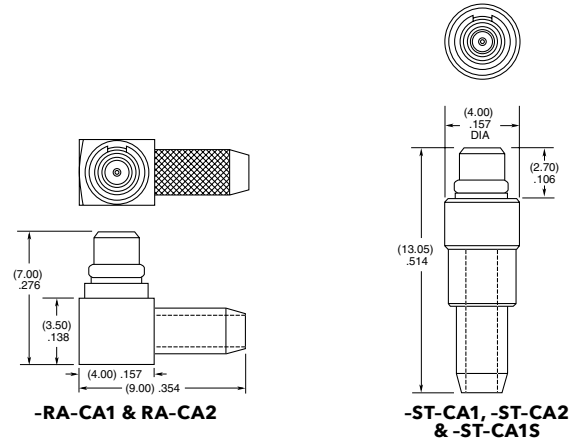
MMCX-CA



CONNECTORS FOR INDUSTRY STANDARD CABLES	
MMCX-P-C-H-ST-CA1	RG 174/316 Cable
MMCX-P-C-H-ST-CA2	RG 178 Cable
MMCX-P-C-HF-ST-CA1S	RG 316 Double Shielded Cable
MMCX-P-C-H-RA-CA1	RG 174/316 Cable
MMCX-P-C-H-RA-CA2	RG 178 Cable

P-C = Cable Plug
H or HF = Plating (30 μ" Gold center contact,
3 μ" Gold outer contact)
ST = Straight
RA = Right-angle

Supplied with pins and ferrules.
See website for dimensions.



-RA-CA1 & RA-CA2

-ST-CA1, -ST-CA2
& -ST-CA1S

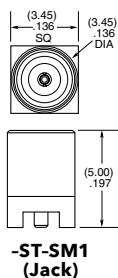
MMCX Board Connectors

MMCX-SM, MMCX-TH,
MMCX-MT, MMCX-EM

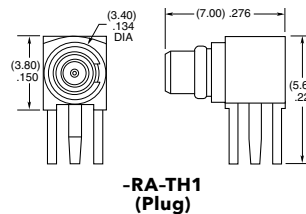
Cable Mates:
RF174, RF178, RF316, RS316,
GRF1H-C, IJ5H



MMCX	GENDER	TYPE	PLATING	ORIENTATION	TERMINATION
	-J = Jack	-P = PCB Mount	-H = 30 μ" (0.76 μm) Gold center contact, 3 μ" (0.08 μm) Gold outer contact	-ST = Straight -RA = Right-angle	-TH1 = Through-hole -MT1 = Mixed Technology (-ST only) -SM1 = Surface Mount (-RA plug not available) -EM1 = Edge Mount (-ST only)
	-P = Plug				



-ST-SM1
(Jack)



-RA-TH1
(Plug)

50 Ω TNC TO 6 GHz

TNC Cable Assemblies

RF174, RF178, RF316, RS316, RF058



SERIES	END 1 CONNECTOR	END 2 CONNECTOR	OVERALL LENGTH
RF174 = RG 174 Cable	-05SP3 = TNC Straight Plug (RF058 not available)		-“XXXX” = Overall Length in millimeters
RF178 = RG 178 Cable	-05BJ3 = TNC Straight Bulkhead Jack (RS316 & RF058 not available)		-0100 (100 mm) 3.94” minimum
RF316 = RG 316 Cable, Single Braid Shield	-05SR3 = TNC Straight Plug, Reversed Polarity (RF058 only)		
RS316 = RG 316 Cable, Double Shielded			
RF058 = RG 58 Cable			
ALSO AVAILABLE			
50 Ω: MCX, MMCX, SMA, SMB, BNC,			
N Type = RF174, RF178, RF316			
50 Ω: MCX, MMCX, SMA, BNC = RS316			
50 Ω: SMA, N Type = RF058			

TNC Cable Connectors

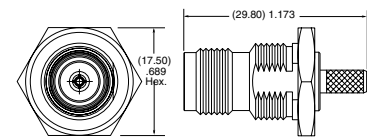
TNC-CA



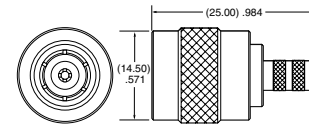
Supplied with pins, washers, nuts and ferrules. See website for dimensions.

CONNECTORS FOR INDUSTRY STANDARD CABLES	
TNC-P-C-GN-ST-CA1	RG 174/316 Cable
TNC-P-C-GN-ST-CA2	RG 178 Cable
TNC-P-C-GN-SR-C10	RG 58 Cable
TNC-J-C-GN-ST-BH1	RG 174/316 Cable, Bulkhead
TNC-J-C-GN-ST-BH2	RG 178 Cable, Bulkhead

P-C = Cable Plug
J-C = Cable Jack
GN = Plating (10 μ" Gold on contact, Nickel on body)
ST = Straight
SR = Straight Reverse Polarity



-J



-P

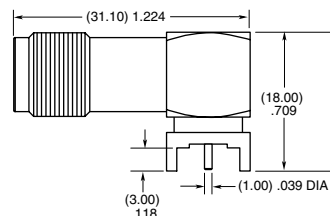
TNC Board Connectors

TNC-TH

Cable Mates:
RF174, RF178, RF316, RS316, RF058, GRF1H-C



TNC	GENDER	TYPE	PLATING	ORIENTATION	TERMINATION
	-J = Jack	-P = PCB Mount	-H = 30 μ" (0.76 μm) Gold center contact, Nickel on shell	-RA = Right-angle	-TH1 = Through-hole



50 Ω BNC TO 4 GHz

BNC Cable Assemblies RF174, RF178, RF316, RS316



SERIES	END 1 CONNECTOR	END 2 CONNECTOR	OVERALL LENGTH
RF174 = RG 174 Cable	-04SP3 = BNC Straight Plug (RS316 not available)		-“XXXX” = Overall Length in millimeters
RF178 = RG 178 Cable	-04BJ2 = BNC Bulkhead Jack		-0100 (100 mm) 3.94" minimum
RF316 = RG 316 Cable, Single Braid Shield	ALSO AVAILABLE 50 Ω: MCX, MMCX, SMA, SMB, TNC, N Type = RF174, RF178, RF316 50 Ω: MCX, MMCX, SMA, TNC = RS 316		
RS316 = RG 316 Cable, Double Shielded			

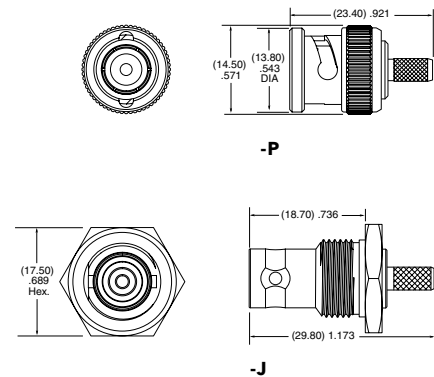
BNC Cable Connectors BNC5-CA



Supplied with pins, washers, nuts, gaskets and ferrules.
See website for dimensions.

CONNECTORS FOR INDUSTRY STANDARD CABLES	
BNC5-P-C-GN-ST-CA1	RG 174/316 Cable
BNC5-P-C-GN-ST-CA2	RG 178 Cable
BNC5-J-C-GN-ST-BH1	RG 174/316 Cable, Bulkhead
BNC5-J-C-GN-ST-BH2	RG 178 Cable, Bulkhead
BNC5-J-C-GN-ST-BH1S	RG 316 Double Shielded Cable, Bulkhead

P-C = Cable Plug
J-C = Cable Jack
GN = Plating (10 μ" Gold on contact, Nickel on body)
ST = Straight



50 Ω SMB TO 4 GHz

SMB Cable Assemblies RF174, RF178, RF316



SERIES	END 1 CONNECTOR	END 2 CONNECTOR	OVERALL LENGTH
RF174 = RG 174 Cable	-07SP1 = SMB Straight Plug		-“XXXX” = Overall Length in millimeters
RF178 = RG 178 Cable	-07RP1 = SMB Right-angle Plug		-0100 (100 mm) 3.94” minimum
RF316 = RG 316 Cable, Single Braid Shield	-07BJ1 = SMB Bulkhead Jack		
	-07BJ2 = SMB Bulkhead Jack (RF178 only)		

ALSO AVAILABLE

50 Ω: MCX, MMCX, SMA, BNC, TNC,
N Type = RF174, RF178, RF316

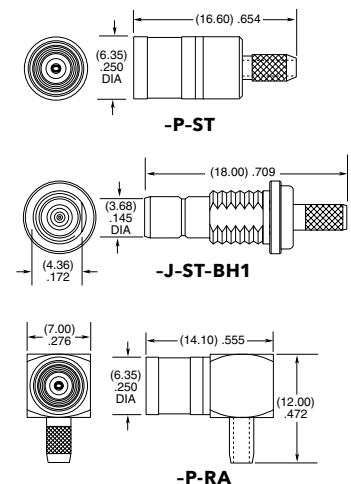
SMB Cable Connectors SMB5-CA



CONNECTORS FOR INDUSTRY STANDARD CABLES	
SMB5-P-C-H-ST-CA1	RG 174/316 Cable
SMB5-P-C-H-RA-CA1	RG 174/316 Cable
SMB5-J-C-H-ST-CA2	RG 178 Cable
SMB5-J-C-H-ST-BH1	RG 316 Cable, Bulkhead

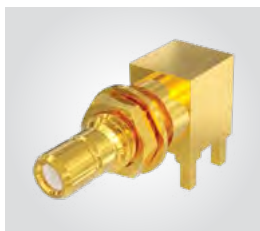
P-C = Cable Plug
J-C = Cable Jack
H = Plating (30 μ" Gold center contact,
3 μ" Gold on outer contact)
ST = Straight
RA = Right-angle

Supplied with pins, washers,
nuts and ferrules. See website
for dimensions.



SMB Board Connectors SMB5-TH

Cable Mates:
RF174, RF178, RF316,
GRF1H-C, IJ5H



SMB5	GENDER	TYPE	PLATING	ORIENTATION	TERMINATION
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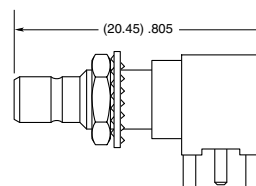
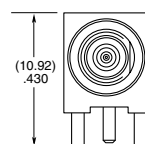
-J
= Jack

-P
= PCB
Mount

-H
= 30 μ" (0.76 μm)
Gold center contact,
3 μ" (0.08 μm) Gold
outer contact

-RA
= Right-angle

-TH1
= Through-hole



75 Ω BNC TO 12 GHz



BNC Cable Assemblies

RFC6T, RFA6T, RFB6T, RF179



SERIES	END 1 CONNECTOR	END 2 CONNECTOR	OVERALL LENGTH
RFC6T* = 12G-SDI, Belden 4694R Cable	-74SP3 = 75 Ω BNC Straight Plug		-“XXXX” = Overall Length in millimeters
RFA6T = RG 6 Cable	-D4SP3 = 75 Ω BNC Die Cast Straight Plug		-0300 (300 mm) 11.81" minimum (RFA6T, RFB6T, RFC6T)
RFB6T = Belden 1694A Cable	-74BJ3 = 75 Ω BNC Bulkhead Jack (RF179 only)		-0100 (100 mm) 3.94" minimum (RF179)
RF179 = RG 179 Cable	-74RP3 = 75 Ω BNC Right-angle Plug (RFA6T, RFB6T, RFC6T only)		

ALSO AVAILABLE

75 Ω: DIN 1.0/2.3, HD-BNC™ = RFA6T, RFB6T, RFC6T

75 Ω: DIN 1.0/2.3, SMB, MCX, MMCX = RF179

*Designed to meet SMPTE 2082 12G-SDI specifications.

BNC Cable Connectors

BNC7T-CA



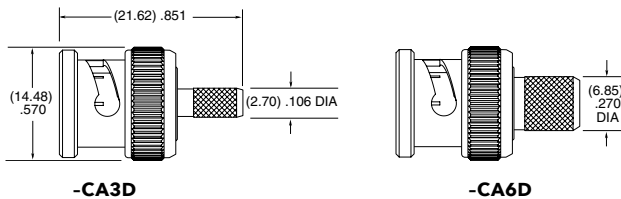
Supplied with pins, washers, nuts, gaskets and ferrules. See website for dimensions.

CONNECTORS FOR INDUSTRY STANDARD CABLES	
BNC7T-P-C-GN-ST-CA3	Machined, RG 179 Cable
BNC7T-P-C-GN-RA-CA3	Machined, RG 179 Cable
BNC7T-P-C-GN-ST-CA6	*Machined, RG 6, Belden 1694A or Belden 4694R Cable
BNC7T-P-C-GN-RA-CA6	*Machined, RG 6, Belden 1694A or Belden 4694R Cable
BNC7T-J-C-GN-ST-BH3	Machined, Bulkhead, RG 179 Cable
BNC7T-P-C-GN-ST-CA3D	Die Cast, RG 179 Cable
BNC7T-P-C-GN-ST-CA6D	Die Cast, RG 179 Cable

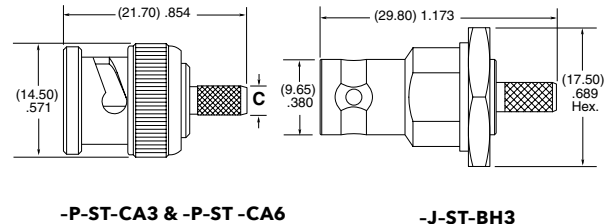
P-C = Cable Plug
J-C = Cable Jack
GN = Plating (10 μ" Gold on contact, Nickel on outer contact and shell)
ST = Straight
RA = Right-angle

*Designed to meet SMPTE 2082 12G-SDI specifications.

DIE CAST



MACHINED



TERMINATION	C (DIA)
-CA3	(2.70) .106
-CA6	(6.85) .207

Note:
Additional plating options available on Cable Assemblies, Cable Connectors and Board Connectors. Contact RFGGroup@samtec.com

75 Ω DIE CAST BNC TO 12 GHz

BNC Board Connectors

BNC7T-TH, BNC7T-BH, BNC7T-BM, BNC7T-EM

Cable Mates:

RF179, RFA6T, RFB6T, RFC6T, GRF7H-C



Notes:

Contact RFGroup@samtec.com for 12G-SDI PCB mount launch characteristics.

Designed to meet SMPTE 2082 12G-SDI specifications.

Additional plating options available on Board Connectors. Contact RFGroup@samtec.com

BNC7T	GENDER	TYPE	PLATING	ORIENTATION	TERMINATION
	-J = Jack	-P = PCB Mount	-GN = 10 μ" (0.25 μm) Gold contact, 100 μ" (2.54 μm) Nickel Shell	-ST = Straight -RA = Right-angle Bulkhead/Panel Mount	-TH2D = Tall Through-hole Die Cast (-ST only) -BH2D* = Low-Profile Die Cast Bulkhead Through-hole (-RA only) -BM1D* = Low-Profile Die Cast Bulkhead Mixed Technology for (1.60 mm) .062" PCB (-RA only) -BM2D* = Low-Profile Die Cast Bulkhead Mixed Technology for (3.18 mm) .125" PCB (-RA only) -EM1D* = Edge Mount Die Cast Bulkhead/Panel Mount for (1.60 mm) .062" PCB (-ST only) -EM2D* = Edge Mount Die Cast Bulkhead/Panel Mount for (2.40 mm) .093" PCB (-ST only)

*Lock washers & knurled nuts supplied with bulkhead/panel mount options

75 Ω MACHINED BNC TO 12 GHz

BNC Board Connectors

BNC7T-TH, BNC7T-BH, BNC7T-EM

Cable Mates:

RF179, RFA6T, RFB6T, RFC6T, GRF7H-C



Notes:

Contact RFGroup@samtec.com for 12G-SDI PCB mount launch characteristics.

Designed to meet SMPTE 2082 12G-SDI specifications.

Additional plating options available on Board Connectors. Contact RFGroup@samtec.com

BNC7T	GENDER	TYPE	PLATING	ORIENTATION	TERMINATION
	-J = Jack	-P = PCB Mount	-GN = 10 μ" (0.25 μm) Gold contact, 100 μ" (2.54 μm) Nickel Shell	-ST = Straight -RA = Right-angle Bulkhead/Panel Mount	-TH1 = Standard Through-hole (-ST only) -BH1* = Standard Bulkhead Through-hole (-RA only) -EM1* = Edge Mount Bulkhead/Panel Mount for (1.60 mm) .062" PCB (-ST only) -EM2* = Edge Mount Bulkhead/Panel Mount for (2.40 mm) .093" PCB (-ST only)

*Lock washers & knurled nuts supplied with bulkhead/panel mount options

A close-up photograph of a cable connector, likely a BNC or similar type, showing the metal contact points and the braided shield.

*Designed to meet SMPTE 2082 12G-SDI specifications.

HD-BNC™
Cable Connectors
HDBNC-CA



Supplied with pins and ferrules.
See website with dimensions.

Designed to meet SMPTE 2082
12G-SDI specifications.

HD-BNC™ Board Connectors

HDBNC-TH,
HDBNC-EM,
HDBNC-BH,
HDBNC-BM

Cable Mates:

RFA6T, RFB6T, RFB8T,
RFC6T, RFC8T



Notes:
Designed to meet
SMPTE 2082 12G-SDI
specifications.

Additional plating options available
on Cable Assemblies, Cable
Connectors and Board Connectors.
Contact RFGroup@samtec.com

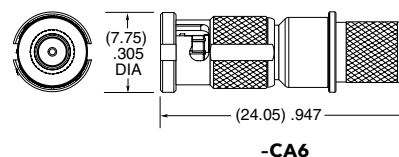
SERIES	END 1 CONNECTOR	END 2 CONNECTOR	OVERALL LENGTH
RFC6T* = 12G-SDI, Belden 4694R Cable RFC8T* = 12G-SDI, Belden 4855R Cable RFA6T = RG 6 Cable RFB6T = Belden 1694A Cable RFB8T = Belden 1855A Cable	–H4SP3 = 75 Ω High-Density BNC Straight Plug		–“XXXX” = Overall Length in millimeters –0300 (300 mm) 11.81" minimum
ALSO AVAILABLE 75 Ω: DIN 1.0/2.3, BNC = RFB6T, RFA6T, RFC6T 75 Ω: DIN 1.0/2.3 = RFB8T, RFC8T			

CONNECTORS FOR INDUSTRY STANDARD CABLES	
HDBNC-P-C-GN-ST-CA6	RG 6, Belden 1694A or Belden 4694R Cable
HDBNC-P-C-GN-ST-CA8	Belden 1855A or Belden 4855R Cable

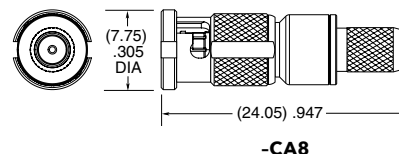
P-C = Cable Plug

GN = Plating (10 μ " Gold on contact, Nickel on outer contact & shell)

ST = Straight



-CA6



-CA8

HDBNC	GENDER	TYPE	PLATING	ORIENTATION	TERMINATION
	-J = Jack	-P = PCB Mount	-GN = 10 μ " (0.25 μ m) Gold contact, 100 μ " (2.54 μ m) Nickel shell	-ST = Straight	-BH1 = Through-hole
				-RA = Right-angle	-BH2 = Through-hole (2.36 mm) .093" PCB (-RA only)
					-BM1D = Die Cast Bulkhead Mixed Technology for (1.60 mm) .062" PCB (-RA only)
					-BM2D = Die Cast Bulkhead Mixed Technology for (3.18 mm) .125" PCB (-RA only)
					-EM1 = Edge Mount (-ST only)
					-TH1 = Through-hole (-ST only), Three Legs

DIN Cable Assemblies

RFA6T, RFB6T, RF179,
RFB8T, RFC6T, RFC8T



SERIES	END 1 CONNECTOR	END 2 CONNECTOR	OVERALL LENGTH
RFC6T* = 12G-SDI, Belden 4694R Cable	-78SP4 = 75 Ω DIN Straight Plug		–"XXXX" = Overall length in millimeters
RFC8T* = 12G-SDI, Belden 4855R Cable	ALSO AVAILABLE 75 Ω: HD-BNC™, BNC = RFB6T, RFA6T, RFC6T 75 Ω: BNC, SMB, MCX, MMCX = RF179 75 Ω: HD-BNC™ = RFB8T, RFC8T		–0100 (100 mm) 3.94" minimum (RF179) –0300 (300 mm) 11.81" minimum (RFA6T, RFB6T, RFB8T, RFC6T, RFC8T)
RFA6T = RG 6 Cable			
RFB6T = Belden 1694A Cable			
RF179 = RG 179 Cable			
RFB8T = Belden 1855A Cable			

*Designed to meet SMPTE 2082 12G-SDI specifications.

DIN Cable Connectors DIN7A-CA



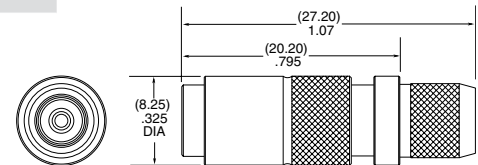
CONNECTORS FOR INDUSTRY STANDARD CABLES	
DIN7A-PP-C-GF-ST-CA3	RG 179
DIN7A-PP-C-GF-ST-CA6	*RG 6, Belden 1694A or Belden 4694R Cable
DIN7A-PP-C-GF-ST-CA8	*Belden 1855A or Belden 4855R Cable

*Designed to meet SMPTE 2082 12G-SDI specifications.

PP-C = Push Pull Plug Cable

GF = Plating (10 μ " Gold on center contact,
Flash Gold on outer contact, Nickel on Shell)

ST = Straight



-CA6

Supplied with pins and ferrules.
See website for dimensions

DIN Board Connectors

DIN7A-TH, DIN7A-BH

Cable Mates:

RFA6T, RFB6T, RF179, RFB8T,
RFC6T, RFC8T, GRF7H-C



Notes:
Contact RFGroup@samtec.com
for 12G-SDI PCB mount launch
characteristics.

Designed to meet SMPTE 2082
12G-SDI specifications.

Additional plating options available
on Cable Assemblies, Cable
Connectors and Board Connectors.
Contact RFGroup@samtec.com

DIN7A	GENDER	TYPE	PLATING	ORIENTATION	TERMINATION
	-J = Jack	-P = PCB Mount	-GF = 10 μ " (0.25 μ m) Gold center contact, 3 μ " (0.08 μ m) Gold outer contact, (100 μ " (2.54 μ m) Nickel body -RA only)	-ST = Straight (-TH1 only)	-TH1 = Through-hole (-ST only)
				-RA = Right-angle (-BH1 only)	-BH1 = Bulkhead Through-hole (-RA only)

-ST-TH1

NUT

-RA-BH1

ORIGINAL RF SOLUTIONS

SHIELDED TWISTED PAIR SYSTEM

- 100 Ω differential pair
- 28 AWG shielded twisted pair cable assembly
- High reliability BeCu contacts
- 1/4-turn bayonet lock

GANGED MICRO-MINI SYSTEMS

- 50 Ω & 75 Ω board stacking and cable assemblies
- High performance rugged contacts
- Variety of End 2 connectors (GRF1H-C, GRF7H-C Series)

ISORATE® SYSTEMS

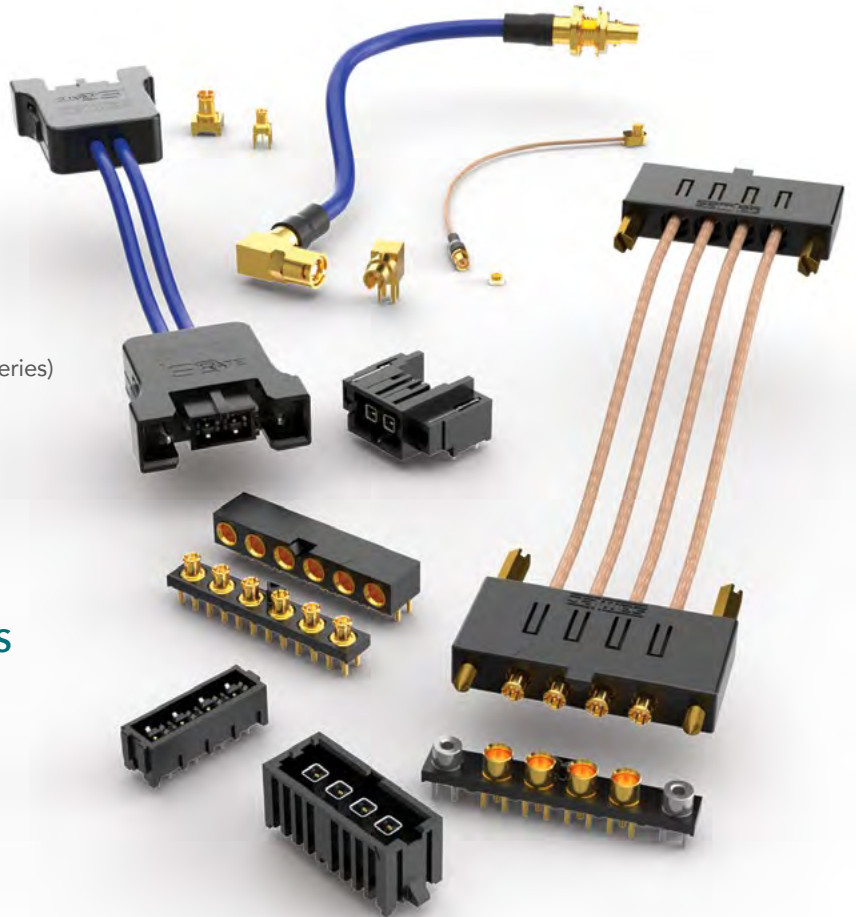
- 50 Ω board stacking and cable assemblies
- Isolated signal systems for 90 percent performance of traditional RF at 50 percent of the cost

MINI & MICRO-MINI INTERCONNECTS

- 75 Ω impedance (MMCX7, MCX7 Series)
- Higher extraction forces (MMCXV Series)
- Not intermateable with standard MMCX, MCX

HIGH-CYCLE U.FL CABLE PLUG

- 500 cycle U.FL compatible plug (HMHF1)
- .047" DIA flexible cable (RF047 Series)



CABLE SOLUTIONS

SERIES	C28S/CJT	GRF1-C/GRF7-C	GRF1H-C/GRF7H-C	RF047	IJ5C/IJ5H
Application	Shielded Twisted Pair	50 Ω & 75 Ω Micro-Mini Ganged	50 & 75 Ω Micro-Mini Hybrid Ganged	50 Ω .047 DIA flexible cable	50 Ω IsoRate®
URL	samtec.com?C28S samtec.com?CJT	samtec.com?GRF1 samtec.com?GRF7-C	samtec.com?GRF1H-C samtec.com?GRF7H-C	samtec.com?RF047	samtec.com?IJ5C samtec.com?IJ5H

BOARD-TO-BOARD SOLUTIONS

SERIES	GRF1-P/GRF1-J	GRF7-P/GRF7-J	MMCX7	MCX7	MMCXV	IJ5/IP5
Application	50 Ω Micro-Mini Ganged	75 Ω Micro-Mini Ganged	75 Ω Mini and Micro-Mini Interconnects		High-Vibration Micro-Mini	50 Ω IsoRate®
URL	samtec.com?GRF1-P samtec.com?GRF1-J	samtec.com?GRF7-P samtec.com?GRF7-J	samtec.com?MMCX7-TH samtec.com?MMCX7-CA	samtec.com?MCX7-SM samtec.com?MCX7-TH samtec.com?MCX7-CA	samtec.com?MMCXV-TH samtec.com?MMCXV-EM samtec.com?MMCXV-CA	samtec.com?IP5 samtec.com?IJ5

CUSTOM RF APPLICATION SPECIFIC SOLUTIONS

EXTREME FLEXIBILITY • QUICK-TURN MODIFICATIONS • CUSTOM DESIGNS

Samtec's fully vertically integrated business model enables the flexibility to quickly and efficiently identify and/or develop innovative, application-specific interconnect solutions to meet a variety of demands in digital/analog systems. Contact RFGroup@samtec.com to discuss your application.

CUSTOMIZED CABLE ASSEMBLIES • EXTREME FLEXIBILITY

- Mix & Match solutions for any application
- Choose any cable connector
- Choose any standard cable



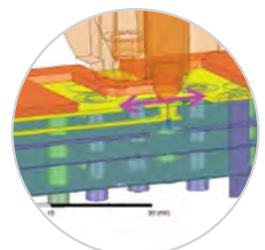
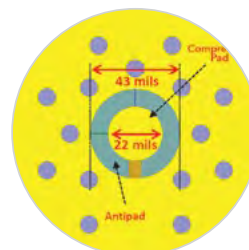
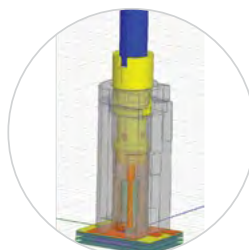
QUICK-TURN MODIFICATIONS & CUSTOMS • STANDARDS & NEW DESIGNS

- Termination types
- Custom tail lengths / designs
- Right-angle height adjustment
- Heat-shrink tubing
- High-frequency applications
- Pick & Place machine designs
- Alternate platings
- Custom labels
- Test & Measurement solutions



TECHNICAL SUPPORT • FULL SYSTEM DESIGN & DEVELOPMENT

- Launch design
- Prototyping
- Fabrication
- Simulations
- Launch optimization support
- Full system test & measurement



RUGGED TIGER EYE™ & MICRO MATE™ SYSTEMS

HIGH-RELIABILITY • MULTI-FINGER BeCu CONTACT • HIGH MATING CYCLES



172-177

1.00 mm PITCH MICRO MATE™ SYSTEMS

Socket Cable Assemblies/Components (S1SS(T), S1SD(T), T1M, ISS1, ISD1, CC09)	172-175
Single Row Terminal Cable Assemblies/Components (T1SS(T), T1PS(T), IST1, ISP1, TC37)	176
Double Row Terminal Cable Assemblies/Components (T1SD(T), T1PD(T), IDT1, IDP1, TC37)	177

178-181

0.80 mm PITCH TIGER EYE™ SYSTEMS

Micro Pitch Sockets & Terminals (SEM, SEMS, TEM, TEMS)	178-180
Socket Cable Assemblies/Components (SESDT, ISDE, CC396)	181

182-189

.050" (1.27 mm) PITCH TIGER EYE™ SYSTEMS

Standard Pitch Sockets & Terminals (SFM, TFM)	182-184
Cost-Effective Tiger Eye™ Lite Sockets & Terminals (SFC, TFC)	185
Socket Cable Assemblies/Components (SFSS(T), SFSD(T), ISDF, CC03)	186-187
Quad Row Strips (MOLC, FOLC)	188
Flexible Pin Count Tiger Eye™ Sockets (SFMC)	189

190-194

2.00 mm PITCH TIGER EYE™ SYSTEMS

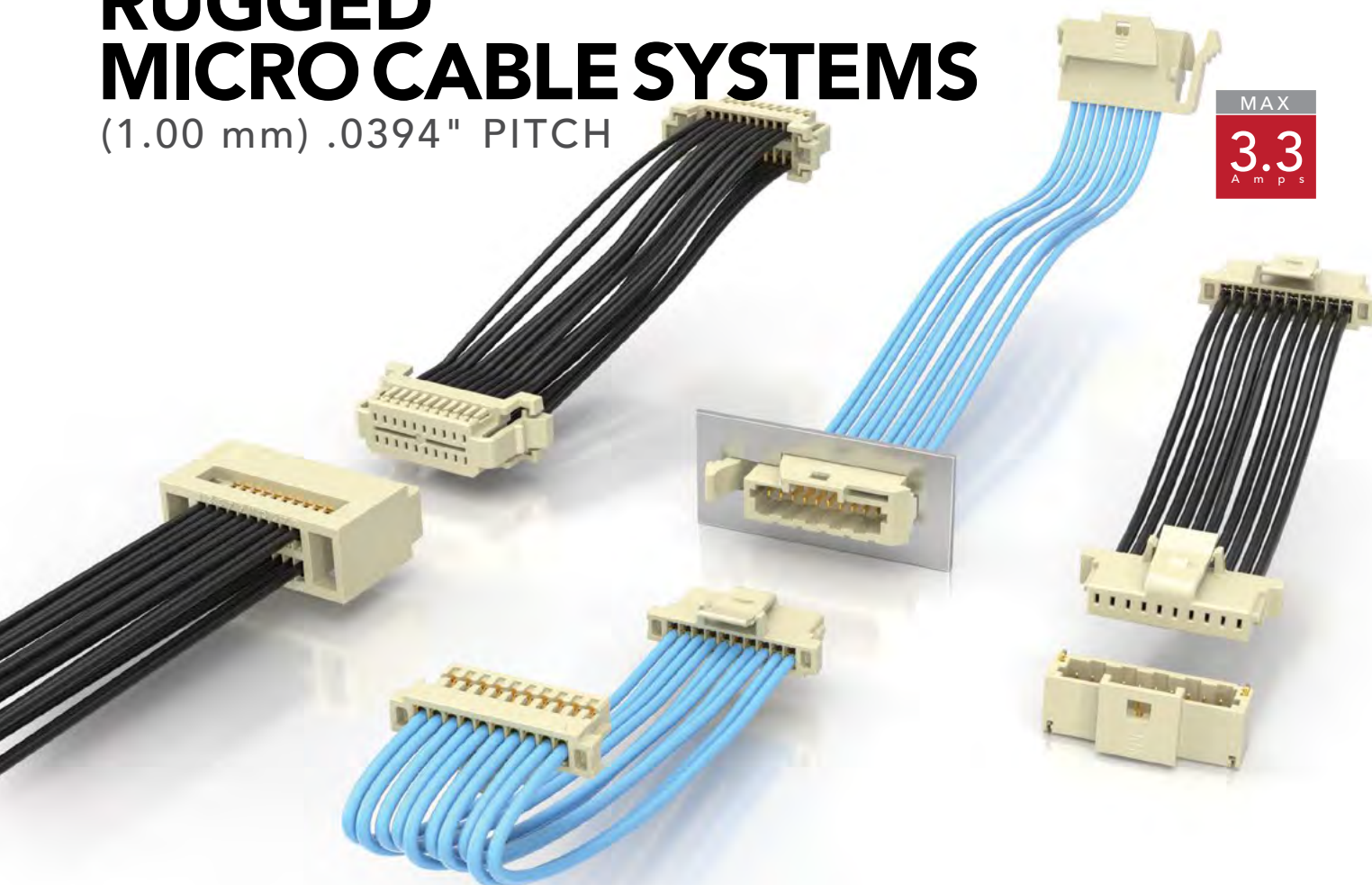
2.00 mm Pitch Sockets & Terminals (S2M, T2M)	190-191
2.00 mm Pitch Cable Assemblies/Components (S2SD(T), T2SD(T), ISD2, CC81)	192-193
2.00 mm Pitch Flex Stack & IDC Cable Socket (SMM)	194

MICROMATE™

RUGGED MICRO CABLE SYSTEMS

(1.00 mm) .0394" PITCH

MAX
3.3
A m p s



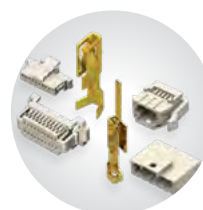
FEATURES & BENEFITS

- Cable-to-cable, panel-to-board and cable-to-board applications
- Extremely small form factors
- 28 and 30 AWG wire options in PVC or Teflon®
- Rugged positive latching for increased retention
- Socket or terminal, single or double row assemblies
- Vertical and right-angle mating headers

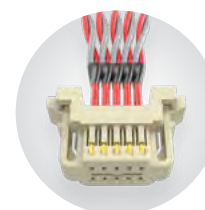
Dupont™ Teflon® is a registered trademark of the E.I. du Pont de Nemours and Company or its affiliates.



Dual leaf contact system for a reliable connection



Components and tooling available:
samtec.com/tooling



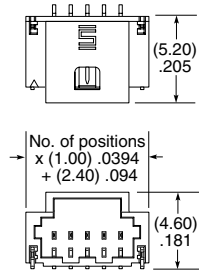
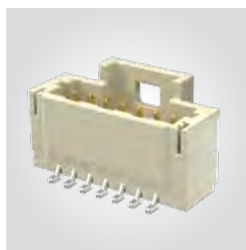
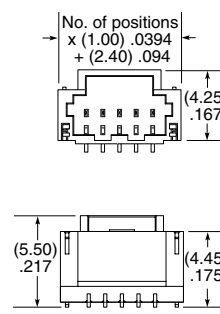
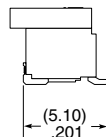
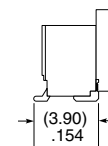
Custom solutions available contact:
asp@samtec.com

KEY SPECIFICATIONS (S1SX(T), T1SX(T) & T1PX(T))

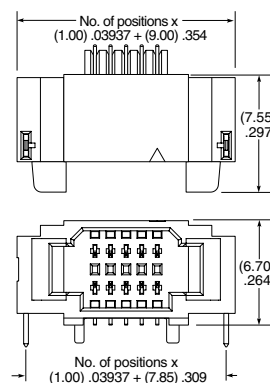
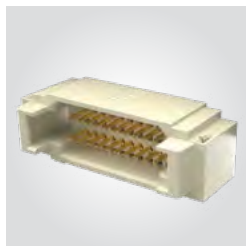
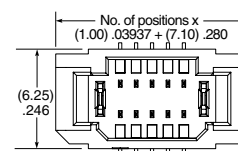
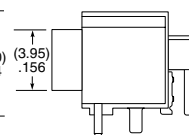
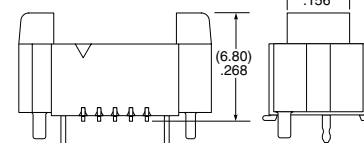
PITCH	INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	OPERATING TEMP RANGE	CURRENT RATING	VOLTAGE RATING
1.00 mm	Black LCP (S1SS(T) without latch) Natural Nylon (S1SS(T) with Latch, S1SD(T), T1XD(T)) Nylon, Light Green (T1XS(T))	Phosphor Bronze	Au or Sn over 50 µ" (1.27 µm) Ni	-10 °C to +85 °C (PVC) -40 °C to +125 °C (Teflon®)	3.3 A per pin (1 pin powered) (Max.)	250 VAC/ 353 VDC

(1.00 mm) .0394" PITCH • DISCRETE WIRE TERMINAL STRIP

SERIES	NO. OF POSITIONS	PLATING OPTION	ROW OPTION	LATCH	OPTIONS	"X"R
T1M	-02, -03, -05, -07, -10, -15, -20	-F = 3 μ " (0.07 μ m) Gold on contact, Matte Tin on tail	-SH = Single Row Horizontal -SV = Single Row Vertical	(Required in callout) -L = Positive Latch	-K = (4.00 mm) .157" DIA Polyimide Film Pick & Place Pad (-SH only) -P = Pick & Place Pad (-SV only)	(Leave blank for Tape & Reel) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

T1M-SH/SV
Cable Mates:
 S1SS(T), S1SD(T)
**-SH****-SV**View complete specifications at: samtec.com?T1M

SERIES	NO. OF POSITIONS	PLATING OPTION	ROW OPTION	OPTION	"X"R
T1M	-02, -03, -04, -05, -10, -15, -20 (Per Row)	-GF = 3 μ " (0.07 μ m) Gold contact and tail	-DH = Double Row Horizontal -DV = Double Row Vertical	-K = (4.00 mm) .157" DIA Polyimide Film Pick & Place Pad (-DV only)	(Leave blank for Tape & Reel) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

T1M-DH/DV
Cable Mates:
 S1SS(T), S1SD(T)
**-DH****-DV**

Note:
 Some lengths, styles and
 options are non-standard,
 non-returnable.

View complete specifications at: samtec.com?T1M

(1.00 mm) .0394" PITCH • SINGLE ROW DISCRETE WIRE SOCKET



SERIES	PINS PER ROW	WIRE GAUGE	PLATING OPTION	ASSEMBLED LENGTH	OPTION
--------	--------------	------------	----------------	------------------	--------

S1SS = Single Row PVC Cable	-02, -03, -05, -07, -10 -15, -20 (Standard sizes)	-28 = 28 AWG -28C = 28 AWG Color Coded Cable (S1SS only)	-GF = 3 μ" (0.07 μm) Gold on contact and tail	-"XX.XX" = Assembled Length in Inches (45.72 mm) 01.80" min.	(Required Callout) -L = Single Ended With Latch
---------------------------------------	---	---	---	--	--

S1SST = Single Row Blue *Teflon® Cable (28 AWG only)		-30 = 30 AWG -30C = 30 AWG Color Coded Cable (S1SS only)			-L1 = Double Ended Latch down, straight (Pin 1 to Pin 1)
--	--	---	--	--	--

S1SS(T)

Board Mates:

T1M

Cable Mates:

T1SS(T), T1PS(T)

S1SS CABLE COLOR CODING

PIN	COLOR
1	BROWN
2	RED
3	ORANGE
4	YELLOW
5	GREEN
6	BLUE
7	VIOLET
8	GRAY
9	WHITE
10	BLACK
ETC	REPEAT

SPECIFICATIONS

Insulator Material:

Nylon, White (with latch)
Black, LCP (without latch)

Contact Material:

Phosphor Bronze

Plating:

Au over 50 μ" (1.27 μm) Ni

Operating Temp Range (S1SS(T)/T1M):

-10 °C to +85 °C (PVC)

-40 °C to +125 °C (Teflon®)

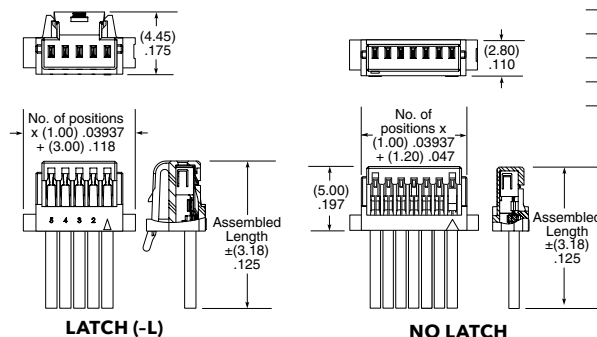
Current Rating (28 AWG):

2.7 A per pin (1 pin powered)

Voltage Rating:

250 VAC/353 VDC

Wire: 28 or 30 AWG



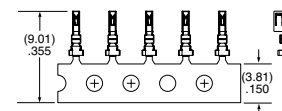
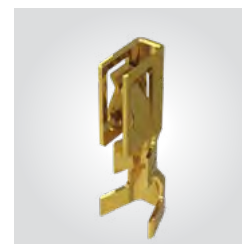
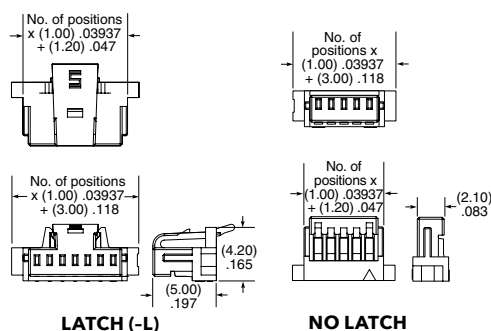
*DuPont™ Teflon® is a registered trademark of the E.I. du Pont de Nemours and Company or its affiliates.

Note:
Teflon® cable is intended for crimp only. Contact Samtec for solderable cable applications.

View complete specifications at: samtec.com?S1SS & samtec.com?S1SST

SERIES	NO. OF POSITIONS	LATCH	SERIES	01	PLATING
--------	------------------	-------	--------	----	---------

ISS1 = Single Row Body	-02, -03, -05, -07, -10, -15, -20	(Leave blank for no latch) -L = Positive Latch	CC09R = Contact, Full Reel (30,000 Parts per Reel)		-GF = 3 μ" (0.07 μm) Gold contact and tail
----------------------------------	--	---	--	--	--



TOOLING

Hand Tool: CAT-HT-309-2830-12

Clamp for mounting hand tool: CAT-HT-MNT-01

Mini Applicator: CAT-MC-309-2830-XX-01

Note:

Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?ISS1, samtec.com?CC09R & samtec.com?CC09M

(1.00 mm) .0394" PITCH • DOUBLE ROW DISCRETE WIRE SOCKET

SERIES	PINS PER ROW	WIRE GAUGE	PLATING OPTION	ASSEMBLED LENGTH	WIRING OPTION
S1SD = Double Row PVC Cable	-02, -03 -04, -05, -10, -15, -20 (Standard sizes)	-28 = 28 AWG -30 = 30 AWG	-GF = 3 μ" (0.07 μm) Gold on contact and tail	-"XX.XX" = Assembled Length in Inches (45.72 mm) 01.80" min.	Double Ended Assemblies -L1 = Pin 1 to Pin 1 -L2 = Pin 1 to Pin 2 -L3 = Pin 1 to Pin N -L4 = Pin 1 to Pin N-1 Single Ended Assembly -L = Latching
S1SDT = Double Row Blue *Teflon® Cable					

S1SD(T)

Board Mates:

T1M

Cable Mates:

T1SD(T), T1PD(T)

SPECIFICATIONS

Insulator Material:

Natural Nylon

Contact Material:

Phosphor Bronze

Plating:

Au over 50 μ" (1.27 μm) Ni

Operating Temp Range

(S1SD(T)/T1M):

-10 °C to +85 °C (PVC)

-40 °C to +125 °C (Teflon®)

Current Rating (28 AWG):

2.3 A per pin

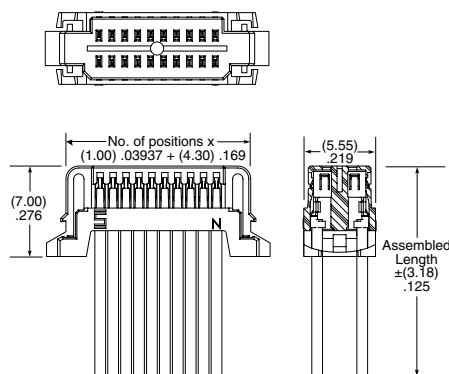
(2 pins powered)

Voltage Rating:

250 VAC/353 VDC

Wire:

28 or 30 AWG

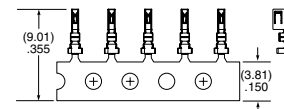
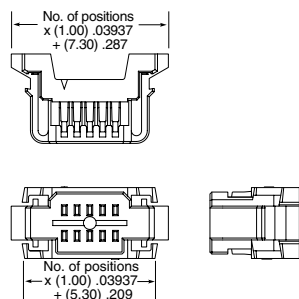


*DuPont™ Teflon® is a registered trademark of the E.I. du Pont de Nemours and Company or its affiliates.

Note:
Teflon® cable is intended for crimp only. Contact Samtec for solderable cable applications.

View complete specifications at: samtec.com?S1SD & samtec.com?S1SDT

SERIES	NO. OF POSITIONS	SERIES	01	PLATING
ISD1 = Double Row Body	-02, -03, -05, -07, -10, -15, -20 (Per Row)	CC09R = Contact, Full Reel (30,000 Parts per Reel)		-GF = 3 μ" (0.07 μm) Gold contact and tail
		CC09M = Contact, Mini Reel (5,000 Parts per Reel)		



TOOLING

Hand Tool: CAT-HT-309-2830-12

Clamp for mounting hand tool: CAT-HT-MNT-01

Mini Applicator: CAT-MC-309-2830-XX-01

Note:
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?ISD1, samtec.com?CC09R & samtec.com?CC09M

(1.00 mm) .0394" • SINGLE ROW DISCRETE WIRE TERMINAL



SERIES	NO. OF POSITIONS	WIRE GAUGE	PLATING OPTION	ASSEMBLED LENGTH	PANEL OPTION	PINOUT
T1SS = Single Row Non-Panel Mount PVC Cable T1PS = Single Row Panel Mount PVC Cable T1SST = Single Row Non-Panel Mount Blue *Teflon® Cable T1PST = Single Row Panel Mount Blue *Teflon® Cable	-02 positions not available with T1PS or T1PST -02 thru -10 (Per Row)	-28 = 28 AWG -28C = 28 AWG Color Coded Cable (T1SS & T1PS only) -30 = 30 AWG -30C = 30 AWG Color Coded Cable (T1SS & T1PS only)	-GF = 3 μ" (0.07 μm) Gold on contact and tail	-"XX.X" = Assembled Length in Inches (45.7 mm) 01.8" min.	(Leave blank for non-panel mount) -A = Fits .033" (0.84 mm), .062" (1.57 mm) and .090" (2.29 mm) Thick Panels	(Leave blank for single ended assembly) -D1 = Double Ended down (Not available with T1PS or T1PST) -D3 = Double Ended up (Not available with T1PS or T1PST) -T1 = Transfer to socket down -T3 = Transfer to socket up
T1SS(T), T1PS(T) Cable Mates: S1SS, S1SST						

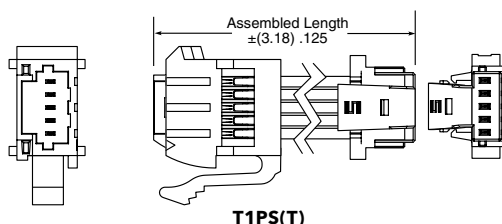
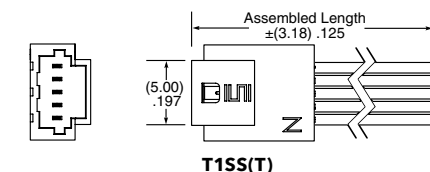
-28C, -30C CABLE COLOR CODING	
PIN	COLOR
1	BROWN
2	RED
3	ORANGE
4	YELLOW
5	GREEN
6	BLUE
7	VIOLET
8	GRAY
9	WHITE
10	BLACK
ETC	REPEAT

*DuPont™ Teflon® is a registered trademark of the E.I. du Pont de Nemours and Company or its affiliates.

Note:
Teflon® cable is intended for crimp only. Contact Samtec for solderable cable applications.

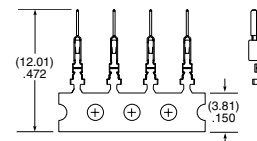
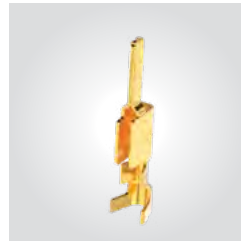
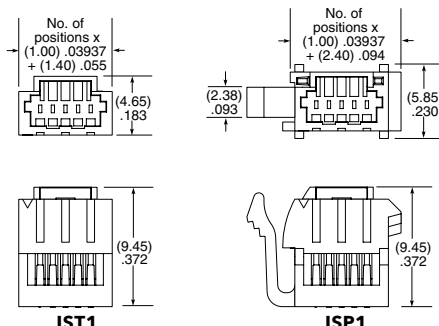
SPECIFICATIONS

Insulator Material:
Nylon, Light Green
Contact Material:
Phosphor Bronze
Plating:
Au over 50 μ" (1.27 μm) Ni
Operating Temp Range:
-10 °C to +80 °C (PVC)
-40 °C to +125 °C (Teflon®)
Wire:
28 or 30 AWG



View complete specifications at: samtec.com?T1SS, samtec.com?T1SST, samtec.com?T1PS & samtec.com?T1PST

SERIES	NO. OF POSITIONS	PANEL THICKNESS	SERIES	01	PLATING
IST1 = Single Row Body ISP1 = Single Row Panel Mount Body	-02 thru -10 (IST1 Body) -03 thru -10 (ISP1 Body)	(Leave blank for IST1) -A = Fits 0.84 mm, 1.57 mm & 2.29 mm Thick Panels	TC37R = Contact, Full Reel (25,000 Parts per Reel) TC37M = Contact, Mini Reel (1,000 - 5,000 Parts per Reel)		-GF = 3 μ" (0.07 μm) Gold contact and tail
Note: Some lengths, styles and options are non-standard, non-returnable.					



TOOLING

Hand Tool: CAT-HT-1137-2830-12

Mini Applicator: CAT-MC-309-2830-XX-01

View complete specifications at: samtec.com?IST1, samtec.com?ISP1, samtec.com?TC37R & samtec.com?TC37M

(1.00 mm) .0394" PITCH • DOUBLE ROW DISCRETE WIRE TERMINAL



SERIES	NO. OF POSITIONS	WIRE GAUGE	PLATING OPTION	ASSEMBLED LENGTH	PANEL OPTION	PINOUT																				
T1SD = Double Row Non-Panel Mount PVC Cable	-02 thru -10 (Per Row)	-28 = 28 AWG	-GF = 3 μ" (0.07 μm) Gold on contact and tail	-"XX.X" = Assembled Length in Inches (45.7 mm) 01.8" min.	(Leave blank for non-panel mount)	(Leave blank for single ended assembly)																				
T1PD = Double Row Panel Mount PVC Cable		-28C = 28 AWG Color Coded Cable (T1SD & T1PD only)			-A = Fits .033" (0.84 mm), .062" (1.57 mm) and .090" (2.29 mm) Thick Panels	-D1 = Double Ended down (Not available with T1PD or T1PDT)																				
T1SDT = Double Row Non-Panel Mount Blue *Teflon® Cable		-30 = 30 AWG				-D3 = Double Ended up (Not available with T1PD or T1PDT)																				
T1PDT = Double Row Panel Mount Blue*Teflon® Cable		-30C = 30 AWG Color Coded Cable (T1SD & T1PD only)	<table><tr><th colspan="2">-28C, -30C CABLE COLOR CODING</th></tr><tr><th>PIN</th><th>COLOR</th></tr><tr><td>1</td><td>BROWN</td></tr><tr><td>2</td><td>RED</td></tr><tr><td>3</td><td>ORANGE</td></tr><tr><td>4</td><td>YELLOW</td></tr><tr><td>5</td><td>GREEN</td></tr><tr><td>6</td><td>BLUE</td></tr><tr><td>7</td><td>VIOLET</td></tr><tr><td>8</td><td>GRAY</td></tr></table>	-28C, -30C CABLE COLOR CODING		PIN	COLOR	1	BROWN	2	RED	3	ORANGE	4	YELLOW	5	GREEN	6	BLUE	7	VIOLET	8	GRAY			-T1 = Transfer to socket down
-28C, -30C CABLE COLOR CODING																										
PIN	COLOR																									
1	BROWN																									
2	RED																									
3	ORANGE																									
4	YELLOW																									
5	GREEN																									
6	BLUE																									
7	VIOLET																									
8	GRAY																									
						-T3 = Transfer to socket up																				

T1SD(T), T1PD(T)

Cable Mates:

S1SD, S1SDT

SPECIFICATIONS

Insulator Material:

Nylon, White

Contact Material:

Phosphor Bronze

Plating:

Au over 50 μ" (1.27 μm) Ni

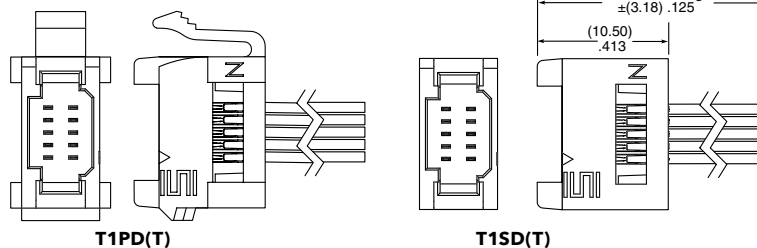
Operating Temp Range:

-10 °C to +80 °C (PVC)

-40 °C to +125 °C (Teflon®)

Wire:

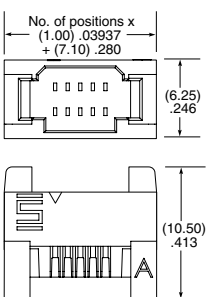
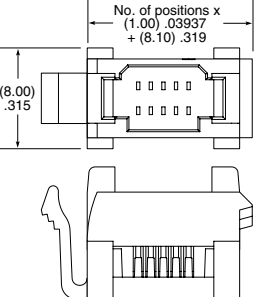
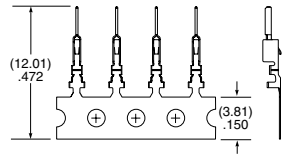
28 or 30 AWG



*DuPont™ Teflon® is a registered trademark of the E.I. du Pont de Nemours and Company or its affiliates.

Note:
Teflon® cable is intended for crimp only. Contact Samtec for solderable cable applications.

View complete specifications at: samtec.com?T1SD, samtec.com?T1SDT, samtec.com?T1PD & samtec.com?T1PDT

SERIES	NO. OF POSITIONS	PANEL THICKNESS	SERIES	01	PLATING
IDT1 = Double Row Body IDP1 = Double Row Panel Mount Body	-02 thru -10 (per row)	(Leave blank for IDT1) -A = Fits 0.84 mm, 1.57 mm & 2.29 mm Thick Panels	TC37R = Contact, Full Reel (25,000 Parts per Reel) TC37M = Contact, Mini Reel (1,000 - 5,000 Parts per Reel)		-GF = 3 μ" (0.07 μm) Gold contact and tail
					

Note:

Some lengths, styles and options are non-standard, non-returnable.

TOOLING

Hand Tool: CAT-HT-1137-2830-12

Mini Applicator: CAT-MC-309-2830-XX-01

View complete specifications at: samtec.com?IDT1, samtec.com?IDP1, samtec.com?TC37R & samtec.com?TC37M



RUGGED TIGER EYE™ SYSTEMS

(0.80 mm) .0315" PITCH



FEATURES & BENEFITS

- High-reliability, multi-finger BeCu contact
- Micro pitch and slim body for space-savings
- 6 mm, 7 mm and 10 mm stack heights
- Locking clip, alignment pins and weld tab ruggedizing features
- Rugged latching system for increased withdrawal force
- Vertical and right-angle mating headers
- Discrete wire assembly available with 32 AWG Teflon® wire; contact asp@samtec.com for custom solutions
- Extended Life Product™ testing available

MAX
2.9
A m p s

8
G b p s



Locking for increased
unmating force
(Visit samtec.com?SEML
for more information)



Components
(ISDE/CC396)
and tooling
available:
samtec.com/tooling



Compatible with
UMPT/UMPS
for power/signal
flexibility

Dupont™ Teflon® is a registered trademark of the
E.I. du Pont de Nemours and Company or its affiliates.

KEY SPECIFICATIONS (SEM/TEM)

PITCH	STACK HEIGHTS	INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	OPERATING TEMP RANGE	CURRENT RATING	VOLTAGE RATING
0.80 mm	6 - 10 mm	Black LCP	BeCu (SEM) Phosphor Bronze (TEM)	Au or Sn over 50 μ" (1.27 μm) Ni	-55 °C to +125 °C	2.9 A per pin (2 pins powered)	235 VAC/330 VDC

samtec.com/080mm-TigerEye

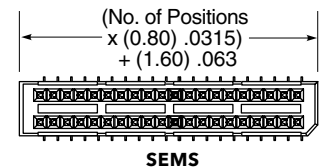
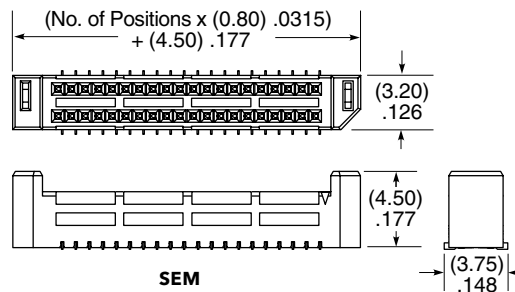
Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec's specifications which are subject to change without notice.

(0.80 mm) .0315" PITCH • MICRO TIGER EYE™ SOCKET AND HEADER

SERIES	1	NO. PINS PER ROW	02	STACK HEIGHT	PLATING OPTION	D	OPTIONS	OTHER OPTIONS
SEM Socket		05, 10, 15, 20, 25 (SEM, SEMS, TEM, TEMS only)		-03.0 = 6 mm Stack Height (-03.0 required for SEM/SEMS Series)	-FG = Gold Flash		Leave blank for SEMS/TEMS	-K = (3.50 mm) .138" DIA Polyimide film Pick & Place Pad (Required for SEMS)
SEMS Slim Socket		30, 35, 40, 45, 50 (SEM/TEM only) (Standard sizes)		-04.0 = 7 mm Stack Height (TEM/TEMS only)	-G = 10 μm (0.25 μm) Gold on contact, Gold Flash on tail		-A = Alignment Pin (Not available with -LC or -WT)	= (5.50 mm) .217" DIA Polyimide film Pick & Place Pad (Required for TEMS)
TEM Header				-07.0 = 10 mm Stack Height (TEM/TEMS only)	-H = 30 μm (0.76 μm) Gold on contact, Gold Flash on tail		-LC = Locking Clip (Not available with -A or -WT) (Manual placement required)	-TR = Tape & Reel (Required for SEMS/TEMS)
TEMS Slim Header							-WT = Weld Tab (Not available with -A or -LC)	-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

SEM
Board Mates:
TEM

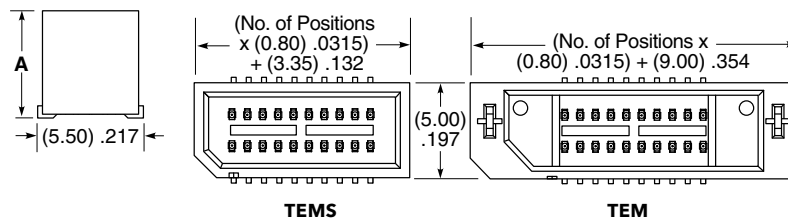
SEMS
Board Mates:
TEMS



View complete specifications at: samtec.com?SEM & samtec.com?SEMS

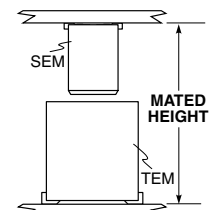
TEM
Board Mates:
SEM, SEML

TEMS
Board Mates:
SEMS



MATED HEIGHTS		
STACK HEIGHT	A	MATED HEIGHT*
-03.0	(5.610) .2209	6 mm
-04.0	(6.610) .2602	7 mm
-07.0	(9.610) .3783	10 mm

*Processing conditions will affect mated height.



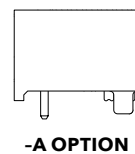
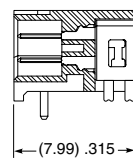
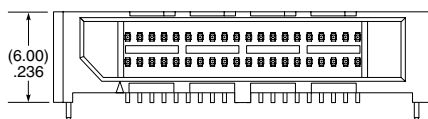
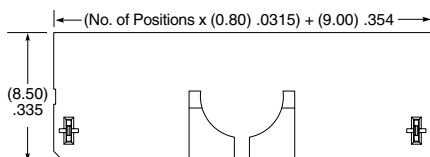
Note:
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?TEM & samtec.com?TEMS

(0.80 mm) .0315" PITCH • MICRO TIGER EYE™ HEADER

TEM	1	NO. OF POSITIONS	02	DH1	PLATING OPTION	D	OPTION
		10, 15, 20, 25, 30, 35, 40, 45, 50 (Per Row) (Standard sizes)			-F = Gold Flash on contact, Matte Tin on tail -L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail -S = 30 μ" (0.76 μm) Gold on contact, Matte Tin on tail		-A = Alignment Pin

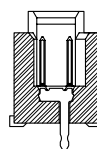
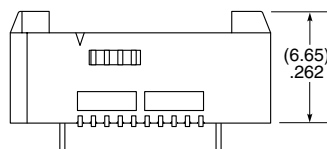
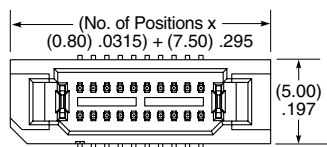
TEM-DH
Board Mates:
SEM, SEML



View complete specifications at: samtec.com?TEM

TEM	1	POSITIONS PER ROW	02	3.0	PLATING OPTION	D	L1	OPTIONS
		05, 10, 15, 20 (Standard sizes)			-G = 10 μ" (0.25 μm) Gold on contact, Gold Flash on tail		-L1 = Latching	-K = (5.50 mm) .217" DIA Polyimide film Pick & Place Pad -TR = Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

TEM-L1
Cable Mates:
SESDT



Note:
Some lengths, styles and
options are non-standard,
non-returnable

View complete specifications at: samtec.com?TEM



(0.80 mm) .0315" PITCH • DISCRETE WIRE CABLE ASSEMBLY/COMPONENTS

SESDT	POSITIONS PER ROW	32	PLATING OPTION	ASSEMBLED LENGTH	OPTIONS
-------	-------------------	----	----------------	------------------	---------

= Double Row
Blue *Teflon®
Cable
(32 AWG)

-05, -10, -15, -20
(Standard sizes)

-G
= 10 μ" (0.25 μm)
Gold on contact area,
3 μ" (0.08 μm) Gold on tail

-"XX.X"
= Assembled
Length in Inches
(76.2 mm) 03.0" min.

Double Ended Assemblies

-L1
= Pin 1 to Pin 1
-L2
= Pin 1 to Pin 2
-L3
= Pin 1 to Pin N-1
-L4
= Pin 1 to Pin N

SESDT

Board Mates:

TEM-L1

SPECIFICATIONS

Insulator Material:

Natural Nylon

Contact Material:

BeCu

Plating:

Au over 50 μ" (1.27 μm) Ni

Wire:

Tinned Copper

Wire Insulation:

FEP

Operating Temp Range:

-55 °C to +125 °C

Current Rating:

1.9 A per pin

(2 pins powered)

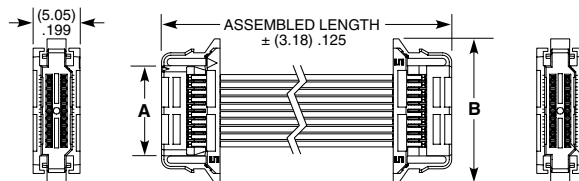
Voltage Rating:

200 VAC/280 VDC

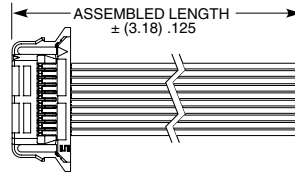
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Note:

Teflon® cable is intended for crimp only. Contact Samtec for solderable cable applications.



DOUBLE ENDED



SINGLE ENDED

Single Ended Assembly

-L
= Latching

NO. OF POSITIONS	A	B
-05	(5.70) .224	(11.50) .453
-10	(9.70) .382	(15.50) .610
-15	(13.70) .539	(19.50) .768
-20	(27.70) .697	(23.50) .925

View complete specifications at: samtec.com?SESDT

ISDE	POSITIONS PER ROW	D	L	SERIES	WIRE GAUGE	PLATING	REEL OPTIONS
------	-------------------	---	---	--------	------------	---------	--------------

-05, -10, -15, -20
(Standard sizes)

-D
= Dual Row

-L
= Latch

CC396
= Contact

-3234
= 32 to 34 AWG

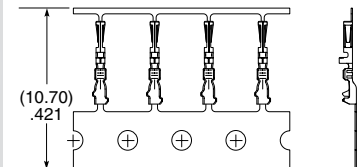
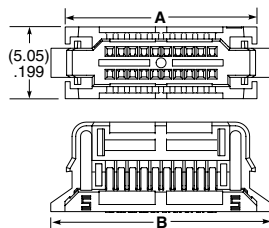
-G
= 10 μ" (0.25 μm)
Gold on contact area,
3 μ" (0.08 μm)
Gold on tail

-U
= Micro Reel
(4K Contacts)

-M
= Mini Reel
(15K Contacts)

-R
= Reel
(50K Contacts)

POSITIONS PER ROW	A	B
-05	(9.50) .374	(11.50) .453
-10	(13.50) .531	(15.50) .610
-15	(17.50) .689	(19.50) .768
-20	(21.50) .846	(23.50) .925



TOOLING

Hand Tool: CAT-HT-396-3232-12

Mini Applicator: CAT-MC-396-3232-XX-03

Note:

Some lengths, styles and options are non-standard, non-returnable

View complete specifications at: samtec.com?ISDE & samtec.com?CC396



RUGGED TIGER EYE™ SYSTEMS

(1.27 mm) .050" PITCH

MAX
3.2
A m p s

8
G b p s

FEATURES & BENEFITS

- Screw down, locking clip, friction latching and weld tab ruggedizing options
- Shrouded, polarized and keyed
- Surface mount or through-hole tails
- High-density, four row design (FOLC/MOLC Series)
- Discrete wire assemblies available in single or double row, 28 and 30 AWG PVC or Teflon® wire; contact asp@samtec.com for custom solutions
- Cable components (ISDF/CC03) and tooling available

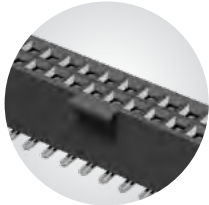
Dupont™ Teflon® is a registered trademark of the E.I. du Pont de Nemours and Company or its affiliates.

KEY SPECIFICATIONS (TFM/SFM)

PITCH	STACK HEIGHTS	INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	OPERATING TEMP RANGE	CURRENT RATING	VOLTAGE RATING	MAX CYCLES
1.27 mm	6 to 12 mm	Black LCP	BeCu (SFM) Phosphor Bronze (TFM)	Au or Sn over 50 μ" (1.27 μm) Ni	-55 °C to +125 °C	3.2 A per pin (2 pins powered)	250 VAC	10,000 with 30 μ" (0.76 μm) Au (Call Samtec for E.L.P.™ plating option)



IDC cable assemblies with rugged strain relief (FFSD/FFMD, FFTP/FMTP)



Locking for increased unmating force (SFML/TFML)

SERIES	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OPTIONS
SFM = Standard		03, 04, 06, 08 (SFM only)	(Surface Mount) -02 = Tiger Eye™ Contact (BeCu)	(Through-hole) -01, -03 = Tiger Eye™ Contact (BeCu)	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail (Call Samtec for E.L.P.™ plating option)	Specify only -A, -LC or -DS (Not available with -DH, -SH)
SFML = Locking		05, 07, 10, 15, 20, 25, 30, 35, 40, 45, 50 (Standard sizes)	-L2 = Low Insertion Force Tiger Eye™ Contact (BeCu)	-L1, -L3 = Low Insertion Force Tiger Eye™ Contact (BeCu)	-D = Double Row	-A = Alignment Pin
			-T2 = Tiger Eye™ LITE Contact (Phosphor Bronze)	-T1 = Tiger Eye™ LITE Contact (Phosphor Bronze)	-SH = Single Horizontal (05 thru 30 positions only) (SFM only) (Lead style -02 only)	-LC = Locking Clip (Manual placement required)
					-DH = Double Horizontal (05 thru 30 positions only) (SFM only) (Lead style -02 only)	-DS = Dual Screw Down for (1.60 mm) .062" PCB (05 thru 40 positions only) (Lead styles -01, -02 & -03 only) (Requires -D row option) (Not available with SFML) (Mates with TFM-DS option) (Not available with -A, -LC, -K, -P, -XR)
						-K = Polyimide film Pick & Place Pad (Not available with -DH, -SH)
						-P = Plastic Pick & Place Pad (Not available with -DH, -SH)
						Specify -TR or -FR last; Required for -DH & -SH. (Lead styles -02, -L2 & -T2 only)
						-TR = Tape & Reel
						-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

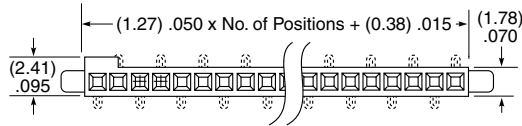
SFM

Board Mates:
TFM

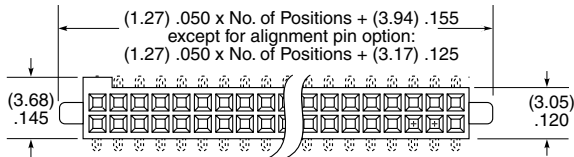
Cable Mates:
TFSD, TFS

SFML

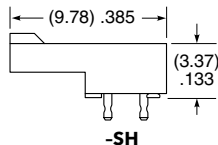
Board Mates:
TFML



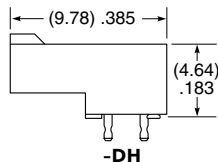
SINGLE ROW



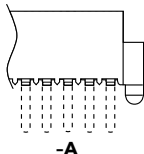
DOUBLE ROW



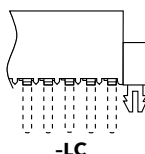
-SH



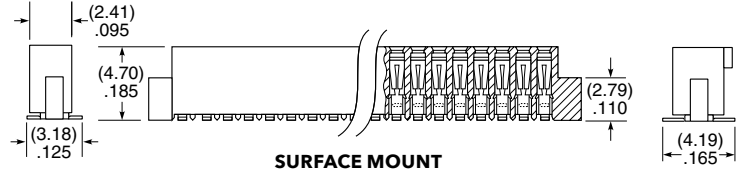
-DH



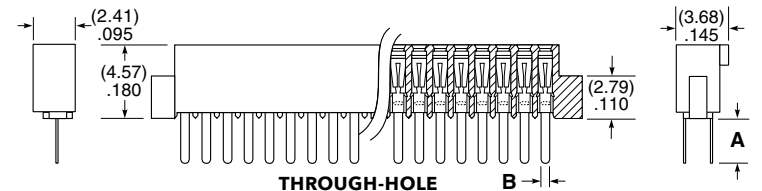
-A



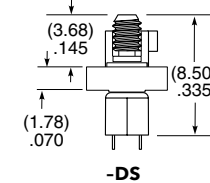
-LC



SURFACE MOUNT



THROUGH-HOLE



-DS

LEAD STYLE	A	B
-01, -L1, -T1	(3.05) .120	(0.51) .020
-03, -L3	(1.91) .075	(0.41) .016

Note:
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?SFM & samtec.com?SFML

SERIES	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OPTIONS
--------	---	------------------	------------	----------------	------------	---------

TFM
= Standard

TFML
= Locking
(-01 & -02 lead style only)

**03, 04,
06, 08**
(TFM -01 & -02 only)

**05, 07,
10, 15, 20,
25, 30, 35,
40, 45, 50**
(Standard sizes)

Specify LEAD STYLE from chart

-L
= 15 μ"
(0.38 μm)
Gold on post,
Matte Tin on tail
(Call Samtec for E.L.P.™ plating option)

-S
= Single Row
(TFM only)

-D
= Double Row

-DH*
= Double Horizontal
(TFM lead style -02 only)
(05 thru 50 positions only)
(-TR or -FR option only available)

Specify only -RA, -RE1 or -RE2

-RA
= Right-angle
(Lead style -01 only)

-RE1
= Right-angle Elevated for
(1.60 mm) .062" PCB
(Requires TFM lead style -01, -D row and -WT)

-RE2
= Right-angle Elevated for
(2.36 mm) .093" PCB
(Requires TFM lead style -01, -D row and -WT)

Specify only -A, -LC, -DS or -WT
Not available with -RA, -RE1 and -RE2 unless otherwise noted.

-A
= Alignment Pin

-LC
= Locking Clip
(Manual Placement required)

-DS
= Dual Screw Down for
(1.60 mm) .062" PCB
(05, 07, 10, 15, 20, 25, 30, 35, 40 positions only)
(TFM lead styles -01 and -02 only)
(Requires -D row option)
(Mates with SFM-DS option and SFSD/SFSDT -SS and -DS option only)
(Not available with -A, -LC, -WT, -K, -P, -XR)

-WT
= Weld Tab
(TFM lead styles -01 and -02 only)
(Required callout for -RE1 & -RE2)
(Mates to SFSS/SFSD -SR and -DR option only)
(05, 07, 10, 15, 20, 25, 30, 35, 40, 45, 50 positions only)

SMT lead styles only
Specify only -K or -P

-K
= Polyimide Film Pick & Place Pad

-P
= Plastic Pick & Place Pad
(5 positions min.)
(Not available with 5 position with -WT)

Specify -TR or -FR last
(Not available with -DS)

-TR
= Tape & Reel

-FR
= Full Reel
Tape & Reel
(must order max. quantity per reel; contact Samtec for quantity breaks)

TFM

Board Mates:

SFM, SFMC

Cable Mates:

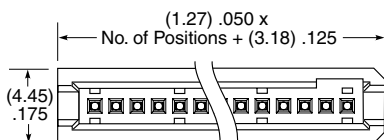
SFSD



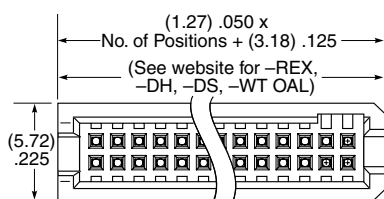
TFML

Board Mates:

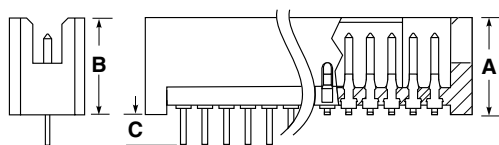
SFML



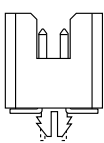
SINGLE ROW



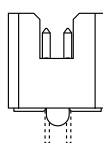
DOUBLE ROW



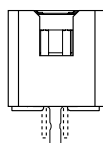
THROUGH-HOLE SURFACE MOUNT



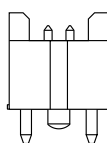
-LC



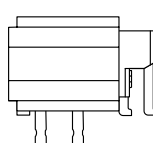
-A



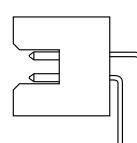
-WT



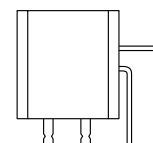
-DS



-DH*



-RA



-RE1 & -RE2

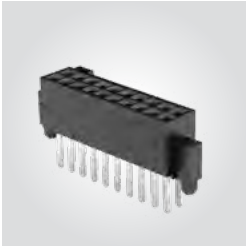
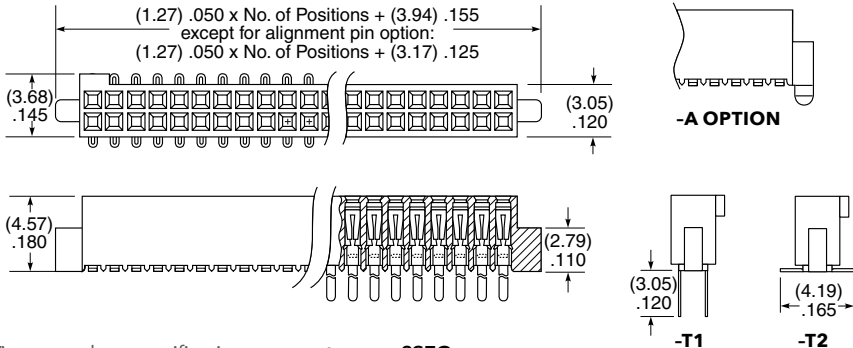
Note:
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?TFM & samtec.com?TFML

(1.27 mm) .050" PITCH • COST-EFFECTIVE HEADER/SOCKET

SFC	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	D	OPTIONS
		04, 05, 10, 15, 20, 25, 30, 35, 40, 45, 50 (Standard sizes)	-T1 = Through-hole Tiger Eye™ LITE -T2 = Surface Mount Tiger Eye™ LITE	-F = Gold flash on contact, Matte Tin on tail -L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail		-A = Alignment Pin -K = (4.00 mm) .157" DIA Polyimide film Pick & Place Pad -TR = Tape & Reel (-T2 only) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (-T2 only)

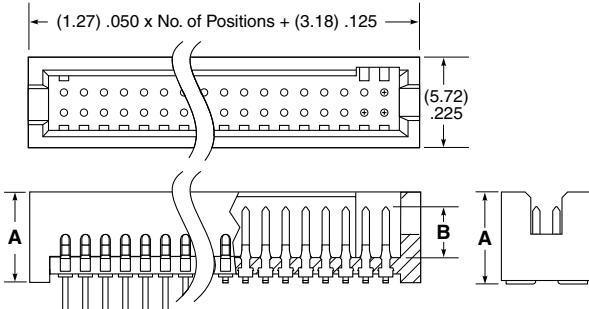
SFC
Board Mates:
TFC
Cable Mates:
TFS, TFS, TFS

View complete specifications at: samtec.com?SFC

TFC	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	D	OPTIONS
		03, 04, 06, 08 (Lead Style -01 & -02 only) 05, 07, 10, 15, 20, 25, 30, 35, 40, 45, 50 (Standard sizes)	-X1 = Through-hole -X2 = Surface Mount	-F = Gold flash on post, Matte Tin on tail -L = 15 μ" (0.38 μm) Gold on post, Matte Tin on tail		-RA = Right-angle (-01 only) -A = Alignment Pin -LC = Locking Clip (Manual Placement required) (not available with -RA) -K = (6.75 mm) .266" DIA Polyimide film Pick & Place Pad (not available with -RA) -P = Plastic Pick & Place Pad (5 positions min.) (not available with -RA) -TR = Tape & Reel (-X2 only) (not available with -RA) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (-X2 only) (not available with -RA)

TFC
Board Mates:
SFC
Cable Mates:
SFS, SFS

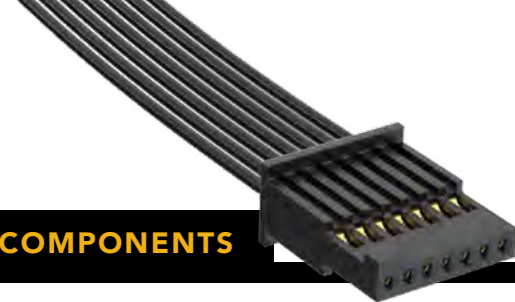



SMT LEAD STYLE	A	B	TH LEAD STYLE	A	B
-02	(5.72) .225	(3.38) .133	-01	(5.59) .220	(3.38) .133
-12	(7.49) .295		-11	(7.37) .290	
-22	(9.27) .365	(3.30) .130	-21	(9.14) .360	(3.30) .130
-32	(11.18) .440		-31	(11.05) .435	

View complete specifications at: samtec.com?TFC

Note:
Some lengths, styles and
options are non-standard,
non-returnable.

(1.27 mm) .050" PITCH • DISCRETE WIRE ASSEMBLY/COMPONENTS



SERIES	POSITIONS PER ROW	WIRE GAUGE	PLATING OPTION	ASSEMBLED LENGTH	END OPTION	END 2 OPTION
SFSS = Single Row PVC Cable SFSS(T) = Single Row Blue *Teflon® Cable	-03, -04, -05, -07, -10, -15, -20, -25, -40, -50 (Standard sizes)	-28 = 28 AWG -28C = Color Coded Cable (SFSS only) -30 = 30 AWG	-G = 10 μ" (0.25 μm) Gold on contact, Gold Flash on balance	-"XX.XX" = Assembled Length in Inches (76.20 mm) 03.00" min. for -S end option (82.60 mm) 03.25" min. for -D end option	-S = Single Ended -D = Double Ended -SR = Single Ended Retention Latch (TFM-WT option required for mating) -DR = Double Ended Retention Latch (TFM-WT option required for mating)	Requires -D or -DR (End 1 Notch Up) -NUS = Notch up, straight (Pin 1 to Pin N) -NDS = Notch down, straight (Pin 1 to Pin 1)

SFSS(T) Board Mates:
TFM, TFC
(-SR & -DR requires -WT option)

-28C CABLE COLOR CODING	
PIN	COLOR
1	BROWN
2	RED
3	ORANGE
4	YELLOW
5	GREEN
6	VIOLET
7	GRAY
8	WHITE
9	BLACK
10	BLUE
ETC	REPEAT

-SR -D-NUS SFSS OR SFSST

*DuPont™ Teflon® is a registered trademark of the E.I. du Pont de Nemours and Company or its affiliates.

Notes:
Teflon® cable is intended for crimp only. Contact Samtec for solderable cable applications.

For wiring option information refer to drawings on web.

View complete specifications at: samtec.com?SFSS & samtec.com?SFSST

ISDF	POSITIONS PER ROW	ROW OPTION	OPTION	SERIES	WIRE GAUGE	01	PLATING
	-03, -04, -05, -07, -10, -15, -20, -25, -40, -50 (Standard sizes)	-S = Single Row	-M = Metal Retention Latch	CC03R = Contact, Full Reel (35,000 Parts per Reel) CC03M = Contact, Mini Reel (1,000 - 5,000 Parts per Reel)	-2830 = 28 to 30 AWG		-GF = Gold flash contact -G = 10 μ" (0.25 μm) Gold on contact

TOOLING

Hand Tool: CAT-HT-203-2830-12	Mini Applicator: CAT-MC-203-2830-XX-01
Clamp for mounting hand tool: CAT-HT-MNT-01	Extraction Tool: CAT-EX-169-01

Note:
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?ISDF, samtec.com?CC03R & samtec.com?CC03M

(1.27 mm) .050" PITCH • DISCRETE WIRE ASSEMBLY/COMPONENTS

SERIES	POSITIONS PER ROW	WIRE GAUGE	PLATING OPTION	ASSEMBLED LENGTH	END OPTION	END 2 OPTION																										
SFSD = Double Row PVC Cable SFSDT = Double Row Blue *Teflon® Cable	-03, -04, -05, -07, -10, -15, -20, -25, -40, -50 (Standard sizes)	-28 = 28 AWG -28C = Color Coded Cable (SFSD only) -30 = 30 AWG	-G = 10 μ" (0.25 μm) Gold on contact, Gold Flash on balance	-"XX.XX" = Assembled Length in Inches (76.20 mm) 03.00" min. for -S end option (82.60 mm) 03.25" min. for -D end option	-S = Single Ended -D = Double Ended For -(X) specify "S" for single ended and "D" for double ended. -(X)R = Retention Latch (TFM-WT option required for mating) -(X)S = Screw Down (Not available in -03, -04 & -50 positions) (Mates with TFM-DS option)	Requires -D, -DS, -DR (End 1 Notch Up) -NUS = Notch up, straight (Pin 1 to Pin N-1) -NDS = Notch down, straight (Pin 1 to Pin 2) -NUS = Notch up, crossed (Pin 1 to Pin N) -NDX = Notch down, crossed (Pin 1 to Pin 1)																										
SFSD(T) Board Mates: TFM, TFC (-SR & -DR requires -WT option) SPECIFICATIONS Insulator Material: Black LCP Contact Material: BeCu Plating: Au over 50 μ" (1.27 μm) Ni Current Rating: 2.9 A per pin (2 pins powered) Operating Temp Range: -10 °C to +80 °C (PVC) -40 °C to +125 °C (*Teflon®) Voltage Rating: 275 VAC (PVC) 235 VAC (*Teflon®) Wire: 28 or 30 AWG <table><tr><th colspan="2">-28C CABLE COLOR CODING</th></tr><tr><th>PIN</th><th>COLOR</th></tr><tr><td>1</td><td>BROWN</td></tr><tr><td>2</td><td>RED</td></tr><tr><td>3</td><td>ORANGE</td></tr><tr><td>4</td><td>YELLOW</td></tr><tr><td>5</td><td>GREEN</td></tr><tr><td>6</td><td>VIOLET</td></tr><tr><td>7</td><td>GRAY</td></tr><tr><td>8</td><td>WHITE</td></tr><tr><td>9</td><td>BLACK</td></tr><tr><td>10</td><td>BLUE</td></tr><tr><td>ETC</td><td>REPEAT</td></tr></table> End 1 Notch (Always Up) End 2 notch location determined by part number -SR -D-NUS SFSD OR SFSDT *DuPont™ Teflon® is a registered trademark of the E.I. du Pont de Nemours and Company or its affiliates. Notes: Teflon® cable is intended for crimp only. Contact Samtec for solderable cable applications. For wiring option information refer to drawings on web.							-28C CABLE COLOR CODING		PIN	COLOR	1	BROWN	2	RED	3	ORANGE	4	YELLOW	5	GREEN	6	VIOLET	7	GRAY	8	WHITE	9	BLACK	10	BLUE	ETC	REPEAT
-28C CABLE COLOR CODING																																
PIN	COLOR																															
1	BROWN																															
2	RED																															
3	ORANGE																															
4	YELLOW																															
5	GREEN																															
6	VIOLET																															
7	GRAY																															
8	WHITE																															
9	BLACK																															
10	BLUE																															
ETC	REPEAT																															

View complete specifications at: samtec.com?SFSD & samtec.com?SFSDT

ISDF	POSITIONS PER ROW	ROW OPTION	OPTION	SERIES	WIRE GAUGE	01	PLATING
	-03, -04, -05, -07, -10, -15, -20, -25, -40, -50 (Standard sizes)	-D = Double Row	-M = Metal Retention Latch -S = Screw Down	CC03R = Contact, Full Reel (35,000 Parts per Reel) CC03M = Contact, Mini Reel (1,000 - 5,000 Parts per Reel)	-2830 = 28 to 30 AWG		-GF = Gold flash contact -G = 10 μ" (0.25 μm) Gold on contact
-D -M -S							

TOOLING

Hand Tool: CAT-HT-203-2830-12

Mini Applicator: CAT-MC-203-2830-XX-01

Clamp for mounting hand tool: CAT-HT-MNT-01

Extraction Tool: CAT-EX-169-01

Note:
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?ISDF, samtec.com?CC03R & samtec.com?CC03M

QUAD ROW TERMINAL/SOCKET

(1.27 mm) .050" PITCH • FOLC/MOLC SERIES

MAX
2.6
A m p s

8
G b p s



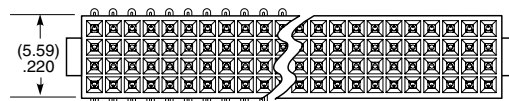
FOLC
Board Mates:
MOLC

MOLC
Board Mates:
FOLC

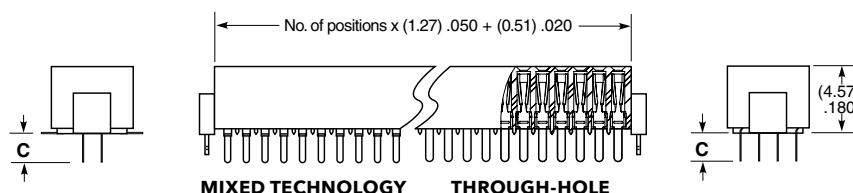
SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Contact Material (FOLC):
BeCu
Terminal Material (MOLC):
Phosphor Bronze
Plating:
Au or Sn over
50 μ" (1.27 μm) Ni
Current Rating:
2.6 A per pin
(4 pins powered)
Operating Temp Range:
-55 °C to +125 °C
Voltage Rating:
165 VAC/230 VDC
Insertion Depth (FOLC):
(3.30 mm) .130" to
(4.06 mm) .160"
Normal Force (FOLC):
Standard = 70 grams
(0.69 N) avg.
LIF = 40 grams
(0.39 N) avg.
Max Cycles (FOLC):
100

FOLC	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	Q	OPTION
		20, 25, 30, 35, 40, 45, 50 (Standard sizes)	-01 & -04 = Through-hole -M1 & -M2 = Mixed Technology -L1 & -L4 = Low Insertion Force Through-hole	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail		-LC = Locking Clip (Manual placement required)



LEAD STYLE	C
-01, -M1	(1.91) .075
-04, -M2	(3.04) .120



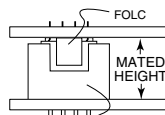
View complete specifications at: samtec.com?FOLC

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity (MOLC):
(0.10 mm) .004" max (20-25)
(0.15 mm) .006" max (30-50)*
*(.004" stencil solution may be available; contact IPG@samtec.com)

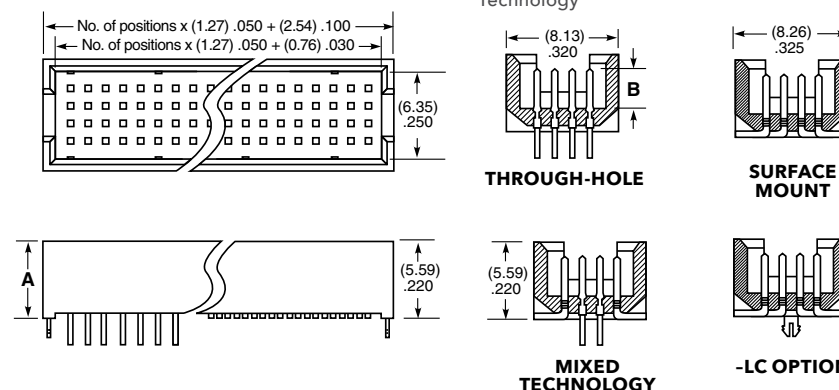
MOLC	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	Q	OPTION
		20, 25, 30, 35, 40, 45, 50 (Standard sizes)	-X'1 = Through-hole (Specify from chart) -02 = Surface Mount -M1 = Mixed Technology	-L = 10 μ" (0.25 μm) Gold on post, Matte Tin on tail		-LC = Locking Clip (Manual placement required) -P = Pick & Place Pad (-02 only) -TR = Tape & Reel (-02 only) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (-02 only)

APPLICATIONS



LEAD STYLE		MATED HEIGHT*
MOLC	FOLC	
-01		(5.97) .235
-11	-01	(7.75) .305
-31		(11.43) .450

*Processing conditions will affect mated height.



LEAD STYLE	A	B
-01	(5.59) .220	(3.38) .133
-11	(7.34) .289	(3.66) .144
-31	(11.05) .435	

View complete specifications at: samtec.com?MOLC

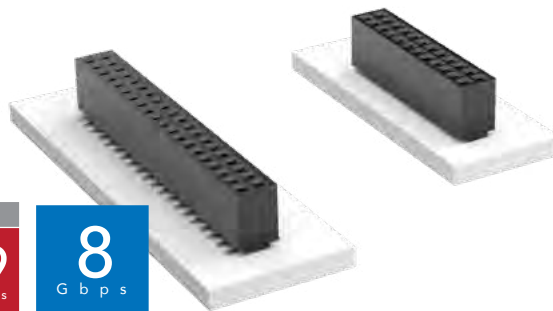
Note:
Some lengths, styles and options are non-standard, non-returnable.

FLEXIBLE PIN COUNT TIGER EYE™ SOCKET

(1.27 mm) .050" PITCH • SFMC SERIES

MAX
2.9
A m p s

8
G b p s



SFMC Board Mates: TFM

Cable Mates:
FMTP, FFMD*

*Note: Standard FFMD callout will not mate with FLE, SFMC. Must use gold plated callouts. (See drawing on web.)

SFMC

1

NO. PINS
PER ROW

02 thru 50

LEAD
STYLE

-01, -03
= Through-hole

-L1, -L3
= Low
Insertion
Force
Through-hole

-02
= Surface Mount

-L2
= Low
Insertion
Force
Surface Mount

-T1
= Through-hole
Tiger Eye™ LITE

-T2
= Surface Mount
Tiger Eye™ LITE

PLATING
OPTION

-L
= 10 μ" (0.25 μm)
Gold on contact,
Matte Tin on tail

D

OPTIONS

-K
= (4.00 mm) .157"
DIA Polyimide film
Pick & Place Pad
(4 positions min.)

-P
= Plastic Pick
& Place Pad
(5 positions min.)

-TR
= Tape & Reel

-FR
= Full Reel
Tape & Reel
(must order max.
quantity per reel;
contact Samtec for
quantity breaks)

SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer

Contact Material:
Tiger Eye™ = BeCu
Tiger Eye™ LITE =
Phosphor Bronze

Plating:
Au or Sn over
50 μ" (1.27 μm) Ni

Current Rating:
2.9 A per pin
(2 pins powered)

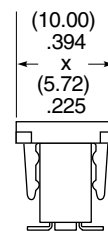
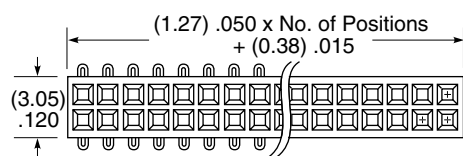
Voltage Rating:
220 VAC/310 VDC

Operating Temp Range:
-55 °C to +125 °C

Insertion Depth:
(3.05 mm) .120" to
(4.06 mm) .160"

Normal Force:
Standard = 132 g (1.29 N) avg.
LIF = 90 g (0.88 N) avg.

Max Cycles:
10,000 with 30 μ" (0.76 μm) Au



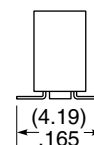
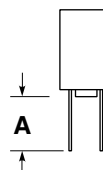
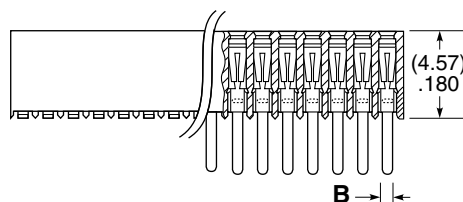
-P OPTION

PROCESSING

Lead-Free Solderable:

Yes

SMT Lead Coplanarity:
(0.10 mm) .004" max (02-26)
(0.15 mm) .006" max (27-50)*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)



ALSO AVAILABLE

Other plating
(MOQ Required)

LEAD STYLE	A	B
-01, -L1, -T1	(3.05) .120	(0.51) .020
-03, -L3	(1.91) .075	(0.41) .016

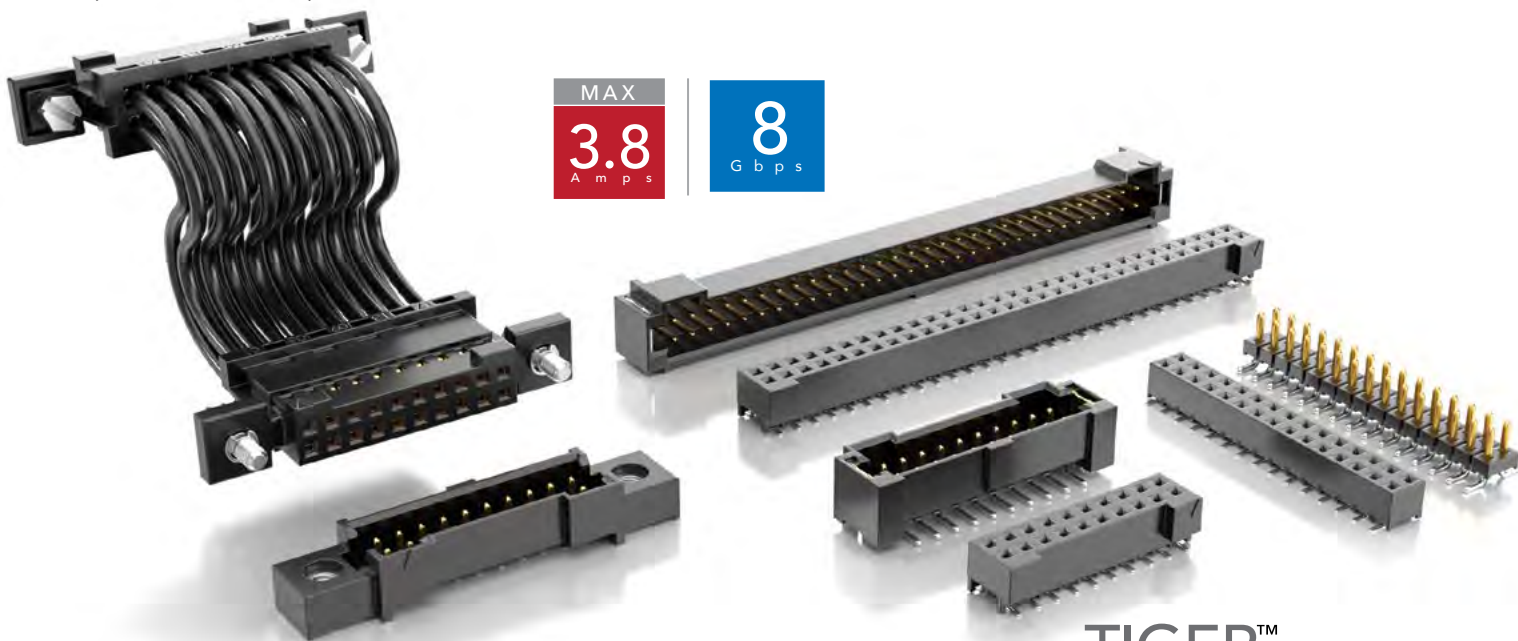
Note:
Some lengths, styles and
options are non-standard,
non-returnable.

View complete specifications at: samtec.com?SFMC



RUGGED TIGER EYE™ SYSTEMS

(2.00 mm) .0787" PITCH



MAX
3.8
A m p s

8
G b p s

FEATURES & BENEFITS

- Rugged Tiger Eye™ contact system for high-reliability
- Wide range of stack heights (SMM/TMM Series)
- Right-angle mating headers available
- Optional metal latching, screw downs, weld tabs and locking clips
- Surface mount or through-hole
- Discrete wire assemblies available in 24-30 AWG PVC or Teflon® wire; [contact asp@samtec.com](mailto:contact.asp@samtec.com) for custom solutions

TIGER
EYE
CONTACT



Optional strain relief
and variety of
wiring options



Components
(ISD2/CC81) &
tooling available:

samtec.com/tooling

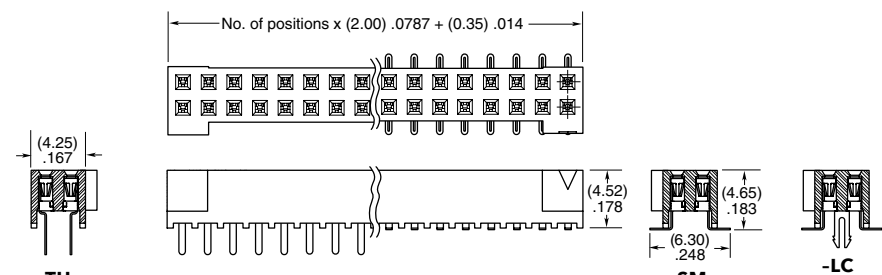
KEY SPECIFICATIONS (S2M/T2M)

PITCH	STACK HEIGHTS	TOTAL PINS	INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	OPERATING TEMP RANGE	CURRENT RATING	MAX CYCLES
2.00 mm	6 & 7 mm	10 - 60	Black LCP	BeCu (S2M) Phosphor Bronze (T2M)	Au or Sn over 50 μ" (1.27 μm) Ni	-55 °C to +125 °C	3.8 A (T2M) 2.6 A (S2M (2 pins powered)	100 with 10 μ" (0.25 μm) Au

(2.00 mm) .0787" PITCH • HIGH-RELIABILITY CABLE INTERCONNECTS

SERIES	1	NO. OF POSITIONS	LEAD STYLE	PLATING OPTION	D	OPTIONS	PACKAGING
S2M Socket		05, 07, 10, 15, 20, 25, 30 (Per Row)	-01 = Through-hole -02 = Surface Mount	-F = Gold flash on contact, Matte Tin on tail -L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail		-K = (5.50 mm) .217" DIA Polyimide film Pick & Place Pad (-02 only) -LC = Locking Clip (Manual placement required) (-02 only) -DS = Screw Down (N/A with -LC) (mates with -T2M-DS)	Leave blank for tube packaging -TR = Tape & Reel (-02 only) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (-02 only)

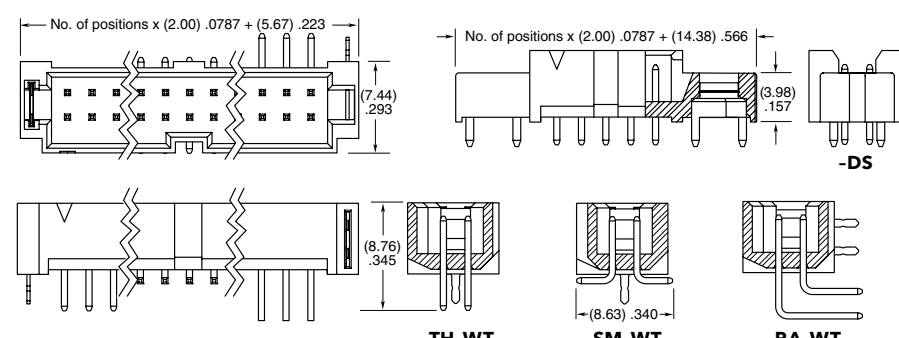
S2M
Board Mates:
T2M
Cable Mates:
T2SD

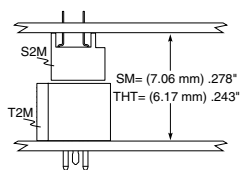
View complete specifications at: samtec.com?S2M

SERIES	1	NO. OF POSITIONS	01	PLATING OPTION	D	TAIL OPTION	OTHER OPTIONS	PACKAGING
T2M Header		05, 07, 10, 15, 20, 25, 30 (Per Row)		-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail		-TH = Through-hole -RA = Right-angle -SM = Surface Mount	-WT = Weld Tab (S2SD & S2SDT, -SR/-DR required mate) -DS = Screw Down (N/A with -RA) (mates with -S2M-DS, S2SD/S2SDT -SS/-DS option) -K = (7.50 mm) .295" DIA Polyimide film Pick & Place Pad (-SM only)	Leave blank for tube packaging -TR = Tape & Reel (-SM only) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (-SM only)

T2M
Board Mates:
S2M
Cable Mates:
S2SD, S2SDT

MATED HEIGHT



Note: Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?T2M

(2.00 mm) .0787" PITCH • CABLE ASSEMBLY/COMPONENTS



SERIES	PINS PER ROW	WIRE GAUGE	PLATING OPTION	ASSEMBLED LENGTH	END OPTIONS	END 2 OPTIONS
S2SD = Double Row PVC Cable	-05, -07, -10, -15, -20, -25, -30 (Standard sizes)	-24 -24C = Color Coded Cable (S2SD only)	-L = 10 μ" (0.25 μm) Gold on contact	-"XX.XX" = Wire Length in Inches (69.85 mm) 02.75" min.	-S = Single End -D = Double End Specify "S" for single ended and "D" for double ended.	(Only available with -D, -DR & -DS) -NUS = Notch up, straight (Pin 1 to Pin N-1) -NDS = Notch down, straight (Pin 1 to Pin 2) -NUX = Notch up, crossed (Pin 1 to Pin N) -NDX = Notch down, crossed (Pin 1 to Pin 1)
S2SDT = Double Row Blue *Teflon® Cable (24, 28, 30 Gauge only)		-26 -28 -30			-(X)R = Retention Latch (-SR mates with T2M-WT) -(X)S = Screw Down (10 positions minimum) (mates with T2M-DS)	

S2SD(T)

Board Mates:

T2M

SPECIFICATIONS

Insulator Material:

Black LCP

Contact Material:

BeCu

Plating:

Au over 50 μ" (1.27 μm) Ni

Wire:

24, 26, 28 or 30 AWG

Operating Temp Range:

-10 °C to +105 °C (PVC)

-40 °C to +125 °C (*Teflon®)

Current Rating

(S2SD-24/T2M):

3.8 A per pin

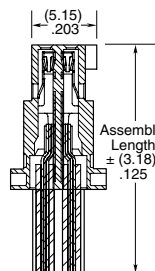
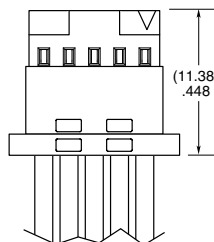
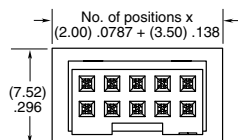
(2 pins powered)

Voltage Rating:

250 VAC

**-24C CABLE
COLOR CODING**

PIN	COLOR
1	BROWN
2	RED
3	ORANGE
4	YELLOW
5	GREEN
6	VIOLET
7	GRAY
8	WHITE
9	BLACK
10	BLUE
ETC	REPEAT



*DuPont™ Teflon® is a registered trademark of the E.I. du Pont de Nemours and Company or its affiliates.

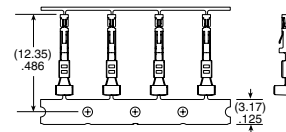
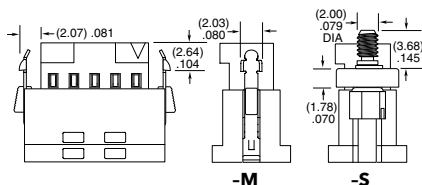
Notes:

Teflon® cable is intended for crimp only. Contact Samtec for solderable cable applications.

For wiring option information refer to drawings on web.

View complete specifications at: samtec.com?S2SD and samtec.com?S2SDT

ISD2	POSITIONS PER ROW	ROW OPTION	LATCH OPTION	SERIES	WIRE GAUGE	01	L
	-05, -07, -10, -15, -20, -25, -30 (Standard sizes)	-D = Double Row	-M = Metal Retention Latch -S = Screw Down	CC81L = Contact, Loose CC81R = Contact, Full Reel (17,000 Parts per Reel)	-2426 = 24 to 26 AWG -2830 = 28 to 30 AWG		-L = 10 μ" (0.25 μm) Gold on contact



TOOLING

Hand Tool: CAT-HT-281-2430-13

Mini Applicator: CAT-MC-281-2426-XX-01 (24-26 AWG)

Extraction Tool: CAT-EX-169-01

Mini Applicator: CAT-MC-281-2830-XX-01 (28-30 AWG)

Note:
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?ISD2, samtec.com?CC81R & samtec.com?CC81L



(2.00 mm) .0787" PITCH • DISCRETE WIRE CABLE ASSEMBLY

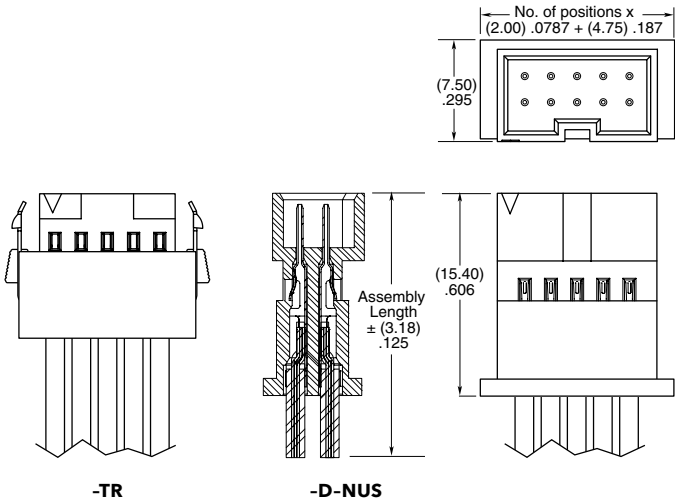


SERIES	PINS PER ROW	WIRE GAUGE	PLATING OPTION	ASSEMBLED LENGTH	END OPTIONS	END 2 OPTIONS
T2SD = Double Row PVC Cable T2SDT = Double Row Blue *Teflon® Cable (24, 28, 30 Gauge only)	-05, -07, -10, -15, -20, -25, -30 (Standard sizes)	-24 -24C = Color Coded Cable (T2SD only) -26 -28 -30	-L = 10 μ" (0.25 μm) Gold on contact	-"XX.XX" = Wire Length in Inches -S = (76.3 mm) 03.00" min. -D = (82.55 mm) 03.25" min.	-S = Single End -D = Double End -T = Transfer End (Socket on end 2) -TR = Transfer End with Retention Latch on Socket	(Only available with -D, -T & -TR) (See Chart for pin configuration) -NUS = Notch up, straight -NDS = Notch down, straight -NUX = Notch up, crossed -NDX = Notch down, crossed

T2SD(T)
Board Mates:
T2M (Requires -T or -TR), S2M

SPECIFICATIONS

Insulator Material:
Black LCP
Terminal Material:
Phosphor Bronze
Plating:
Au over 50 μ" (1.27 μm) Ni
Wire:
24, 26, 28 or 30 AWG
Current Rating (T2SD/S2M):
2.6 A per pin
(2 pins powered)
Operating Temp Range:
-10 °C to +105 °C (PVC)
-40 °C to +125 °C (*Teflon®)
Voltage Rating:
350 VAC



*DuPont™ Teflon® is a registered trademark of the E.I. du Pont de Nemours and Company or its affiliates.

Notes:
Teflon® cable is intended for crimp only. Contact Samtec for solderable cable applications.

For wiring option information refer to drawings on web.

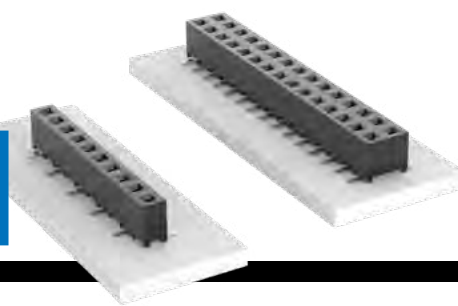
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?T2SD & samtec.com?T2SDT

samtec.com/2mm-TigerEye

-24C CABLE COLOR CODING	
PIN	COLOR
1	BROWN
2	RED
3	ORANGE
4	YELLOW
5	GREEN
6	VIOLET
7	GRAY
8	WHITE
9	BLACK
10	BLUE
ETC	REPEAT

END 1 OPTION	PIN CONFIGURATION			
	END 2 -NUS	END 2 -NDS	END 2 -NUX	END 2 -NDX
-D	Pin 1 to Pin N-1	Pin 1 to Pin 2	Pin 1 to Pin N	Pin 1 to Pin 1
-T & -TR	Pin 1 to Pin 1	Pin 1 to Pin N	Pin 1 to Pin 2	Pin 1 to Pin N-1



SMM	1	NO. PINS PER ROW	02	PLATING OPTION	ROW OPTION	OTHER OPTIONS
		02 thru 40		-F = Gold flash on contact, Matte Tin on tail -L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail -S = 30 μ" (0.76 μm) Gold on contact, Matte Tin on tail	-S = Single Row -D = Double Row	-XX" = Polarized Position -K = (5.50 mm) .217" DIA Polyimide Film Pick & Place Pad (2 positions minimum, -02 thru -05 requires -TR) -P = Plastic Pick & Place Pad (-02 thru -05 requires -TR) -TR = Tape & Reel Packaging (27 positions maximum) -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks) (27 positions maximum)

SMM

Board Mates:

TMM, TMMH, MTMM, MMT, LTMM, TW, PTT, ZLTMM

Cable Mates:

TCMD

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Contact Material:

BeCu

Plating:

Sn or Au over

50 μ" (1.27 μm) Ni

Current Rating (TMM/SMM):

3.2 A per pin

(2 pins powered)

Voltage Rating:

350 VAC

Operating Temp Range:

-55 °C to +125 °C

Insertion Depth:

(3.05 mm) .120" to

(3.25 mm) .128"

Max Cycles:

100 with 10 μ" (0.25 μm) Au

PROCESSING

Lead-Free Solderable:

Yes

SMT Lead Coplanarity:

(0.15 mm) .006" max*

*(.004" stencil solution

may be available; contact

ipg@samtec.com)

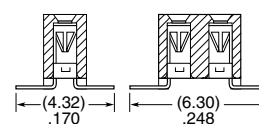
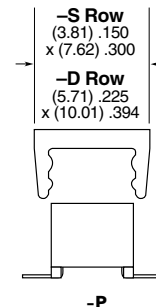
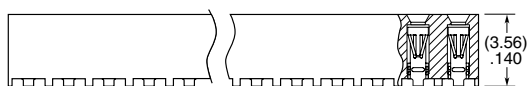
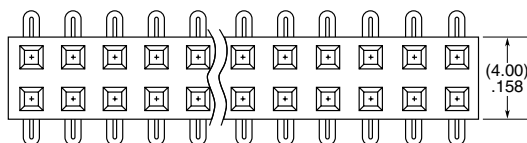
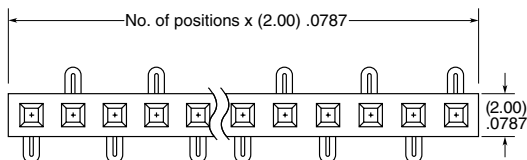
ALSO AVAILABLE

MOQ Required

Locking Clip

(Manual placement required)

Other platings



Note:

Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?SMM

POWER & SEALED I/O

UP TO 60 AMPS • DESIGN FLEXIBILITY • IP67 & IP68 CIRCULARS & RECTANGULARS



196-199

ULTRA MICRO POWER

mPOWER® Ultra Micro Power Connectors (UMPT, UMPS, UMPC) 196-199

200-211

FLEX POWER SYSTEMS

PowerStrip™/20 Headers & Sockets (UPS, UPT, UPPT) 201
PowerStrip™/30 Headers, Sockets, Cables & Components
(MPT, MPS, MPSS, MPTC, MPSC, MPCC) 202-205
PowerStrip™/40 Headers, Sockets, Cables & Components (PET, PES, PETC, PESC, PESS) 206-207
EXTreme LPHPower™ Terminals & Sockets (LPHT, LPHS) 208-209
EXTreme Ten60Power™ Terminals & Sockets (ET60T, ET60S) 210-211

212-219

RUGGED POWER SYSTEMS

Mini Mate® Terminals, Sockets, Cables & Components (IPT1, IPS1, IPL1, MMST) 212-215
Power Mate® Terminals, Sockets, Cables & Components (IPBT, IPBS, PMSS, PMSD) 216-217
.156" (3.96 mm) Pitch Headers & Sockets (FWJ, HFWJ, JW, FHP) 218
.200" (5.08 mm) Pitch Headers & Sockets (HPM, HPW, HPF) 219

220-227

RUGGED SEALED I/O SYSTEMS

AccliMate™ Soldered IP68 Sealed Systems (ACX-12, ACX-16, ACX-22) 220-223
AccliMate™ IP67 Sealed Systems (MCP, MCR) 224
AccliMate™ Circular IP68 Sealed Systems (SCRUS, SCRES) 225
AccliMate™ Rectangular IP68 Sealed Systems (RPBE, RPCE, RPB, RPCU) 226-227

ULTRA MICRO POWER SYSTEM

(2.00 mm) .0787" PITCH



FEATURES & BENEFITS

- Up to 18 A per blade (1 blade powered)
- Design flexibility as a power-only system or a two-piece system for power/signal applications
- Use with Samtec's high-speed connector systems for a unique power/signal system (see chart page 197)
- Choice of 2 to 10 positions
- 5 mm to 12 mm stack heights available (up to 20 mm in development)
- Tin or 10 μ " Gold plated power blades; 30 μ " Gold plating available to meet specific regulations
- Optional weld tabs
- Cable-to-board and cable-to-cable systems in development

KEY SPECIFICATIONS

PITCH	STACK HEIGHTS	INSULATOR MATERIAL	CONTACT MATERIAL	PLATING	OPERATING TEMP RANGE	VOLTAGE RATING	LEAD-FREE SOLDERABLE
2.00 mm	5, 6, 7, 8 and 10 mm	Black LCP	Copper Alloy	Sn or Au over 50 μ " (1.27 μ m) Ni	-55 °C to +105 °C with Tin -55 °C to +125 °C with Gold	460 VAC/ 650 VDC	Yes

UMPT/UMPS compared to another small form factor power solution

Terminals shown actual size at 4 positions



mPower®



Traditional Power Solutions

CREEPAGE & CLEARANCE

UMPT/UMPS	
CREEPAGE	2.20 mm
CLEARANCE	1.65 mm

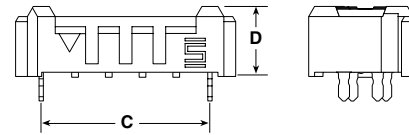
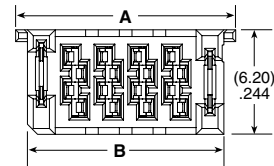
Selectively loading contacts achieves customer specific creepage and clearance requirements.

ULTRA MICRO POWER SOCKET

UMPS	NO. OF POSITIONS	LEAD STYLE	PLATING OPTION	VT	SM	OPTION	"X"R
	-02, -03, -04, -05, -06, -07, -08, -09, -10	-03.5 = (03.5 mm) .138" -05.5 = (05.5 mm) .217"	-L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail -G = 10 μ " (0.25 μ m) Gold on contact, Gold flash on tail -T = Matte Tin			-WT = Weld Tab Through-hole (Leave blank for no weld tab) -K = Polyimide Pick & Place Pad (Leave blank for no pad)	(Leave blank for Tape & Reel) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

-06 thru -10
PRELIMINARY

UMPS
Board Mates:
UMPT



UMPS-04-03.5-X-VT-SM-WT SHOWN

NO. OF POSITIONS	A	B	C
-02	(9.05) .356	(7.65) .301	(6.00) .236
-03	(11.05) .435	(9.65) .380	(8.00) .315
-04	(13.05) .514	(11.65) .459	(10.00) .394
-05	(15.05) .593	(13.65) .537	(12.00) .472
-06	(17.05) .671	(15.65) .616	(14.00) .551
-07	(19.05) .750	(17.65) .695	(16.00) .630
-08	(21.05) .829	(19.65) .774	(18.00) .709
-09	(23.05) .907	(21.65) .852	(20.00) .787
-10	(25.05) .986	(23.65) .931	(22.00) .866

LEAD STYLE	D
-03.5	(4.15) .163
-05.5	(6.15) .242

SIGNAL CONNECTOR	MATED HEIGHT					
	5 mm	6 mm	7 mm	8 mm	10 mm	12 mm
ADM6/ADF6	X					
BTE/BSE	X			X		
BTH/BSH, BTS/BSS	X					
ERM5/ERF5			X		X	X
ERM6/ERF6	X					
ERM8/ERF8			X		X	X
LPAM/LPAF	X					
QMS/QFS					X	
QRM8/QRF8			X		X	X
QTE/QSE, QTH/QSH, QTS/QSS	X					
SEAM/SEAF			X	X	X	X
SEAM8/SEAF8			X		X	
ST4/SS4	X	X				
ST5/SS5	X					
TEM/SEM		X	X		X	

UMPT/UMPS CURRENT RATING (PER CONTACT)

PINS	-T	-G
1	18.3 A	16.2 A
2	14.5 A	14.6 A
3	14.2 A	12.6 A
4	12.9 A	12.3 A
5	12.9 A	N/A
10	N/A	9.4 A

Ratings are derated 20% and based on 70 °C ambient temperature with maximum allowable rise.

Notes:
Some lengths, styles and options are non-standard, non-returnable

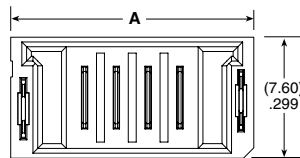
View complete specifications at: samtec.com?UMPS

ULTRA MICRO POWER TERMINAL

UMPT	NO. OF POSITIONS	LEAD STYLE	PLATING OPTION	VT	SM	WELD TAB	LATCH OPTION	K
	-02, -03, -04, -05, -06, -07, -08, -09, -10	-01.5 = (01.5 mm) .059"	-L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail			(Leave blank for no weld tab) -WT = Weld Tab Through-hole	(Leave blank for no latch) (Only available on -02.5 lead style) (Weld tab required) -P = Plastic top latch -M = Metal side latches	-K = Polyimide Pick & Place Pad
		-02.5 = (02.5 mm) .098"	-G = 10 μ " (0.25 μ m) Gold on contact, Gold flash on tail					
		-06.5 = (06.5 mm) .256"	-T = Matte Tin					

-02.5,
-06 thru -10,
-P & -M
PRELIMINARY

UMPT
Board Mates:
UMPS
Cable Mates:
UMPC



LEAD STYLE	C
-01.5	(4.80) .189
-02.5	(5.80) .228
-06.5	(9.55) .376

NO. OF POSITIONS	A (-P & No latch)		B (-M latch)	
	A	B	A	B
-02	(11.30) .445	(9.70) .382	(13.30) .524	(11.60) .457
-03	(13.30) .524	(11.70) .460	(15.30) .602	(13.60) .535
-04	(15.30) .602	(13.70) .539	(17.30) .681	(15.60) .614
-05	(17.30) .681	(15.70) .618	(19.30) .760	(17.60) .693
-06	(19.30) .760	(17.70) .697	(21.30) .839	(19.60) .772
-07	(21.30) .839	(19.70) .776	(23.30) .917	(21.60) .850
-08	(23.30) .917	(21.70) .854	(25.30) .996	(23.60) .929
-09	(25.30) .996	(23.70) .933	(27.30) 1.075	(25.60) 1.007
-10	(27.30) 1.075	(25.70) 1.012	(29.30) 1.154	(27.60) 1.087

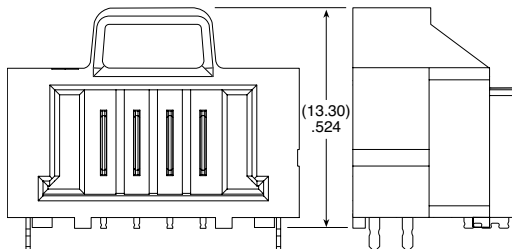
UMPT-04-01.5-X-VT-SM-WT SHOWN

Note:
Some lengths, styles and options are non-standard, non-returnable.

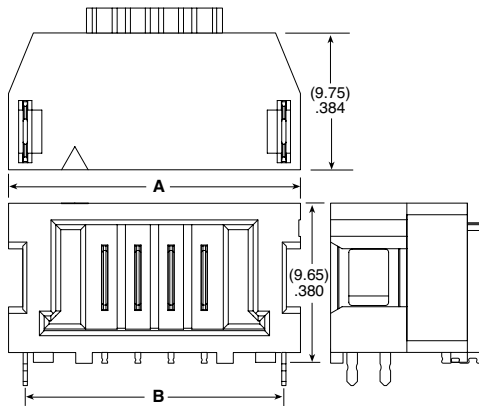
View complete specifications at: samtec.com?UMPT

UMPT	NO. OF POSITIONS	01	PLATING OPTION	RA	WELD TAB	LATCH OPTION	"X"R
	-02, -03, -04, -05, -06, -07, -08, -09, -10		-L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail		-WT = Weld Tab Through-hole	(Leave blank for no latch) -P = Plastic top latch -M = Metal side latches	-TR = Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)
			-S = 30 μ " (0.76 μ m) Gold on contact, Matte Tin on tail				
			-T = Matte Tin				

UMPT-RA
Board Mates:
UMPS
Cable Mates:
UMPC



UMPT-04-01-X-RA-WT-P SHOWN



UMPT-04-01-X-RA-WT-M SHOWN

NO. OF POSITIONS	A (-P & No latch)		B (-M latch)	
	A	B	A	B
-02	(13.60) .535	(11.10) .437	(11.55) .455	
-03	(15.60) .614	(13.10) .516	(13.55) .533	
-04	(17.60) .693	(15.10) .594	(15.55) .612	
-05	(19.60) .772	(17.10) .673	(17.55) .691	
-06	(21.60) .850	(19.10) .752	(19.55) .770	
-07	(23.60) .929	(21.10) .831	(21.55) .848	
-08	(25.60) 1.008	(23.10) .909	(23.55) .927	
-09	(27.60) 1.087	(25.10) .988	(25.55) 1.006	
-10	(29.60) 1.165	(27.10) 1.067	(27.55) 1.085	

Note:
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?UMPT-RA

ULTRA MICRO POWER CABLE



UMPC	NO. OF POSITIONS	PLATING OPTION	WIRE GAUGE	COLOR CODE	LATCH OPTION	LENGTH	PINOUT
	-02, -03, -04, -05, -06, -07, -08, -09, -10	-L = 10 μ" (0.25 μm) Gold on contact, Tin on tail -S = 30 μ" (0.76 μm) Gold on contact, Tin on tail -T = Tin	-16 -18	(Leave blank for standard wire) -C = Color Coded Cable (See table for coding)	-P = Plastic top latch -M = Metal side latches	-“XX.X” = Assembled Length in Inches (76.20 mm) 03.00" min.	(Leave blank for single ended) -1 = Pin 01 to Pin 01 -2 = Pin 01 to Pin N

UMPC

Cable Mates:

UMPT

PRELIMINARY

SPECIFICATIONS

Insulator Material:

Black LCP

Contact Material:

Copper Alloy

Plating:

Sn or Au over
50 μ" (1.27 μm) Ni

Wire:

16 or 18 AWG

Operating Temp Range:

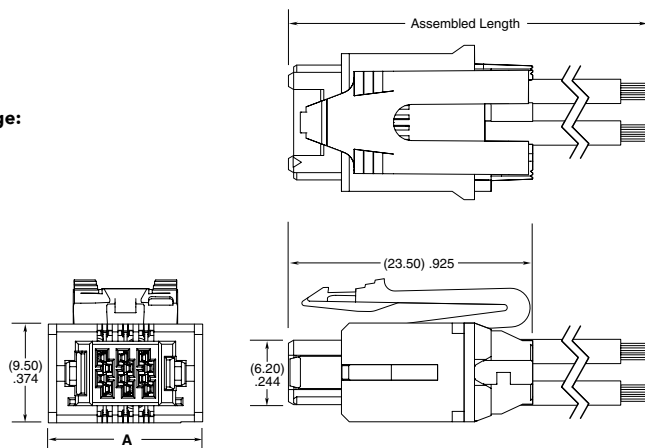
Testing Now!

Current Rating:

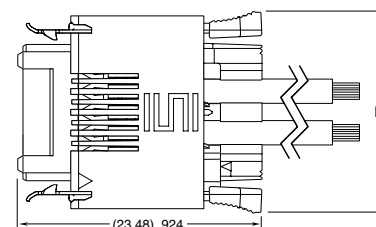
Testing Now!

Voltage Rating:

300V PVC



UMPC-03-X-XX-P-XX.X SHOWN



UMPC-04-X-XX-M-XX.X SHOWN

UMPC/UMPT (TIN PLATING)	
PINS	CURRENT RATING (PER CONTACT)
1	16.8 A
2	14.6 A
3	12.6 A
4	11.6 A
10	8.8 A

NO. OF POSITIONS	A	B
-02	(12.85) .506	(15.38) .605
-03	(14.85) .585	(17.38) .684
-04	(16.85) .663	(19.38) .763
-05	(18.85) .742	(21.38) .842
-06	(20.85) .821	(23.38) .920
-07	(22.85) .900	(25.38) .999
-08	(24.85) .978	(27.38) 1.078
-09	(26.85) 1.057	(29.38) 1.157
-10	(28.85) 1.136	(31.38) 1.235

CABLE COLOR CODING	
PIN	COLOR
1	BROWN
2	RED
3	ORANGE
4	YELLOW
5	GREEN
6	BLUE
7	VIOLET
8	GRAY
9	WHITE
10	BLACK

Notes:

For wiring option information
refer to drawings on web.

Some lengths, styles and
options are non-standard,
non-returnable.

View complete specifications at: samtec.com?UMPC

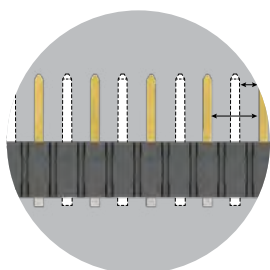


HIGH-POWER SYSTEMS

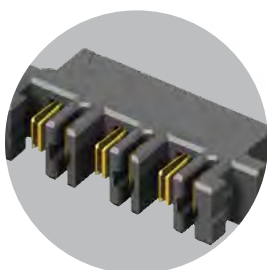
20-60 A
per blade

FEATURES & BENEFITS

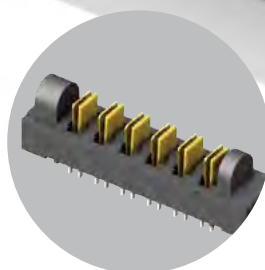
- Current Rating: 23 A - 58.7 A per power blade
- 3.81 mm, 5.00 mm and 6.35 mm pitch
- Dual blade contact system
- Power only or power/signal combinations available
- Right-angle and vertical orientations
- Rugged screw down and locking clip options
- Discrete wire cable assembly with 10-16 AWG wire
- "Hinged" for unique mating in any orientation from 0° to 90° and space confined applications



Selectively loading contacts achieves customer specific creepage and clearance requirements.



Hermaphroditic options available (samtec.com?MPPT)



Hinging options available (samtec.com?FMPT samtec.com?FMPS)

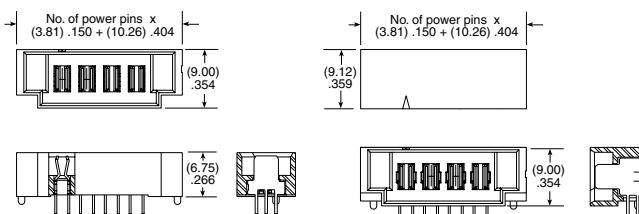
KEY SPECIFICATIONS

SERIES	PET/PES	PETC/PESC	MPT/MPs	MPTC/MPSC	UPT/UPS	FMPT/FMPS	UPPT	MPPT
PITCH	(6.35 mm) .250"	(6.35 mm) .250" (pwr) (2.54 mm) .100" (sig)	(5.00 mm) .1969"	(5.00 mm) .197" (pwr) (2.00 mm) .079" (sig)	(3.81 mm) .150"	(5.00 mm) .1969"	(3.81 mm) .150"	(5.00 mm) .1969"
CCC (1 PIN)*	58.7 A	31.4 A	28.8 A	28.8 A	23 A	26.7 A	21.4 A	23.3 A
CCC (2 PINS)*	48.5 A	28.0 A	24.7 A	24.7 A	18.6 A	22.9 A	19.8 A	20.5 A
CCC (3 PINS)*	41.1 A	24.4 A	24.1 A	24.1 A	17.5 A	19.1 A	17.1 A	19.4 A
CREEPAGE	(3.66 mm) .144"	(3.66 mm) .144"	(2.86 mm) .113"	(2.86 mm) .113"	(5.5 mm) .217"	(6.53 mm) .257"	(1.91 mm) .075"	(2.95 mm) .116"
CLEARANCE	(3.31 mm) .130"	(3.31 mm) .130"	(2.71 mm) .106"	(2.71 mm) .106"	(1.51 mm) .059"	(2.71 mm) .106"	(1.51 mm) .059"	(2.71 mm) .106"
VAC	725 VAC	Signal: 450 VAC Power: 650 VAC	575 VAC	250 VAC	438 VAC	525 VAC	425 VAC	600 VAC
VDC	1025 VDC	Signal: 636 VDC Power: 919 VDC	812 VDC	354 VDC	620 VDC	742 VDC	600 VDC	848 VDC
CYCLES	100	100	100	100	25	100	100	100

(3.81 mm) .150" PITCH • 20 A DUAL BLADE/LEAF POWER SYSTEMS

SERIES	POWER PINS	LEAD STYLE	TAIL LENGTH	PLATING OPTION	TAIL	OTHER OPTION
UPT Terminal	-02 -04	-01 = RA only	-01 = Use with (1.60 mm) .062" Thick PCB (-V & -RA only)	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail	-V = Vertical (Not available with -T plating)	-LC = Locking Clip (Manual placement required) Not available with -PV option
UPS Socket	-06 -08	-03.0 = (03.0 mm) .118" (UPT-V & UPT-PV only)	-03 = Use with (1.60 mm) .062" Thick PCB (-PV only)	-T = Matte Tin (-RA & -PV options only)	-RA = Right-angle -PV = Press-fit, Vertical	
		-04.0 = (04.0 mm) .157" (UPS-V & UPS-PV only)				
		-07.0 = (07.0 mm) .276" (UPS-V & UPS-PV only)				

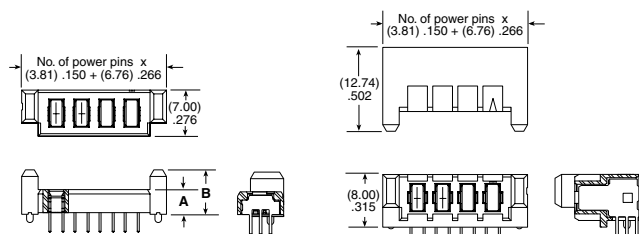
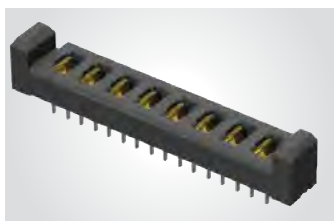
UPT
Board Mates:
UPS



MATED HEIGHT*	
UPS LEAD STYLE	UPT LEAD STYLE
	-03.0
-04.0	(7.00) .276
-07.0	(10.00) .394

*Processing conditions will affect mated height.

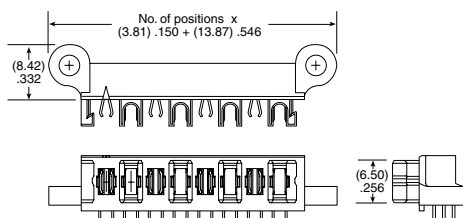
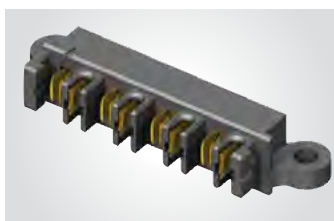
UPS
Board Mates:
UPT



LEAD STYLE	A	B
-04.0	(3.75) .148	(6.75) .266
-07.0	(6.75) .266	(9.75) .384

View complete specifications at: samtec.com?UPT & samtec.com?UPS

SERIES	NO. OF POSITIONS	01	TAIL LENGTH	PLATING OPTION	RA	SD	"X"R
UPPT Hermaphroditic	-02, -04, -06, -08		-01 = (1.60 mm) .062" Thick PCB	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail -T = Matte Tin			Leave blank for tube packaging -TR = Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)
UPPT Board Mates: UPPT							



Note:
Some lengths, styles and options are non-standard, non-returnable

View complete specifications at: samtec.com?UPPT

(5.00 mm) .1969" PITCH • 30 A DUAL BLADE/LEAF SYSTEMS

SERIES	POWER PINS	LEAD STYLE	TAIL LENGTH	PLATING OPTION	TAIL
MPT Terminal	-02, -03, -04,	-6.30 = (6.30 mm) 0.248" (MPT only)	-01 = Use with (1.60 mm) .062" Thick PCB	-L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail	(Required Callout)
MPS Socket	-06, -08	-7.70 = (7.70 mm) 0.303" (MPS only)	-03 = Use with (2.36 mm) .093" Thick PCB	-T = Matte Tin	-V = Vertical

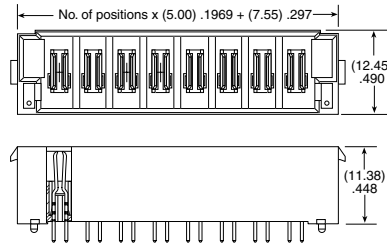
MPT

Board Mates:

MPS

Cable Mates:

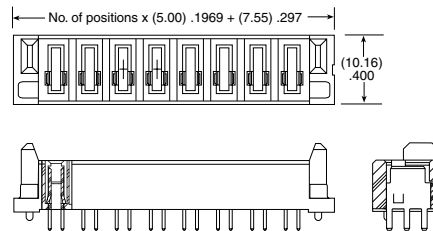
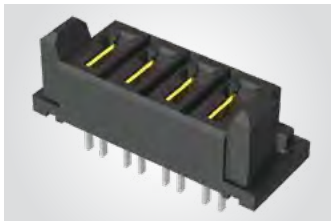
MPSS



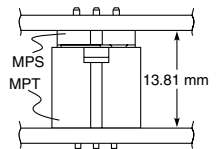
MPS

Board Mates:

MPT



MATED HEIGHT



View complete specifications at: samtec.com?MPT & samtec.com?MPS

SERIES	POWER PINS	01	TAIL LENGTH	PLATING OPTION	RA	SD
MPT Terminal	-02, -04, -06, -08	-01 = Use with (1.60 mm) .062" Thick PCB	-L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail			
MPS Socket		-03 = Use with (2.36 mm) .093" Thick PCB	-T = Matte Tin			

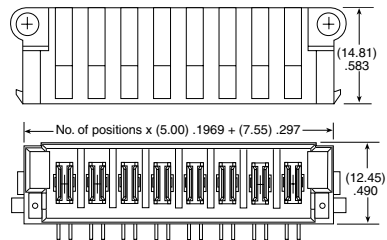
MPT-RA

Board Mates:

MPS

Cable Mates:

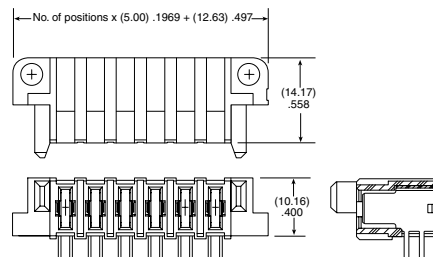
MPSS



MPS-RA

Board Mates:

MPT



Note:
Some lengths, styles and
options are non-standard,
non-returnable

View complete specifications at: samtec.com?MPT & samtec.com?MPS



(5.00 mm) .1969" PITCH • 30 A CABLE ASSEMBLY/COMPONENTS

MPSS	NO. OF POSITIONS	WIRE GAUGE	PLATING OPTION	ASSEMBLED LENGTH	END 1 OPTION	END 2 OPTION
	-02, -03, -04, -06, -08	-14 -16	-L = 10 μ " (0.25 μ m) Gold on contact -T = Matte Tin	- "XX.XX" = Wire length in inches (83.00 mm) 03.25" min.	-SR = Single End -DR = Double End	(Available with -DR only) -NUS = Notch up, straight -NDS = Notch down, straight

MPSS

Board Mates:

MPT

SPECIFICATIONS

Insulator Material:

Nylon 6/6

Contact Material:

Copper Alloy

Plating:

Au or Sn over

50 μ " (1.27 μ m) Ni

Latch:

Nylon 6/6

Operating Temp Range:

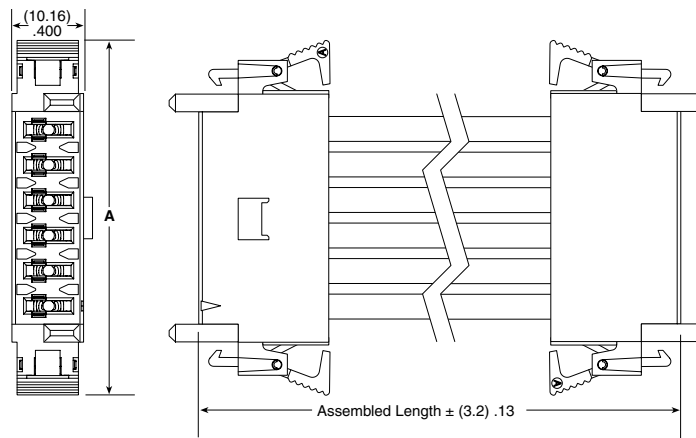
-30 °C to +105 °C

Voltage Rating:

600 VAC/848 VDC

Wire:

14 or 16 AWG

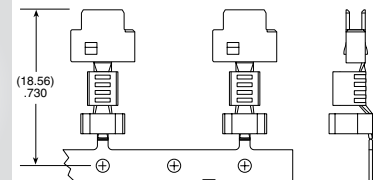
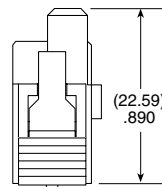
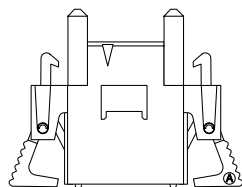
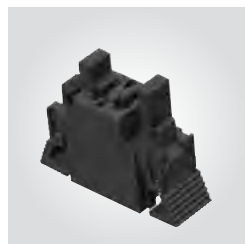


NO. OF POSITIONS	A
-02	(30.07) 1.184
-03	(35.07) 1.381
-04	(40.08) 1.578
-06	(50.09) 1.972
-08	(60.10) 2.366

MPSS/MPT-V	
WIRE GAUGE	CURRENT RATING (PER PIN)
14 AWG	19.7 A
16 AWG	15.9 A
1 PIN POWERED	

View complete specifications at: samtec.com?MPSS

IMS5	POSITIONS PER ROW	02	SERIES	WIRE GAUGE	01	PLATING OPTION
	-02, -03, -04, -06, -08		CC46L = Contact, Loose	-1416 = 14 to 16 AWG		-L = 10 μ " (0.25 μ m) Gold on contact -T = Matte Tin



TOOLING

Hand Tool: CAT-HT-246-1416-14 (14-16 AWG)

Mini Applicator: CAT-MC-246-1416-XX-02 (14-16 AWG)

Extraction Tool: CAT-EX-MPSS-01

Note:

Some lengths, styles and options are non-standard, non-returnable

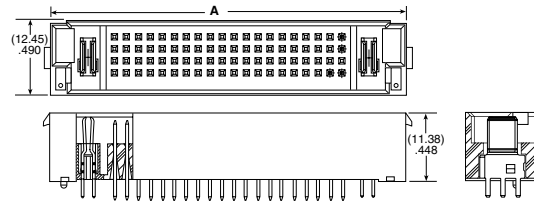
View complete specifications at: samtec.com?IMS5, samtec.com?CC46L & samtec.com?CC46R

(5.00 mm) .197"(PWR) / (2.00 mm) .079"(SIG) • 30 A SIGNAL/POWER COMBO SYSTEMS

SERIES	POWER PINS	SIGNAL PINS	POWER PINS	LEAD STYLE	TAIL LENGTH	PLATING OPTION	V	OTHER OPTION
MPTC Terminal	Per end -01	-16 -24	Per end -01	-6.30 = (6.30 mm) 0.248" (MPTC only)	-01 = Use with (1.60 mm) .062" Thick PCB	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail (Power & Signal)		-LC = Locking Clip (Manual placement required)
MPSC Socket	-02	-40 -80	-02	-7.70 = (7.70 mm) 0.303" (MPSC only)	-03 = Use with (2.36 mm) .093" Thick PCB	-T = Matte tin on contact and tail (power), Gold on contact, Matte tin on tail (Signal)		

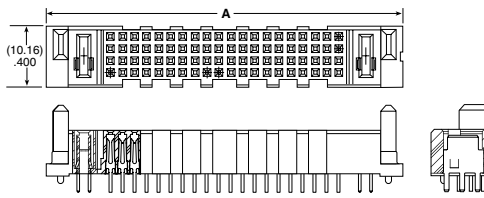
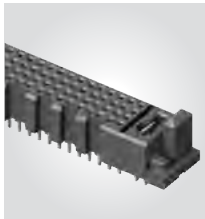
MPTC

Board Mates:
MPSC
Cable Mates:
MPCC



MPSC

Board Mates:
MPTC



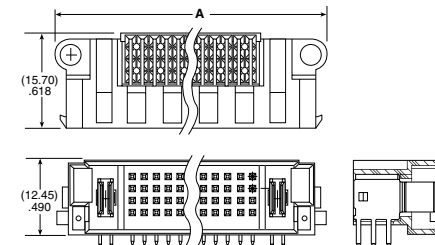
POWER PINS/ENDS	A			
	16 SIGNAL PINS	24 SIGNAL PINS	40 SIGNAL PINS	80 SIGNAL PINS
-01	(27.44) 1.081	(31.45) 1.238	(39.44) 1.553	(59.44) 2.340
-02	(37.44) 1.474	(41.45) 1.632	(49.44) 1.946	(69.44) 2.734

View complete specifications at: samtec.com?MPTC & samtec.com?MPSC

SERIES	POWER PINS	SIGNAL PINS	POWER PINS	01	TAIL LENGTH	PLATING OPTION	RA	OTHER OPTION
MPTC Terminal	Per end -01	-24 -80	Per end -01		-01 = Use with (1.60 mm) .062" Thick PCB	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail (Power & Signal)		-SD or -LC is a required callout
MPSC Socket	-02		-02		-03 = Use with (2.36 mm) .093" Thick PCB	-T = Matte Tin on contact and tail (power), Gold on contact, Matte tin on tail (Signal)		-SD = Screw Down -LC = Locking Clip (Manual placement required)

MPTC-RA

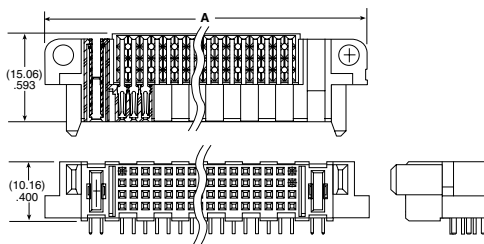
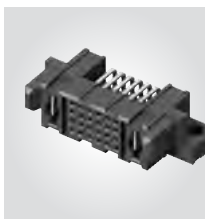
Board Mates:
MPSC
Cable Mates:
MPCC



POWER PINS/ENDS	A	
	24 SIGNAL PINS	80 SIGNAL PINS
-01	(35.25) 1.388	(63.25) 2.490
-02	(45.25) 1.781	(73.25) 2.884

MPSC-RA

Board Mates:
MPTC



POWER PINS/ENDS	A	
	24 SIGNAL PINS	80 SIGNAL PINS
-01	(36.25) 1.438	(64.25) 2.540
-02	(46.25) 1.831	(74.25) 2.934

View complete specifications at: samtec.com?MPTC & samtec.com?MPSC

Note: Some lengths, styles
and options are non-standard,
non-returnable



30 SIGNAL/POWER COMBO CABLE ASSEMBLY/COMPONENTS

MPCC	2	SIGNAL PINS	2	PLATING OPTION	LEAD STYLE	LENGTH	END 1 OPTION	END 2 OPTION
		-16 = Total Signal Pins		-L = 10 μ" (0.25 μm) Gold on contact, Tin on tail (Power & Signal)	Specify LEAD STYLE from chart	-"XX.XX" = Assembled Length in Inches (101.60 mm) 04.00" min.	-S = Single End	(Available with -D only)
		-24 = Total Signal Pins		-T = Tin on contact and tail (Power), Gold on contact, Tin on tail (Signal)			-D = Double End	-NUS = Notch up, straight (Pin A1 to Pin AX)

MPCC

Board Mates:

MPTC

SPECIFICATIONS

Insulator Material:

Black LCP

Contact Material:

Signal: BeCu

Power: Copper Alloy

Plating:

Sn or Au over 50 μ" (1.27 μm) Ni

Current Rating:

Signal Pin (24 AWG):

3.4 A per pin

(4 adjacent pins powered)

Power Pin (14 AWG):

23.2 A per pin

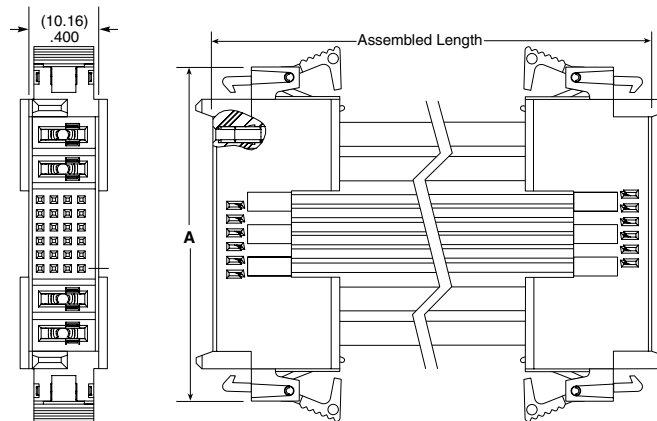
(1 pin powered)

Operating Temp Range:

-10 °C to +105 °C

Voltage Rating:

300 VAC

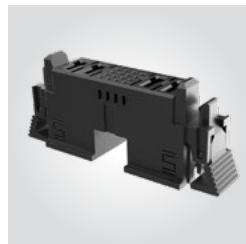


SIGNAL PINS	A
16	(44.55) 1.754
24	(48.55) 1.911

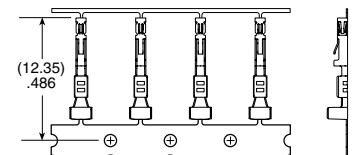
LEAD STYLE	PWR/SIG	AWG
-44	PWR	14
	SIG	24
-46	PWR	14
	SIG	26
-48	PWR	14
	SIG	28
-40	PWR	14
	SIG	30
-64	PWR	16
	SIG	24
-66	PWR	16
	SIG	26
-68	PWR	16
	SIG	28
-60	PWR	16
	SIG	30

View complete specifications at: samtec.com?MPCC

IMSC5	POWER PINS	SIGNAL PINS	POWER PINS	L	SERIES	WIRE GAUGE	01	PLATING OPTION
	-02 = Power Pins Per End	-16 = Total Signal Pins	-02 = Power Pins Per End	-L = Latch	CC81L = Contact, Loose	-2426 = 24 to 26 AWG		-L = 10 μ" (0.25 μm) Gold on contact
		-24 = Total Signal Pins			CC81R = Contact, Full Reel (17,000 Parts per Reel)	-2830 = 28 to 30 AWG		



SIGNAL PINS	A
-16	(44.55) 1.754
-24	(48.55) 1.911



Note: Power contact (CC46 Series) information on page 203.

TOOLING

Hand Tool: CAT-HT-281-2430-11 (Signal: 24-30 AWG)

CAT-HT-246-1416-11 (Power: 14-16 AWG)

Extraction Tool: CAT-EX-169-01 (Signal)

CAT-EX-MPSS-01 (Power)

Mini Applicator: CAT-MC-246-1416-XX-01 (Power 14-16 AWG)

CAT-MC-281-2426-XX-01 (Signal: 24-26 AWG)

CAT-MC-281-2830-XX-01 (Signal: 28-30 AWG)

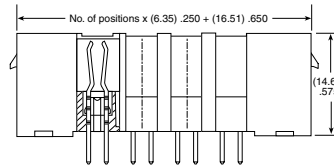
Note: Some lengths, styles and options are non-standard, non-returnable

View complete specifications at: samtec.com?IMSC5, samtec.com?CC81R & samtec.com?CC81L

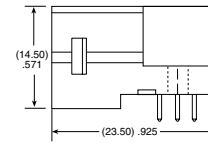
(6.35 mm) .250" PITCH • 40 A HIGH-POWER SYSTEM

SERIES	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	TAIL OPTION	OTHER OPTION
PET Terminal	-02, -04, -06, -08	-01 = Use with (1.60 mm) .062" Thick PCB -02 = Use with (3.18 mm) .125" Thick PCB	-L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail -T = Matte Tin on tail	-VT = Vertical -RA = Right-angle (Screw Down option required)	-SD = Screw Down (Right-angle only)
PES Socket					

PET
Board Mates:
PES
Cable Mates:
PES

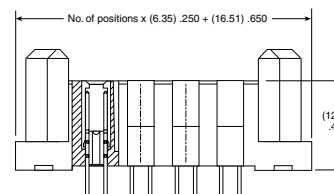


-VT

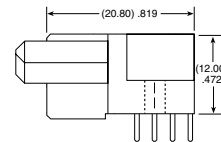


-RA-SD

PES
Board Mates:
PET



-VT

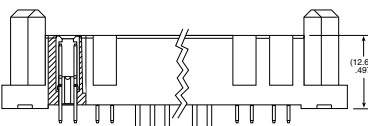
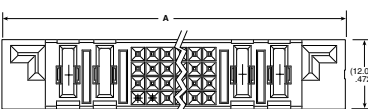
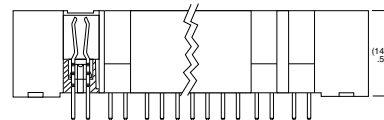
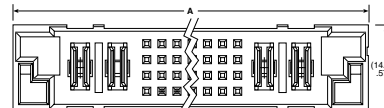


-RA-SD

View complete specifications at: samtec.com?PET & samtec.com?PES

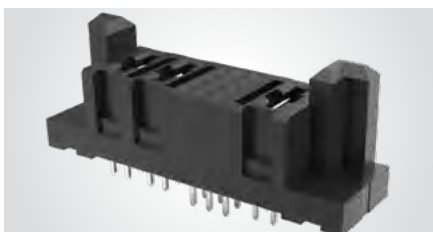
SERIES	POWER PINS	SIGNAL PINS	POWER PINS	01	PLATING OPTION	TAIL	OTHER OPTION
PETC Terminal	-01 -02 -04	-12 -40	-01 -02 -04		-L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail -T = Matte Tin	-VT = Vertical -RA = Right-angle	-SD = Screw Down (Right-angle only) -LC = Locking Clip (Manual placement required)
PESC Socket							

PETC
Board Mates:
PESC



POWER PINS/ENDS	A	
	12 SIGNAL PINS	40 SIGNAL PINS
-01	(39.37) 1.550	(57.15) 2.250
-02	(52.07) 2.050	(69.85) 2.750
-04	(77.47) 3.050	(95.25) 3.750

PESC
Board Mates:
PETC



View complete specifications at: samtec.com?PETC & samtec.com?PESC

Note:
Some lengths, styles and options are non-standard, non-returnable

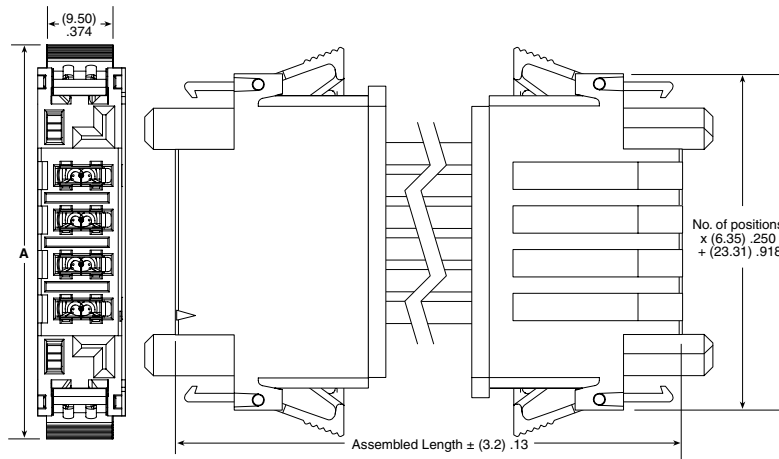


PESS	NO. OF POSITIONS	WIRE GAUGE	PLATING OPTION	ASSEMBLED LENGTH	END 1 OPTION	END 2 OPTION
	-02, -04, -06, -08	-10 -12	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail -T = Matte Tin on tail	-"XX.XX" = Wire length in inches (152.4 mm) 06.00" min.	-SR = Single End -DR = Double End	(Available with -DR only) -NUS = Notch up, straight (Available with -DR only) -NDS = Notch down, straight

PESS
Board Mates:
PET

SPECIFICATIONS

Insulator Material:
Nylon Black
Contact Material:
Copper Alloy
Plating:
Sn or Au over
50 μ" (1.27 μm) Ni
Operating Temp Range:
-30 °C to +105 °C
Voltage Rating:
600 VAC
846 VDC
Wire:
10 or 12 AWG

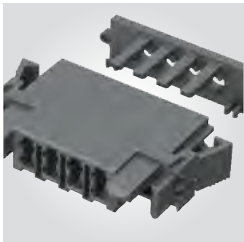
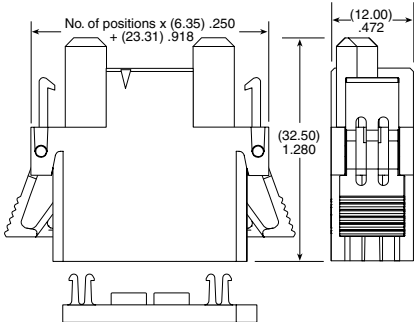


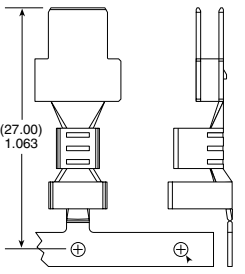
NO. OF POSITIONS	A
-02	(43.9) 1.73
-04	(56.6) 2.23
-06	(69.3) 2.73
-08	(82.0) 3.23

PESS/PET	
WIRE GAUGE	CURRENT RATING (PER PIN)
10 AWG	34.5 A
12 AWG	29.7 A
1 PIN POWERED	

View complete specifications at: samtec.com?PESS

IPS6	POSITIONS PER ROW	01	LATCH	SERIES	WIRE GAUGE	PLATING OPTION
	-02, -04, -06, -08		-L = Latch	CC10R = Contact, Full Reel CC10L = Contact, Loose	-1012 = 10 to 12 AWG	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail -T = Matte Tin on tail



TOOLING

Hand Tool: CAT-HT-310-1012-14
Mini Applicator: CAT-MC-310-1012-XX-02

Note:
Some lengths, styles and options are non-standard, non-returnable

View complete specifications at: samtec.com?IPS6, samtec.com?CC10L & samtec.com?CC10R

LOW-PROFILE, EXTREME HIGH-POWER/SIGNAL COMBO

FEATURES & BENEFITS

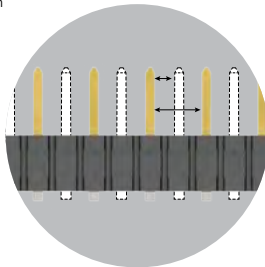
- 30 A per power blade and 1 A per signal pin
- Low 7.5 mm profile design (right-angle) for improved system airflow and space savings
- Double-stacked power blades per bank for increased density and power
- Ideal for coplanar and perpendicular applications
- Rugged guide posts are standard for blind mating assistance
- Socket available as vertical with press-fit tails and right-angle through-hole; mates with terminal or standard .062" (1.60 mm) PCB card



MAX
30
A m p s

Standard Creepage*	5.63 mm
Standard Clearance*	2.69 mm

*Selectively loading contacts achieves customer specific creepage and clearance requirements.
Contact asp@samtec.com



KEY SPECIFICATIONS

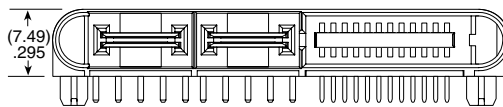
PITCH	INSULATOR MATERIAL	TERMINAL MATERIAL	PLATING	OPERATING TEMP RANGE	VOLTAGE RATING	MATING CYCLES	LEAD-FREE SOLDERABLE
(12.00 mm) .472" (pwr) (1.27 mm) .050" (sig)	Black LCP	Signal: Brass Power: Copper Alloy	Au or Sn over 50 μ" (1.27 μm) Ni	40 °C to +105 °C	250 VAC / 500 VDC	250 (MFG Tested)	Yes (RT1 & RT2 option)

Notes:
Series is rated up to 60 A per power bank.
Some lengths, styles and options are non-standard, non-returnable.
The Molex EXTreme LPHPower™ line is a second source to the Samtec LPHPT/LPHS Series.
*EXTreme LPHPower™ is a trademark of Molex Incorporated.

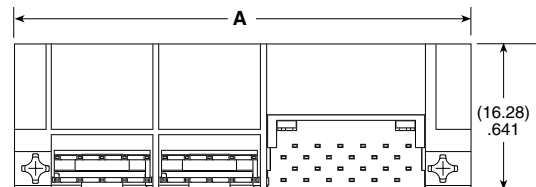
30 A SIGNAL/POWER COMBO SYSTEM

SERIES	POWER POSITIONS	SIGNAL POSITIONS	PLATING OPTION	TAIL	GP
LPHT Terminal LPHS Socket	Total, 2 per power bank -02, -04, -06, -08, -10	Total -16 -20 -24 -32	-L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail	-VP1 = Vertical Press-fit (LPHS only) -RT1 = Right-angle Through-hole (Use with (1.60 mm) .062" thick board) -RT2 = Right-angle Through-hole (Use with (2.36 mm) .093" thick board)	

LPHT
Board Mates:
LPHS

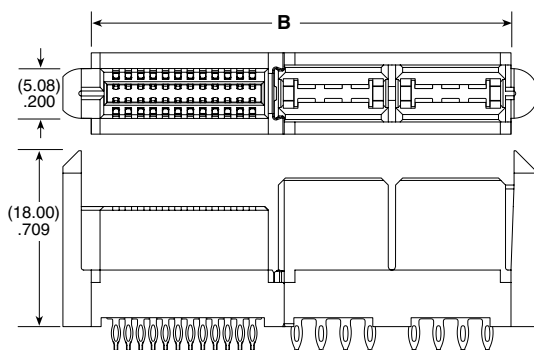


SIGNAL POSITIONS	POWER POSITIONS				
	A (-02)	A (-04)	A (-06)	A (-08)	A (-10)
-16	(33.97) 1.337	(45.97) 1.810	(57.97) 2.282	(69.97) 2.755	(81.97) 3.227
-20	(36.51) 1.437	(48.51) 1.910	(60.51) 2.382	(72.51) 2.855	(84.51) 3.327
-24	(39.05) 1.537	(51.05) 2.010	(63.05) 2.482	(75.05) 2.955	(87.05) 3.427
-32	(44.13) 1.737	(56.13) 2.210	(68.13) 2.682	(80.13) 3.155	(92.13) 3.627



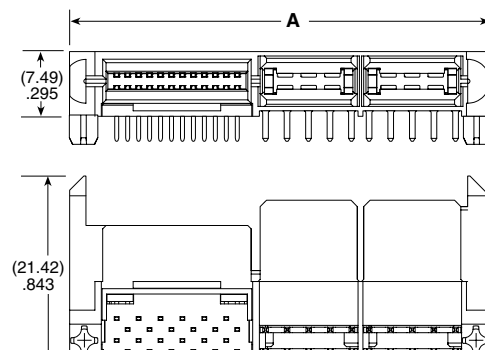
View complete specifications at: samtec.com?LPHT

LPHS
Board Mates:
LPHT



-VP

SIGNAL POSITIONS	POWER POSITIONS									
	A (-02)	B (-02)	A (-04)	B (-04)	A (-06)	B (-06)	A (-08)	B (-08)	A (-10)	B (-10)
-16	(31.64) 1.918	(25.88) 1.019	(43.64) 1.718	(37.88) 1.491	(55.64) 2.191	(49.88) 1.964	(67.64) 2.633	(61.88) 2.436	(79.64) 3.135	(73.88) 2.909
-20	(34.18) 1.346	(28.42) 1.119	(46.18) 1.818	(40.42) 1.591	(58.18) 2.291	(52.42) 2.064	(70.18) 2.763	(64.42) 2.536	(82.18) 3.235	(76.42) 3.009
-24	(36.72) 1.446	(30.96) 1.219	(48.72) 1.918	(42.96) 1.691	(60.72) 2.391	(54.96) 2.164	(72.72) 2.863	(66.96) 2.636	(84.72) 3.335	(78.96) 3.109
-32	(41.80) 1.646	(36.04) 1.419	(53.80) 2.118	(48.04) 1.891	(65.80) 2.591	(60.04) 2.364	(77.80) 3.063	(72.04) 2.836	(89.80) 3.535	(84.04) 3.309



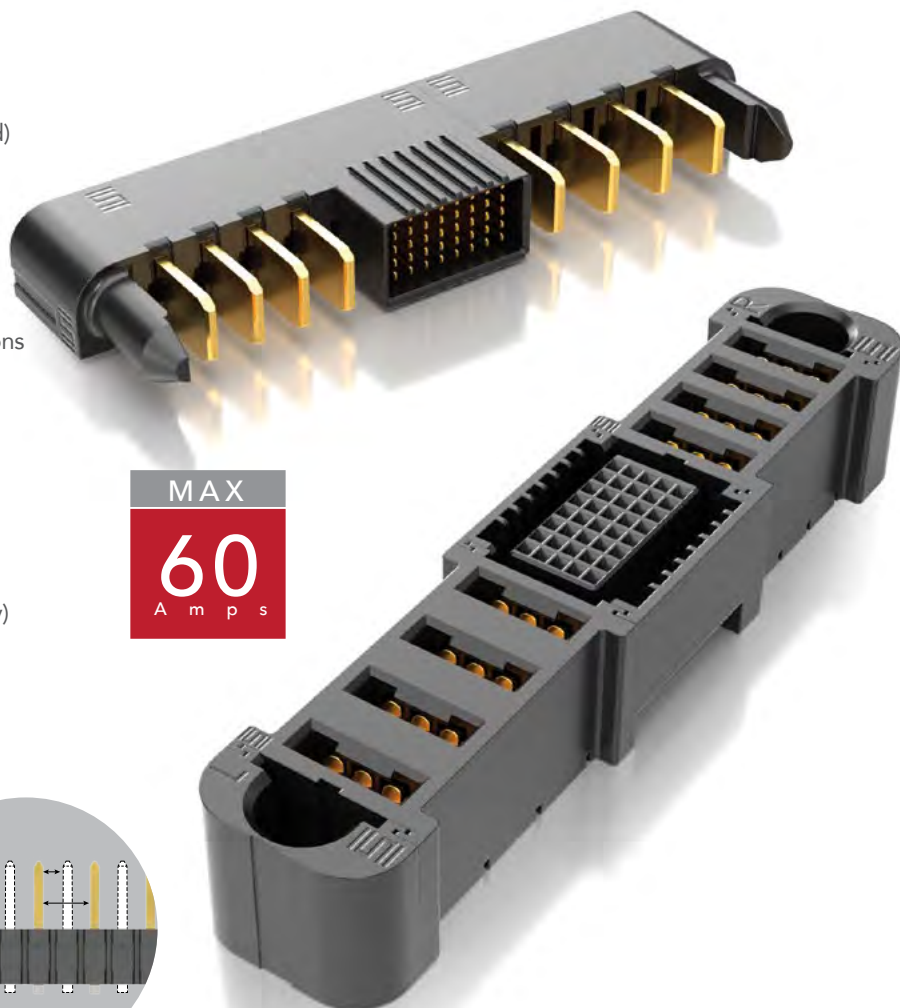
-RT

View complete specifications at: samtec.com?LPHS

EXTREME HIGH-POWER 60 A SYSTEMS

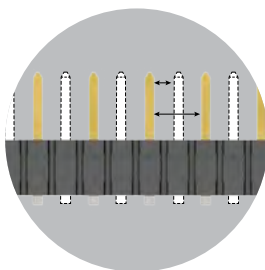
FEATURES & BENEFITS

- Up to 60 A per power blade (2 blades powered)
- Low 10 mm profile (right-angle) for enhanced system airflow
- Power only, or power/signal combinations
- 3 or 5 signal rows in the same form factor
- AC power, DC power, power/signal combinations and split power options available
- Coplanar and perpendicular applications
- Modules can be configured to accommodate most any design
- Rugged guide posts are standard; top design for board space savings
- Press-fit (ET60S only) and hot swap (ET60T only) options available



Standard Creepage*	3.02 mm
Standard Clearance*	1.87 mm

*Selectively loading contacts achieves customer specific creepage and clearance requirements.
Contact asp@samtec.com



KEY SPECIFICATIONS

PITCH		INSULATOR MATERIAL	TERMINAL MATERIAL	PLATING	OPERATING TEMP RANGE	VOLTAGE RATING	MATING CYCLES	LEAD-FREE SOLDERABLE
Power	(5.50 mm) .217" (7.50 mm) .295"	Black LCP	Signal: Phosphor Bronze Power: Copper Alloy	Au or Sn over 50 µ" (1.27 µm) Ni	-40 °C to +105 °C	280 VAC	500	Yes
Signal	(2.00 mm) .097" (5 row) (2.54 mm) .100" (3 row)							

Notes:

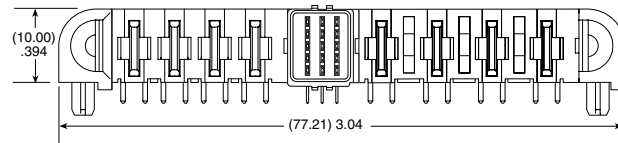
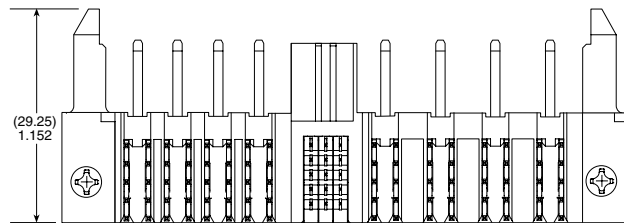
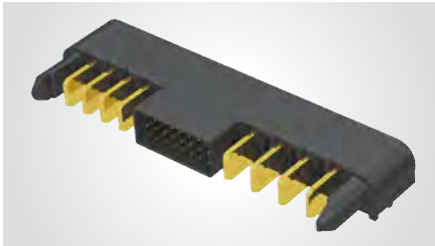
Some lengths, styles and options are non-standard, non-returnable.

*EXTreme Ten60Power™ is a trademark of Molex Incorporated and is dual sourced by Molex®

60 A SIGNAL/POWER COMBO SYSTEM

SERIES	POWER OPTION (R)	ROWS	SIGNAL POS. PER ROW	POWER OPTION (L)	PLATING	TAIL	GUIDE POST	OPTION
ET60T Terminal	-AXX = AC Power Positions (02 - 06)	-0 = No Signal	-00 = No Signal	-AXX = AC Power Positions (02 - 06)	-L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail (Not available for 5 rows)	-VP = Vertical Press-fit	(Required callout)	(Leave blank for no hot swap)
ET60S Socket	-DXX = DC Power Positions (02 - 10)	-3	-08 = 3 Row only	-DXX = DC Power Positions (02 - 10)	-S = 30 μ " (0.76 μ m) Gold on contact, Matte tin on tail	-V1 = Vertical through-hole (Use with (1.60 mm) .062" thick card) (-0 and -3 Row only)	-S = Side Guide Post	-H = Hot Swap (ET60T only)
	-SXX* = Split Power	-5	-01, -02, -03, -04, -05, -06, -07, -08 = 5 Row only	-SXX* = Split Power		-R1 = Right-angle through-hole (Use with (1.60 mm) .062" thick card) (required for ET60T)	-T* = Top Guide Post	
	-000 = No Power			-000 = No Power				

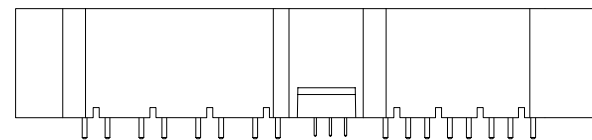
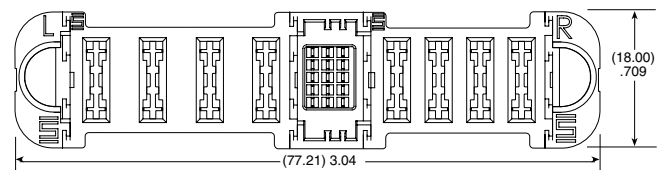
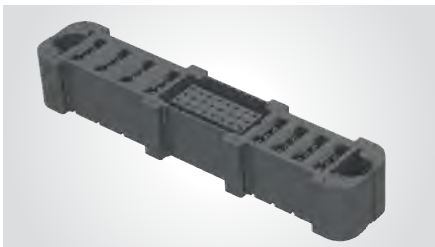
ET60T
Board Mates:
ET60S



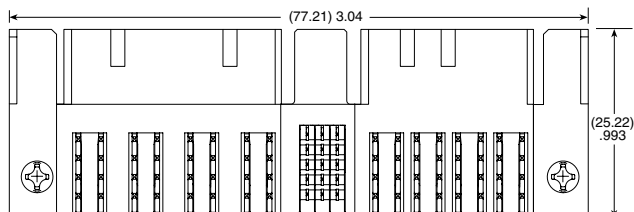
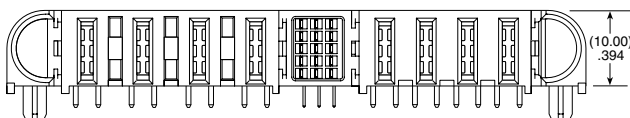
ET60T-D04-5-03-A04-X-R1-S SHOWN

View complete specifications at: samtec.com?ET60T

ET60S
Board Mates:
ET60T



VERTICAL
ET60S-D04-5-03-A04-X-VP-S SHOWN



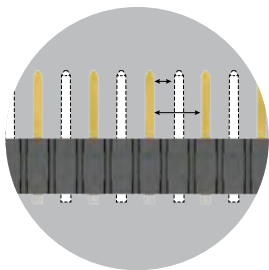
RIGHT-ANGLE
ET60S-D04-5-03-A04-X-R1-S SHOWN

View complete specifications at: samtec.com?ET60S

FLEXIBLE POWER SYSTEMS

FEATURES & BENEFITS

- Board-to-board and discrete wire cable systems
- Power Mate® system with polarized guide posts
- Mini Mate® system with reliable Tiger Buy™ contacts
- Individually shrouded contacts
- Elevated stack heights
- Optional polarization
- Vertical and right-angle for parallel, perpendicular and coplanar applications
- Rugged metal or plastic latching systems
- Cable components and tooling available



Selectively loading contacts achieves customer specific creepage and clearance requirements.

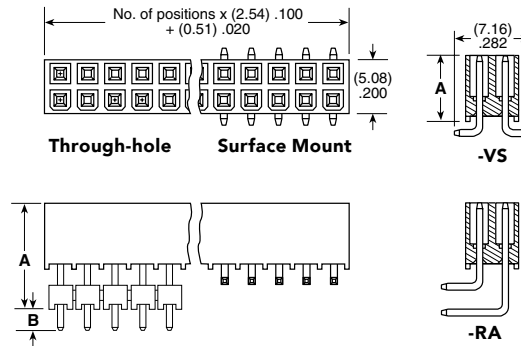
KEY SPECIFICATIONS

SERIES	IPT1/IP51	IPBT/IPBS	HPM/HPW/HPF	FWJ/HFWJ/FHP
PITCH	(2.54 mm) .100"	(4.19 mm) .165"	(5.08 mm) .200"	(3.96 mm) .156"
CCC (1 PIN)*	5.9 A	10.3 A /pin (2 pins powered)	16.6 A	13.1 A
CCC (2 PINS)*	4.8 A	8.4 A /pin (4 pins powered)	14.4 A	11.2 A
CCC (3 PINS)*	4.1 A	7.6 A /pin (6 pins powered)	13.2 A	10.3 A
CREEPAGE	(2.54 mm) .100"	(4.27 mm) .168"	(3.94 mm) .155"	(3.92 mm) .154"
CLEARANCE	(1.91 mm) .075"	(3.05 mm) .120"	(3.94 mm) .155"	(2.82 mm) .111"
VAC	775	400	850	600
VDC	1095	565	1200	845
CYCLES	1000 (MFG Tested)	100	100	100

(2.54 mm) .100" PITCH • SHROUDED POWER CONNECTOR SET

IPT1	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	D	TAIL OPTION	OTHER OPTIONS
		05	Specify LEAD STYLE from chart	-L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail		Requires -01 Lead Style (Leave blank for Through-hole)	-A = Alignment Pin (-VS only) (N/A with -LC)
		10					
		15					
		20					
		25 (Standard Sizes)					
						-RA = Right-angle	-LC = Locking Clip (Manual placement required) (-VS only) (N/A with -A)
						-VS = Surface Mount	-K = (6.00 mm) .236" DIA Polyimide film Pick & Place Pad (-VS only)
							-TR = Tape & Reel (-VS only)
							-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (-VS only)

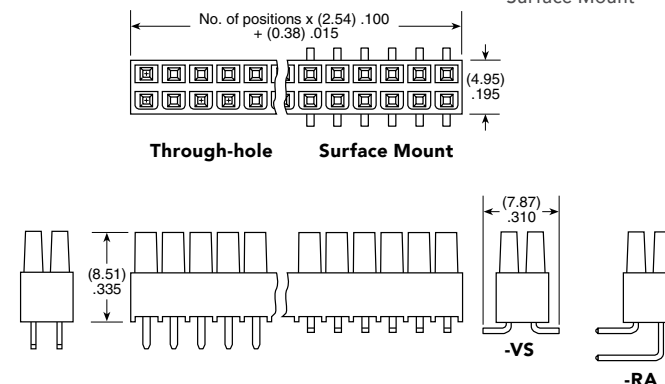
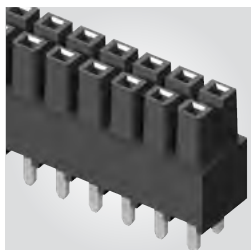
IPT1
Board Mates:
IPS1



LEAD STYLE	MATED HEIGHT	A	B
-01	(11.05) .435	(6.35) .250	(2.16) .085
-01-VS	(13.59) .535	(6.35) .250	N/A
-02	(14.00) .551	(9.30) .366	(2.64) .104
-03	(16.00) .630	(11.30) .445	(2.16) .085
-04	(17.00) .669	(12.30) .484	(2.69) .106
-05	(19.00) .748	(14.30) .563	(2.46) .097
-06	(20.00) .787	(15.30) .602	(2.35) .093
-07	(25.00) .984	(20.30) .799	(2.31) .091
-08	(30.00) 1.181	(25.30) .996	(2.39) .094
-09	(35.00) 1.378	(30.30) 1.193	(2.46) .097

IPS1	1	NO. PINS PER ROW	01	PLATING OPTION	D	TAIL OPTION	OTHER OPTIONS
		05		-L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail		Leave blank for Through-hole	-LC = Locking Clip (Manual placement required) (-VS only)
		10					
		15					
		20					
		25 (Standard Sizes)					
						-RA = Right-angle	-K = (5.50 mm) .217" DIA Polyimide film Pick & Place Pad (-VS only)
						-VS = Surface Mount	-TR = Tape & Reel (-VS only)
							-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (-VS only)

IPS1
Board Mates:
IPT1



Note:
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?IPT1 & samtec.com?IPS1

IPL1	1	PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	TAIL OPTION	K	OPTION
		02, 03, 04, 05, 06, 08, 10, 12, 15, 16, 20, 25 (Standard sizes)	-01 = Through-hole -02 = Surface Mount	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail	-S = Single Row -SH = Single Row Horizontal (-02 lead style only) -D = Double Row	-RA = Right-angle (-01 lead style only) -RE1 = Right-angle Elevated (-01 lead style only) (-K is a required callout)	-K = Keyed Polarization	-TR = Tape & Reel (-02 lead style only) Comes with Polyimide Pick & Place Pad -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (-02 lead style only) Comes with Polyimide Pick & Place Pad

IPL1

Cable Mates:

MMSD, MMSS,
MMSDT, MMSST

SPECIFICATIONS

Insulator Material:

Natural LCP

Terminal Material:

Phosphor Bronze

Plating:

Sn or Au over

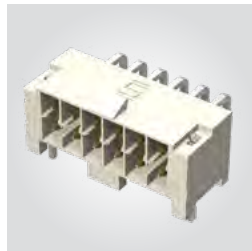
50 μ" (1.27 μm) Ni

Operating Temp Range:

-55 °C to +125 °C

Voltage Rating:

675 VAC/954 VDC



MMSD/IPL1	
WIRE GAUGE	CURRENT RATING (PER PIN)
20	4.8 A
22	4.3 A
24	3.9 A
26	3.5 A
28	2.6 A
30	2.1 A
2 PINS POWERED	

PROCESSING

Lead-Free Solderable:

Yes

-S & -D (-02 Lead Style)

SMT Lead Coplanarity:

(0.10 mm) .004" max (02-05)

(0.13 mm) .005" max (06-10)*

(0.15 mm) .006" max (11-25)*

*(.004" stencil solution

may be available; contact

IPG@samtec.com)

-SH SMT Lead Coplanarity:

(0.15 mm) .006" max (02-25)*

*(.004" stencil solution

may be available; contact

IPG@samtec.com)

ALSO AVAILABLE

MOQ Required

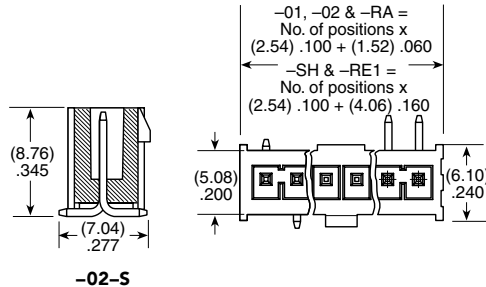
Other sizes

With or without plug polarization

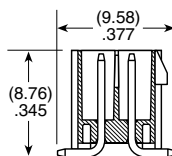
Guide post holes

Other platings

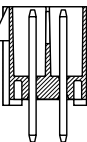
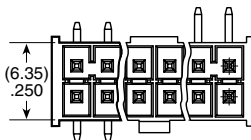
Weld tab



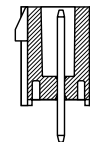
-02-S



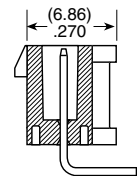
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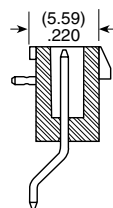
-01-D



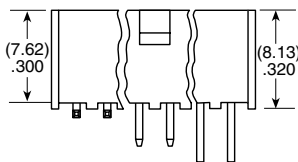
-01-S



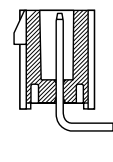
-01-S-RE1



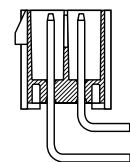
-02-SH



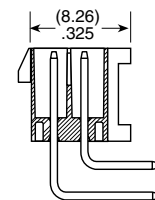
-02 -01 -RA



-01-S-RA



-01-D-RA



-01-D-RE1

Note:

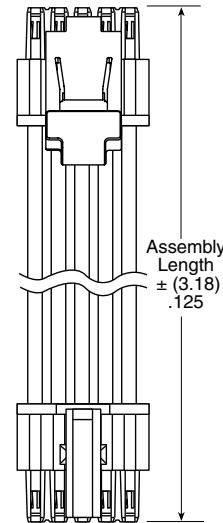
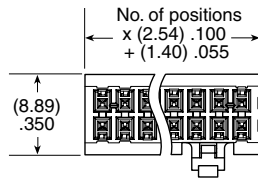
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?IPL1



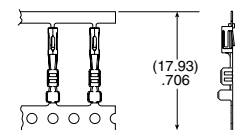
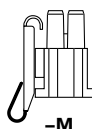
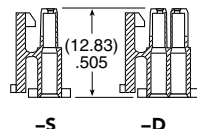
SERIES	PINS PER ROW	WIRE GAUGE	PLATING OPTION	ASSEMBLY LENGTH	END OPTION	K	LATCH OPTION
MMSD = Double Row PVC Cable	-02, -03,	-20	-L = 10 μ" (0.25 μm) Gold on contact, Tin on tail	-“XX.XX” = Assembly Length in Inches (82.55 mm) 03.25" min.	-S = Single Ended	-K = Keyed Polarization	(Metal latches for more rugged environments; -02, -05 & -10 positions only)
MMSDT = Double Row Blue *Teflon® Cable (20, 24, 28, 30 AWG only)	-04, -05,	-20C = Color Coded Cable (MMSD & MMSS only)			-D = Double Ended (Latch Required)		-M = Single Ended, Metal Latches (Leave blank for plastic)
MMSS = Single Row PVC Cable	-06, -08,	-22, -24					Double Ended (-D) Crossed requires MMSD/MMSDT
MMSST = Single Row Blue *Teflon® Cable (20, 24, 28, 30 AWG only)	-10, -12,	-24C = Color Coded Cable (MMSD & MMSS only)					-LUS = Plastic Latch up, straight
MMSD, MMSDT, MMSS, MMSST Board Mates: IPL1 (Does not mate with IPT1)	-15, -16,	-26, -28					-LDS = Plastic Latch down, straight
Cable Mates: MMTD(T), MMTS(T)	-20, -25 (Standard sizes)	-28C = Color Coded Cable (MMSD & MMSS only)					-LUX = Plastic Latch up, crossed
* Dupont™ Teflon® is a registered trademark of E.I. du Pont de Nemours and Company or its affiliates.		-30					-LDX = Plastic Latch down, crossed
Teflon® cable is intended for crimp only. Contact Samtec for solderable cable applications.							-MUS = Metal Latch up, straight
							-MDS = Metal Latch down, straight
							-MUX = Metal Latch up, crossed
							-MDX = Metal Latch down, crossed

-20C, -24C, -28C CABLE COLOR CODING	
PIN	COLOR
1	BROWN
2	RED
3	ORANGE
4	YELLOW
5	GREEN
6	BLUE
7	VIOLET
8	GRAY
9	WHITE
10	BLACK
ETC	REPEAT



View complete specifications at: samtec.com?MMSD, samtec.com?MMSDT, samtec.com?MMSS & samtec.com?MMSST

IPD1	POSITIONS PER ROW	ROW OPTION	K	LATCH OPTION	SERIES	WIRE GAUGE	01	PLATING OPTION
	-02, -03, -04, -05, -06, -08, -10, -12, -15, -16, -20, -25 (Standard sizes)	-S = Single Row -D = Double Row	-K = Keyed Polarization	-M = Metal Latch (Metal for more rugged environments) (-02, -05 & -10 positions only) (Leave blank for plastic latch)	CC79L = Contact, Loose	-2630 = 26 to 30 AWG		-L = 10 μ" (0.25 μm) Gold on contact, Tin on tail
					CC79R = Contact, Full Reel (12,000 Parts per Reel)	-2024 = 20 to 24 AWG		



TOOLING

Hand Tool: CAT-HT-179-2030-13 (20-30 AWG)

Mini Applicator: CAT-MC-179-2024-XX-01 (20-24 AWG)

Mini Applicator: CAT-MC-179-2630 XX-01 (26-30 AWG)

Extraction Tool: CAT-EX-179-01

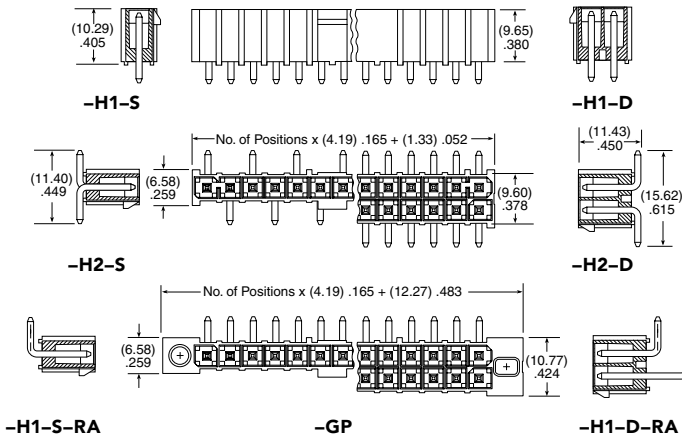
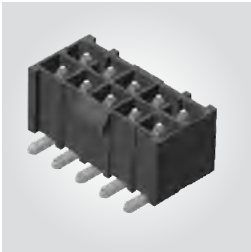
Not:
Some lengths, styles and
options are non-standard,
non-returnable.

View complete specifications at: samtec.com?IPD1, samtec.com?CC79L & samtec.com?CC79R

(4.19 mm) .165" PITCH • ISOLATED POWER CONNECTOR SET

IPBT	1	NO. OF POSITIONS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OPTIONS
		02, 03, 04, 05, 08, 10	-H1 = Through-hole	-T = Matte Tin	-S = Single Row	-RA = Right-angle (Lead Style -H1 only)
		15 (-D Only) (Standard Sizes)	-H2 = Surface Mount		-D = Double Row	-GP = Guide Post Holes (Not available with -K)
						-K = Keyed Polarization (not available with -GP option, is required callout if -GP not called out)

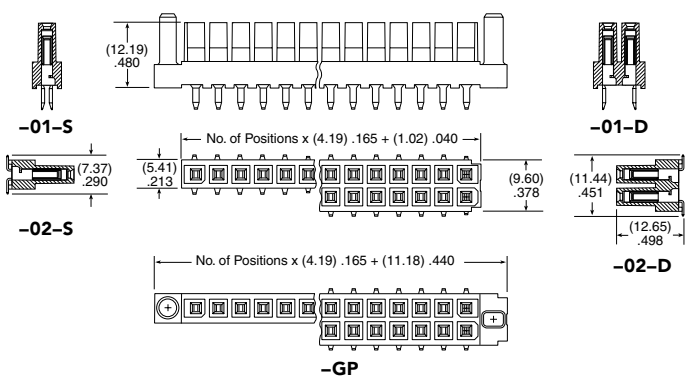
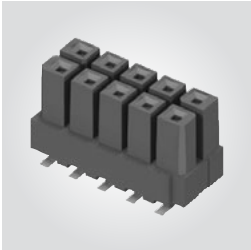
IPBT
Board Mates:
IPBS
Cable Mates:
PMSSD, PMSS



IPBT/IPBS	
PINS POWERED	CURRENT RATING (PER CONTACT)
2	10.3 A
4	8.4 A
6	7.6 A
8	7.1 A
30	6.0 A

IPBS	1	NO. OF POSITIONS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OPTION
		02, 03, 04, 05, 08, 10	-01 = Standard Power	-T = Matte Tin	-S = Single Row	-GP = Guide Post
		15 (-D Only) (Standard Sizes)	-02 = Standard Power Surface Mount		-D = Double Row	

IPBS
Board Mates:
IPBT



MATED HEIGHT	
IPBT/IPBS LEAD STYLE	MATED HEIGHT*
H1/-01	(15.25) .600
-H2/-02	(16.84) .663
*Processing conditions will affect mated height.	

Note:
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?IPBT & samtec.com?IPBS



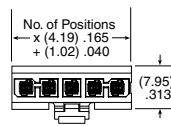
SERIES	PINS PER ROW	WIRE GAUGE	K	ASSEMBLED LENGTH	END OPTION	LATCH OPTION
PMSSD = Double Row PVC Cable	-02, -03	-16	-K = Keyed Polarization	-"XX.XX" = Wire length in inches (88.90 mm) 03.50" min.	-S = Single End	-LUS = Plastic Latch up, straight
PMSSDT = Double Row Blue *Teflon® Cable (24 AWG only)	-04, -05	-18				-LDS = Plastic Latch down, straight
PMSS = Single Row PVC Cable	-08, -10	-206 (20 AWG/ 600 volts)			-D = Double End (Latch Required)	-LUX* = Plastic Latch up, crossed
PMSSS = Single Row Blue *Teflon® Cable (24 AWG only)	-15* (Standard sizes) *Only available for double row	-22				-LDS* = Plastic Latch down, crossed
		-24				*(PMSSD/PMSSDT only)

PMSSD, PMSSDT, PMSS, PMSSS Board Mates:

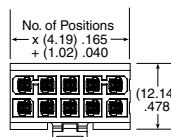
IPBT
*DuPont™ Teflon® is a registered trademark of the E.I. du Pont de Nemours and Company or its affiliates.

Notes:
Teflon® cable is intended for crimp only. Contact Samtec for solderable cable applications.

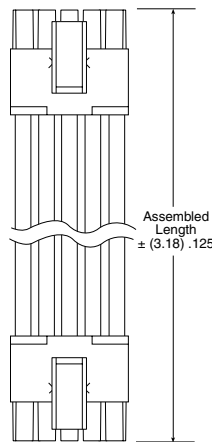
For wiring option information refer to drawing on web.



PMSS/PMSSS



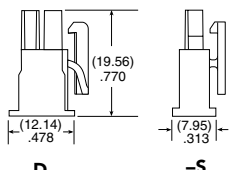
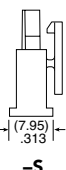
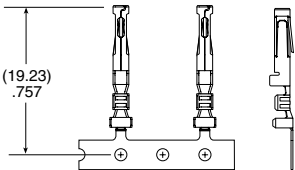
PMSSD/PMSSDT



PMSSD/IPBT	
WIRE GAUGE	CURRENT RATING (PER PIN)
16 AWG	10.3 A
18 AWG	8.8 A
22 AWG	5.7 A
24 AWG	5.2 A

2 PIN POWERED

View complete specifications at: samtec.com?PMSSD, samtec.com?PMSSDT, samtec.com?PMSS & samtec.com?PMSSS

IPBD	POSITIONS PER ROW	ROW OPTION	K	SERIES	WIRE GAUGE	01	T	SP
	-02, -03, -04, -05, -08, -10, -15 (Standard sizes)	-S = Single Row -D = Double Row	-K = Keyed Polarization	CC69L = Contact, Loose CC69R = Contact, Full Reel (4,000 Parts per Reel)	-2024 = 20 to 24 AWG -1620 = 16 to 20 AWG		-T = Tin	
  				 				

TOOLING

Hand Tool: CAT-HT-169-1620-13 (16-20 AWG)
Hand Tool: CAT-HT-169-2024-13 (20-24 AWG)

Mini Applicator: CAT-MC-169-1620-XX-01 (16-20 AWG)
Mini Applicator: CAT-MC-169-2024 XX-01 (20-24 AWG)
Extraction Tool: CAT-EX-169-01

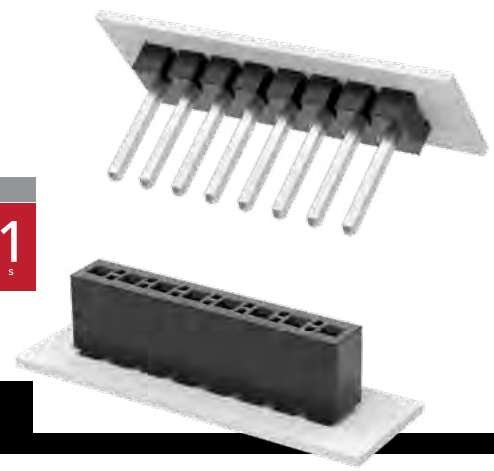
Note:
Some lengths, styles and options are non-standard, non-returnable.

View complete specifications at: samtec.com?IPBD, samtec.com?CC69L & samtec.com?CC69R

POWER HEADERS, STACKERS & SOCKETS

(3.96 mm) .156" PITCH • FWJ, HFWJ, JW, FHP SERIES

MAX
13.1
A m p s



FWJ, HFWJ, JW Board Mates:

FHP

FHP

Board Mates:

FWJ, HFWJ, JW

SPECIFICATIONS

Insulator Material:

FWJ = Black Glass Filled Polyester
HFWJ, JW = Natural Liquid Crystal Polymer
FHP = Black LCP

Terminal Material

(FWJ, HFWJ, JW):

Phosphor Bronze

Contact Material (FHP):

BeCu

Plating:

Sn over 50 μ " (1.27 μ m) Ni

Operating Temp Range:

-55 °C to +105 °C

Voltage Rating:

600 VAC/845 VDC

Insertion Depth (FHP):

(3.57 mm) .140" to

(8.76 mm) .345" or

pass-through from top

Wiping Distance (FHP):

(0.38 mm) .015"

PROCESSING

Lead-Free Solderable:

FWJ = No, Lead Wave only

HFWJ, JW, FHP = Yes

SMT Lead Coplanarity:

HFWJ, FWJ, JW = (0.20 mm)

.008" max (02-16)*

(0.25 mm) .010" max (17-24)*

FHP = (0.15 mm) .006" max*

*(.004" stencil solution

may be available; contact

ipg@samtec.com)

SERIES	NO. OF PINS	LEAD STYLE	PLATING OPTION	S	OTHER OPTIONS
--------	-------------	------------	----------------	---	---------------

FWJ
Standard
Header

01 thru 24

Specify
LEAD
STYLE
from
chart
below

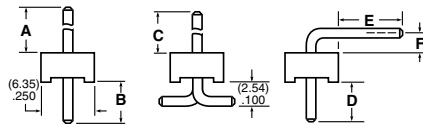
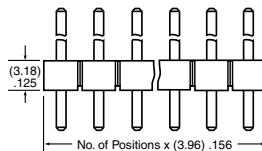
-T
= Matte Tin

Leave blank for Through-hole

-RA
= Right-angle (Style -02 & -04 only)

-VS
= Surface Mount Requires HFWJ
(2 pins/row minimum)
Style -05 not available.

-P
= Pick & Place Pad (3 Pos. min.)
(6.98 mm) .275" min. post height
(-VS only)



LEAD STYLE	A	B	C	D	E	F
-01	(11.43) .450	(4.45) .175	(10.46) .412	-	-	-
-02	(12.70) .500	-	(11.73) .462	(4.45) .175	(8.13) .320	(2.54) .100
-04	(20.55) .809	(3.96) .156	(19.10) .752	(3.96) .156	(13.56) .534	(4.95) .195
-05*	(3.81) .150	(12.07) .475	-	-	-	-

*FWJ Only

JW	NO. OF PINS	04	PLATING OPTION	S	STACK HEIGHT	POST HEIGHT	OTHER OPTIONS
----	-------------	----	----------------	---	--------------	-------------	---------------

02 thru 24

-T
= Matte Tin

- "XXX"
= Stacker
Height
(in inches)
(0.13 mm) .005"
increments

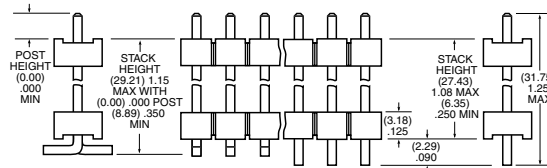
Example: -250
= (6.35 mm)
.250"

- "XXX"
= Post Height
(in inches)

Leave blank for
Through-hole

-VS
= Surface Mount
(2 pins/row minimum)

-P
= Pick & Place Pad
(3 Pos. min.)
(6.98 mm) .275" min.
post height (-VS only)



FHP	NO. OF PINS	LEAD STYLE	PLATING OPTION	S	OTHER OPTIONS
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02 thru 24

-01
= Through-hole

-T
= Matte Tin

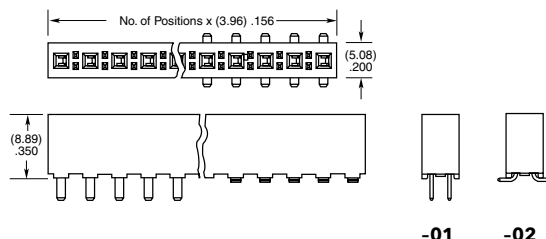
-02
= Surface Mount

-LC
= Locking
Clip
(Manual placement
required)
(-02 lead style only)

-TR
= Tape & Reel
Packaging
(Available on
positions 2-18)
(-02 lead style only)

-K
= (6.50 mm)
.256" DIA
Polyimide film
Pick & Place Pad
(2-4 positions
require -"X"R)
(-02 lead style only)

-FR
= Full Reel
Tape & Reel
(must order max.
quantity per reel;
contact Samtec for
quantity breaks)
(Available on
positions 2-18)
(-02 lead style only)



Note:
Some lengths, styles and
options are non-standard,
non-returnable.

samtec.com?FWJ, samtec.com?HFWJ, samtec.com?JW or samtec.com?FHP

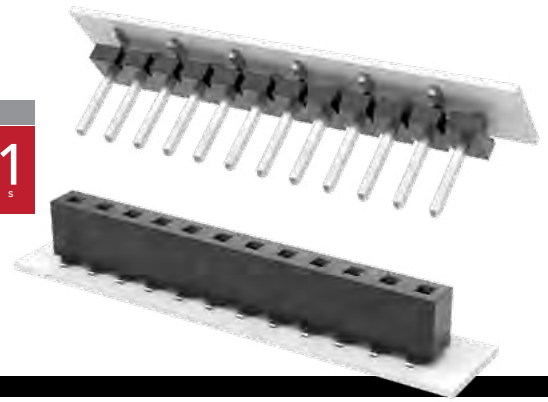
F-221 (Rev 11FEB21)

Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec's specifications which are subject to change without notice.

POWER HEADERS, STACKERS & SOCKETS

(5.08 mm) .200" PITCH • HPM, HPW, HPF SERIES

MAX
16.1
A m p s



HPM, HPW
Board Mates:
HPF

HPF
Board Mates:
HPM, HPW

SPECIFICATIONS

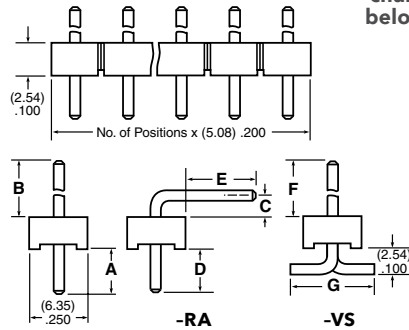
Insulator Material:
HPW/HPM = Glass Filled Polyester (Through-hole), Natural Liquid Crystal Polymer (Surface Mount)
HPF = Black LCP
Terminal Material (HPM/HPW):
Copper Alloy
Contact Material (HPF):
BeCu
Plating:
Sn over 50 μ " (1.27 μ m) Ni
Operating Temp Range:
-55 °C to +105 °C
Voltage Rating:
HPM/HPF = 850 VAC/1200 VDC
Insertion Depth (HPF):
(3.68 mm) .145" to (8.26 mm) .325" (.368" (9.35 mm) plus board thickness minimum for bottom entry)
Wiping Distance (HPF):
(0.38 mm) .015"

PROCESSING

Lead-Free Solderable:
HPW-VS, HPM-VS, HPF = Yes
HPM -TH, HPM -RA & HPW -TH = No, Lead Wave only
SMT Lead Coplanarity:
HPM = (0.20 mm) .008" max (02-15)*
HPM = (0.25 mm) .010" max (16-20)*
HPW = (0.20 mm) .008" max* (02-10)*
HPF = (0.15 mm) .006" max (02-10)*
(0.20 mm) .008" max (11-20)*
*(.004" stencil solution may be available; contact ipg@samtec.com)

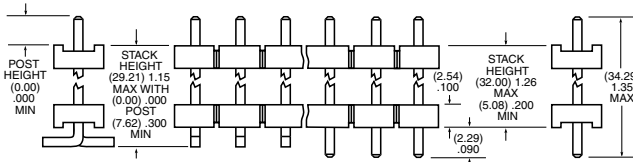
Note:
Some lengths, styles and options are non-standard, non-returnable.

HPM	NO. OF PINS	LEAD STYLE	PLATING OPTION	S	TAIL OPTION	OTHER OPTION
High Temp High Power Header	01 thru 20	Specify LEAD STYLE from chart below	-T = Matte Tin		Leave blank for Through-hole -RA = Right-angle (-02 & -04 lead style only) -VS = Surface Mount (2 pins/row minimum) (-01 & -02 lead style only)	-P = Pick & Place Pad (3 Pos. min.) (-VS only) (Not Available with -05 lead style)

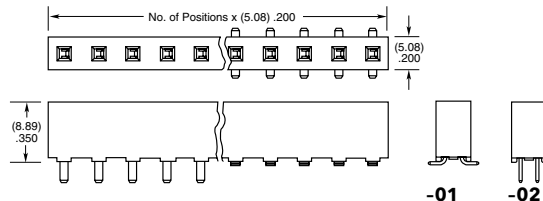


LEAD STYLE	A	B	C	D	E	F	G
-01	(4.57) .180	(11.94) .470	-	-	-	(10.72) .422	(8.64) .340
-02	(4.57) .180	(13.21) .520	(2.54) .100	(4.57) .180	(8.08) .318	(12.24) .482	(8.38) .330
-04	(4.09) .161	(21.06) .829	(4.95) .195	(3.96) .156	(13.82) .544	-	-
-05	(4.57) .180	(3.81) .150	-	-	-	-	-

HPW	NO. OF PINS	PLATING OPTION	S	STACK HEIGHT	POST HEIGHT	OTHER OPTIONS
High Temp High Power	02 thru 20	-T = Matte Tin		- "XXX" = Stacker Height (in inches) (0.13 mm) .005" increments	- "XXX" = Post Height (in inches)	Leave blank for Through-hole -VS = Surface Mount (2 pins/row minimum) -P = Pick & Place Pad (3 Pos. min.) (6.98 mm) .275" min. post height (-VS only)



HPF	NO. OF PINS	LEAD STYLE	PLATING OPTION	S	OTHER OPTIONS
	02 thru 20	-01 = Through-hole -02 = Surface Mount	-T = Matte Tin		-LC = Locking Clip (Manual placement required) (-02 lead style only) -TR = Tape & Reel Packaging (14 positions max.) (Style -02 only) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (14 positions max.) (Style -02 only) -K = (6.50 mm) .256" DIA Polyimide film Pick & Place Pad



ACCLIMATE™

FLEXIBLE SEALED CIRCULAR SYSTEMS



FEATURES & BENEFITS

- Metal or plastic, 12 mm, 16 mm and 22 mm shells
- Choice of pin configuration and gender
- Bayonet-style latching systems meet IP68 requirements
- Cost-effective crimp version available (samtec.com/crimp)
- Variety of end 2 options for panel-to-board applications
- Mini push-pull latching system meets IP67 requirements for dust and waterproof sealing



Kitted components
for efficient field
assembly



Dust caps
available

ACX-12

MAX

5.0
A m p s

No. of Pins
2, 4, 5

ACX-16

MAX

11.6
A m p s

No. of Pins
2, 10, 14

ACX-22

MAX

8.3
A m p s

No. of Pins
8, 20, 30

KEY SPECIFICATIONS

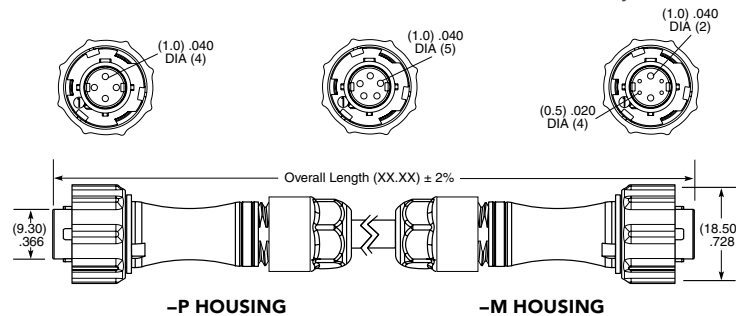
INSULATOR MATERIAL	TERMINAL MATERIAL	CONTACT MATERIAL	OPERATING TEMP RANGE	HOUSING
Thermoplastic	Brass	Brass/BeCu	-10 °C to +80 °C (ACX-12) -10 °C to +105 °C (ACX-16) -10 °C to +105 °C (ACX-22)	Thermoplastic (-P) Zinc Alloy (-M)

12 mm • IP68 SEALED CABLE ASSEMBLY

SERIES	12	LEAD STYLE	PLATING OPTION	LENGTH	END 1	END 2	HOUSING MATERIAL	KEYING OPTIONS
ACP Terminal		-01 = 1.0 mm DIA (4) terminals or sockets (24 AWG)	-G = 10 μ" (0.25 μm) Gold over 50 μ" (1.27 μm) Ni on contact	- "XX.XX" = Length in meters (00.25 m min. to 50.00 m max.) Standard lengths	-T = Terminal	-T = Terminal (ACP only)	-P = Plastic	-1 = Orange, 45°
ACR Socket		-02 = 1.0 mm DIA (5) terminals or sockets (24 AWG)			-S = Socket (N/A with End 2 -T)	-S = Socket (ACP only)	-M = Metal	
		-05 = 1.0 mm DIA (2) terminals or sockets (24 AWG) + 0.5 mm DIA (4) terminals or sockets (28 AWG)				-BC = Blunt Cut -S1 = Connector determine by lead style. See chart for end 2 connector used. (ACR only)		

ACP-12

End 1/2 Mates:
ACP-12
ACRK-12

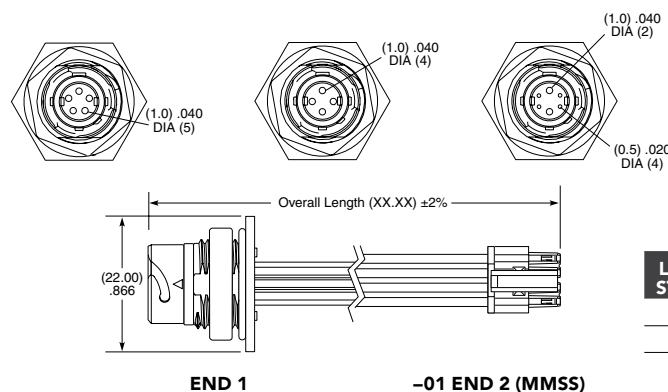


View complete specifications at: samtec.com?ACP-12

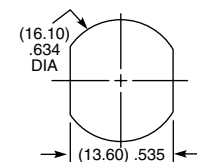
ACR-12

End 1 Mates:
ACP-12
ACPK-12

End 2 Mates:
IPL1



PANEL OPENING



LEAD STYLE	-S1 END 2	MATES WITH -S1
-01	MMSS (24 AWG)	IPL1
-02	MMSS (24 AWG)	
-05	MMSS (24 AWG (2x), 28 AWG (4x))	

View complete specifications at: samtec.com?ACR-12

CURRENT RATING		
LEAD STYLE	PINS POWERED	CCC per PIN
-01	4	3.8 A
-02	5	3.6 A
-05	2 (plus 4 signal pins powered @ 1.2 A)	5.0 A

KITS AVAILABLE

www.samtec.com?ACPK-12
www.samtec.com?ACRK-12

For general reference only. Contact AccliMate@samtec.com for applications requiring higher current carrying capacity.

Note:
Some lengths, styles and
options are non-standard,
non-returnable.

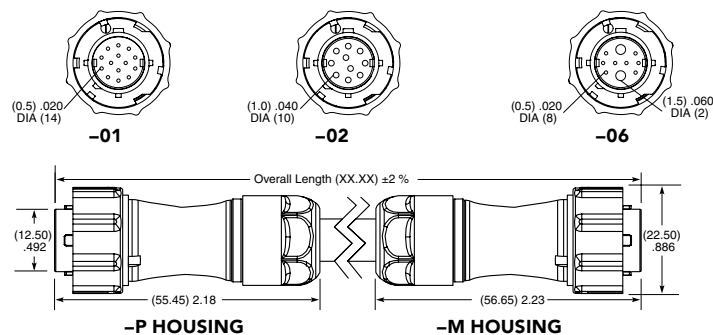
16 mm • IP68 SEALED CABLE ASSEMBLY

SERIES	16	LEAD STYLE	PLATING OPTION	LENGTH	END 1	END 2	HOUSING MATERIAL	KEYING OPTIONS
ACP Terminal		-01 = 0.5 mm DIA (14) terminals or sockets (28 AWG)	-G = 10 µ" (0.25 µm) Gold over 50 µ" (1.27 µm) Ni on contact	-"XX.XX" = Length in meters (00.25 m min. to 50.00 m max.) Standard lengths	-T = Terminal	-T = Terminal (ACP only)	-P = Plastic	-1 = Orange, 45°
ACR Socket		-02 = 1.0 mm DIA (10) terminals or sockets (24 AWG)			-S = Socket (N/A with End 2 -T)	-S = Socket (ACP only)	-M = Metal	
		-06 = 1.5 mm DIA (2) terminals or sockets (16 AWG) + 0.5 mm DIA (8) terminals or sockets (28 AWG)				-BC = Blunt Cut		
						-S1 = Connector determine by lead style. See chart for end 2 connector used. (ACR only)		

ACP-16

End 1/2 Mates:

ACP-16
ACRK-16



View complete specifications at: samtec.com?ACP-16

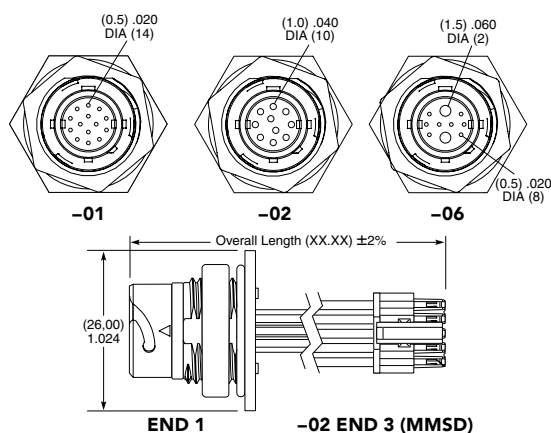
ACR-16

End 1 Mates:

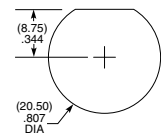
ACP-16
ACPK-16

End 2 Mates:

TFM, IPL1, MPT



PANEL OPENING



LEAD STYLE	-S1 END 2	MATES WITH -S1
-01	SFSD (28 AWG)	TFM
-02	MMSD (24 AWG)	IPL1
-06	1 x SFSD (28 AWG)	TFM
	1 x MPSS (16 AWG)	MPT

View complete specifications at: samtec.com?ACR-16

CURRENT RATING

LEAD STYLE	PINS POWERED	CCC per PIN
-01	14	1.3 A
-02	10	2.6 A
-06	2 (plus 8 signal pins powered @ 1 A)	11.6 A

For general reference only. Contact AccliMate@samtec.com for applications requiring higher current carrying capacity.

KITS AVAILABLE

www.samtec.com?ACPK-16

www.samtec.com?ACRK-16

Note:

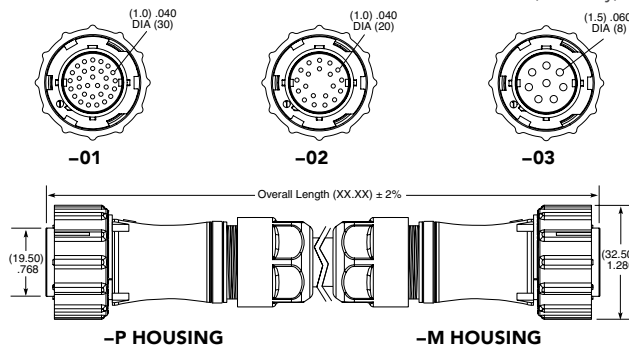
Some lengths, styles and options are non-standard, non-returnable.

22 mm • IP68 SEALED CABLE ASSEMBLY

SERIES	22	LEAD STYLE	PLATING OPTION	LENGTH	END 1	END 2	HOUSING MATERIAL	KEYING OPTIONS
ACP Terminal		-01 = 1.0 mm DIA (30) terminals or sockets (24 AWG)	-G = 10 μ " (0.25 μ m) Gold over 50 μ " (1.27 μ m) Ni on contact	- "XX.XX" = Length in meters (00.25 m min. to 50.00 m max.) Standard lengths	-T = Terminal -S = Socket	-T = Terminal (ACP only) -S = Socket (ACP only) -BC = Blunt Cut -S1 = Connector determine by lead style. See chart for end 2 connector used. (ACR only)	-P = Plastic -M = Metal	-1 = Orange, 45°
ACR Socket		-02 = 1.0 mm DIA (20) terminals or sockets (24 AWG) -03 = 1.5 mm DIA (8) terminals or sockets (16 AWG)						

ACP-22

End 1/2 Mates:
ACP-22
ACRK-22

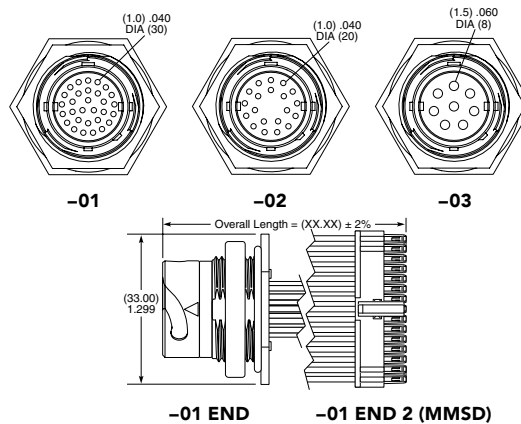


View complete specifications at: samtec.com?ACP-22

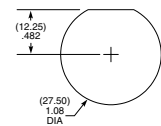
ACR-22

End 1 Mates:
ACP-22
ACPK-22

End 2 Mates:
IPL1, MPT



PANEL OPENING



LEAD STYLE	-S1 END 2	MATES WITH -S1
-01	MMSD (24 AWG)	IPL1
-02	MPSS (16 AWG)	MPT
-03		

View complete specifications at: samtec.com?ACR-22

CURRENT RATING		
LEAD STYLE	PINS POWERED	CCC per PIN
-01	30	2.0 A
-02	20	2.3 A
-03	8	8.3 A

KITS AVAILABLE

www.samtec.com?ACPK-22
www.samtec.com?ACRK-22

For general reference only. Contact AccliMate@samtec.com for applications requiring higher current carrying capacity.

Note:
Some lengths, styles and options are non-standard, non-returnable.

IP67 SEALED 8 SERIES CABLE ASSEMBLY

MCP/MCR SERIES



MCP

Mates with:
MCR(K), MCP(K)

MCP Kit:
MCPK

MCR

Mates with:
MCP(K)

MCR Kit:
MCRK

MCP	8	LEAD STYLE	PLATING OPTION	LENGTH	END 1 OPTION	END 2 OPTION
		-02 = 12 positions, 28 AWG	-L = 10 μ" (0.25 μm) Gold on contact area	-01.00 = 1 meter -02.00 = 2 meters Standard lengths	-T = Terminal -S = Socket (Not available with End 2 -T)	-T = Terminal -S = Socket -BC = Blunt Cut

SPECIFICATIONS

Insulator Material:
PPS

Terminal Material:
Phosphor Bronze (MCP)

Contact Material:
Phosphor Bronze (MCR)

Operating Temp Range:
-20 °C to +80 °C

Gasket Material:
Silicone (MCP)
Neoprene Rubber (MCR)

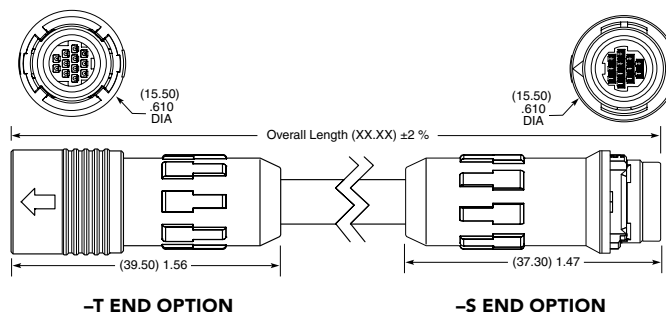
Spring Material:
Stainless Steel (MCP)

Coupling Ring Spacer:
PBT (MCP)

Cable Clamp:
POM (MCP)

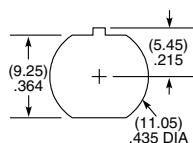
Lock Washer:
Phosphor Bronze,
Ni plated (MCR)

Hex Nut:
Brass, Ni plated (MCR)

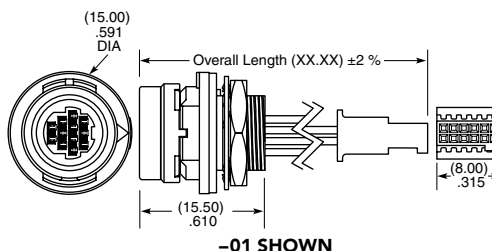


MCR	8	LEAD STYLE	PLATING OPTION	LENGTH	END 1 OPTION	END 2 OPTION
		-02 = 12 positions, 28 AWG	-L = 10 μ" (0.25 μm) Gold on contact area	-00.25 = 0.25 meter -00.50 = 0.50 meter Standard lengths	-S = Socket	-BC = Blunt Cut (Color wire only, see chart) -01 = 2x6 SFSD (Pin 1 to Pin 1) (Black wire only)

PANEL OPENING



-BC CABLE COLOR CODING	
PIN	COLOR
1	BROWN
2	RED
3	ORANGE
4	YELLOW
5	GREEN
6	DARK BLUE
7	VIOLET
8	GRAY
9	WHITE
10	BLACK
11	GREEN/BLACK
12	TAN



DUST CAPS

-S (socket) = DCA-MCR-8
-T (terminal) = DCA-MCP-8

Notes:
Samtec's MCR, MCP Seires is dual soruced by Hirose Electric Co. LTD

Some lengths, styles and options are non-standard, non-returnable

IP68 SEALED USB & ETHERNET

SCRUS/SCRES SERIES



SCRUS
Mates with:
SCPU

SPECIFICATIONS

Insulator Material:

PBT

Contact Material:

Phosphor Bronze

Wire:

20 AWG (Power)

25 AWG (Signal)

28 AWG (Drain)

O-Ring:

Silicone

Operating Temp Range:

-20 °C to +75 °C

SCRUS

**SHELL
SIZE**

-17
(Standard
USB only)

-10
(Mini USB
only)

PLATING

-G
= 30 μ"
(0.76 μm)
Gold on
Contact,
Nickel
on Shell

WIRE LENGTH

-00.25
= (0.25 m) 9.84"
Cable

-00.50
= (0.50 m) 19.68"
Cable

Standard lengths
(Assembled Length
= Wire Length
+ (37.9 mm) 1.50")

**END 1
OPTION**

-AMS
= USB A Type,
Sealed

-BMS
= USB B Type,
Sealed

-MBS
= Mini
USB B Type,
Sealed

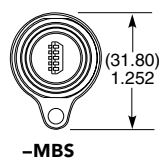
**END 2
OPTION**

-AM
= USB A Type,
Not Sealed

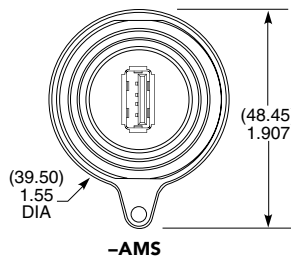
-BM
= USB B Type,
Not Sealed

-MB
= Mini USB B Type,
Not Sealed

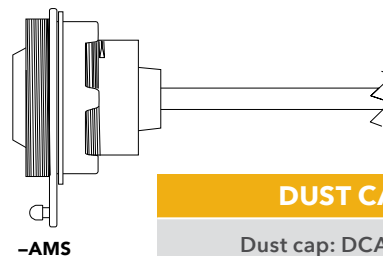
-BC
= Blunt Cut



-MBS



-AMS



-AMS

DUST CAP

Dust cap: DCA-17-03
(USB Flash Drive Cover)

SCRES
Mates with:
SCPE

SPECIFICATIONS

Insulator Material:

PBT

Contact Material:

Phosphor Bronze

Shield Material:

Phosphor Bronze

Wire:

24 AWG

O-Ring:

Silicone

Overmold:

PA66

Current Rating:

3.8 A per pin

(1 pin powered)

Operating Temp Range:

-40 °C to +70 °C

SCRES

PLATING

-G
= 50 μ" (1.27 μm)
Gold on Contact,
Nickel on Shell

WIRE LENGTH

-00.25
= (0.25 m) 9.84" Cable

-00.50
= (0.50 m) 19.68" Cable

Standard lengths

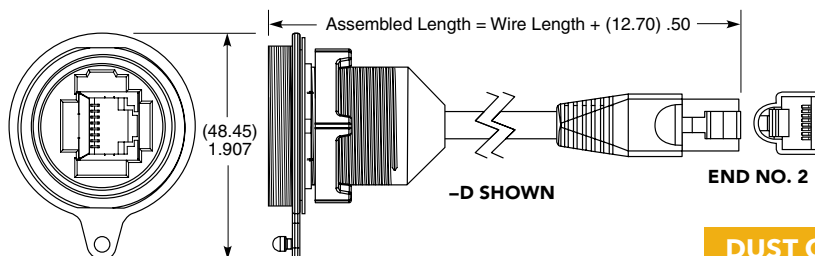
END OPTION

-D
= Double Ended

-BC
= Blunt Cut

C5E

-C5E
= Cat 5e rating



END NO. 1

-D SHOWN

END NO. 2

DUST CAP & PANEL PLUG

Dust cap: DCA-17-01
Panel Plug: SCPPA-17-01

Note:
Some lengths, styles and
options are non-standard,
non-returnable.

IP68 SEALED ETHERNET SOCKET

RPBE, RPCE SERIES



RPBE
Mates with:
RCE

RPBE

NO. OF PORTS

LEAD STYLE

PLATING

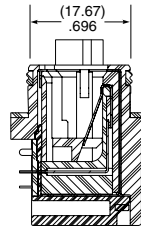
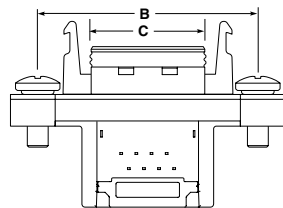
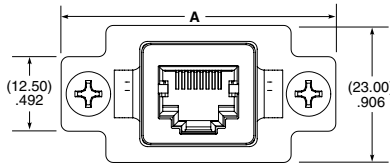
-01, -02

-01
= Right-angle

-E
= 50 μ " (1.27 μ m) Gold on contact,
Flash Gold on tail

SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Contact:
Phosphor Bronze
Operating Temp Range:
-40 °C to +75 °C
Seal:
Rubber
Screw:
Stainless Steel
Nut:
Stainless Steel
Sealing Washer:
Rubber



NO. OF PORTS	A	B	C
-01	(46.10) 1.815	(36.95) 1.455	(19.72) .776
-02	(67.10) 2.642	(57.95) 2.281	(40.72) 1.603

DUST CAPS

-01 = DCA-RPBE-01-01-P (Push-On/No Latch)
-01 = DCA-RPBE-01-01-L (Latching)
-02 = DCA-RPBE-02-01-L (Latching)

RPCE
Mates with:
RCE

RPCE

01

PLATING

CABLE LENGTH

END OPTION

C5E

-E
= 50 μ " (1.27 μ m)
Gold on contact,
Nickel on shell

-00.25
= (0.25 m) 9.84"

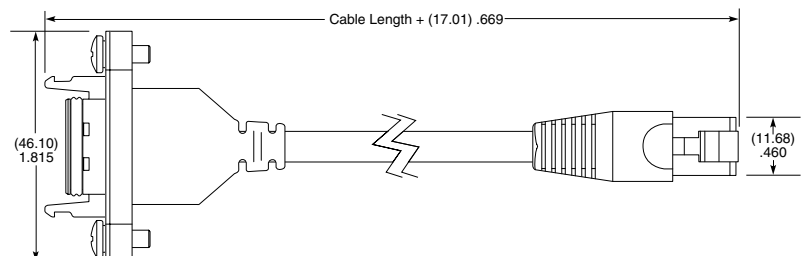
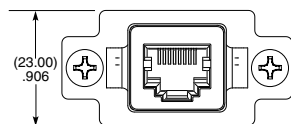
-D
= Double Ended

-00.50
= (0.50 m) 19.69"
Standard lengths

-BC
= Blunt Cut

SPECIFICATIONS

Insulator Material:
Glass Filled Thermoplastic
Contact:
Phosphor Bronze
Shield:
Phosphor Bronze
Operating Temp Range:
-40 °C to +75 °C
Overmold:
Rite Flex 640F
Seal:
Rubber
Screw:
Stainless Steel
Nut:
Stainless Steel
Sealing Washer:
Rubber
Wire:
24 AWG



Note:
Some lengths, styles and
options are non-standard,
non-returnable

IP68 SEALED USB PANEL MOUNT

RPBU, RPCU SERIES



RPBU
Mates with:
RCU (Single Port only)

SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Contact:
Phosphor Bronze
Current Rating:
4.2 A per pin
(1 pin powered)
Operating Temp Range:
-20 °C to +80 °C
Seal: Silicone
Lead-Free Solderable:
Yes

RPBU	NO. OF PORTS	PLATING	TYPE	LEAD STYLE	OPTION
	-01 = Single Port	-S = 30 μ" (0.76 μm) Gold on contact, Matte tin on tail	-A = USB A Type -B = USB B Type	-VT = Vertical Through-hole -RA = Right-angle	-LC = Locking Clip (-VT only)
	-02 = Dual Port (-A only)				

NO. OF PORTS	A	B	C
-01	(48.15) 1.896	(39.10) 1.539	(20.01) .788
-02	(69.80) 2.748	(60.75) 2.392	(42.00) 1.654

DUST CAPS	
DCA-RPBU-01-01-A	
DCA-RPBU-02-01-A	
DCA-RPBU-01-01-B	

RPCU
Mates with:
RCU

SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Contact Material:
Phosphor Bronze
Operating Temp Range:
-20 °C to +80 °C
Shield Material:
Phosphor Bronze
Wire:
20 AWG (Power)
25 AWG (Signal)
28 AWG (Drain)

RPCU	PLATING	CABLE LENGTH	END 1 OPTION	END 2 OPTION
	-G = 30 μ" (0.76 μm) Gold on contact, Nickel on shell	-00.25 = (0.25 m) 9.84" Cable -00.50 = (0.50 m) 19.68" Cable Standard lengths (Assembled Length = Cable Length + (42.8 mm) 1.69")	-AMS = USB A Type, Sealed -BMS = USB B Type, Sealed	AM = USB A Type, Not Sealed -BM = USB B Type, Not Sealed -BC = Blunt Cut

Note:
Some lengths, styles and options are non-standard, non-returnable

RUGGED FEATURES

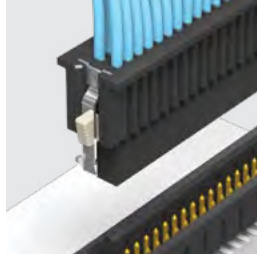
OPTIONS FOR HIGH-RELIABILITY, HIGH-RETENTION AND HIGH-CYCLE LIFE

RUGGEDIZING OPTIONS



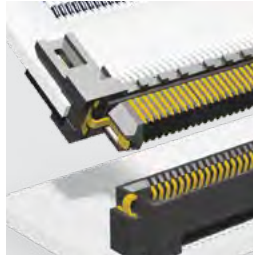
JACK SCREWS

Ideal for high normal force, zippering and other rugged applications



POSITIVE LATCHING

Manually activated latches increase unmating force by up to 200%



FRICTION LOCKS

Metal or plastic friction locks increase retention/withdrawal force



RETENTION PINS

Increase unmating force by up to 50%



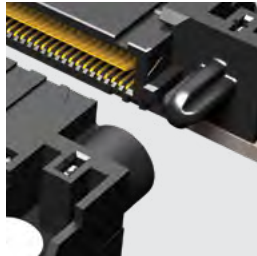
BOARD LOCKS

Boards are mechanically locked together



WELD TABS

Significantly increase shear resistance of connector to PCB



GUIDE POSTS

Easy and secure mating



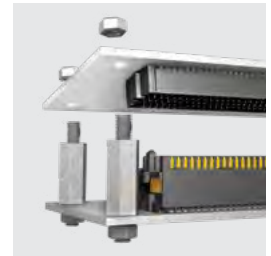
SHIELDING

360° shielding reduces EMI



SCREW DOWNS

Secure mechanical attachment to the board



BOARD STANDOFFS

Precision machined standoffs for 5 mm to 25 mm board spacing

CONTACT SYSTEMS



TIGER EYE™

High-reliability
High Mating Cycles
Multi-finger Contact



TIGER CLAW™

Dual Wipe Contact
Pass-through Applications
Ultra-low Profile



BLADE & BEAM

Mating/Alignment
"Friendly"
Cost-effective



TIGER BEAM™

Best Cost
Reliable Performance
Post & Beam Contact

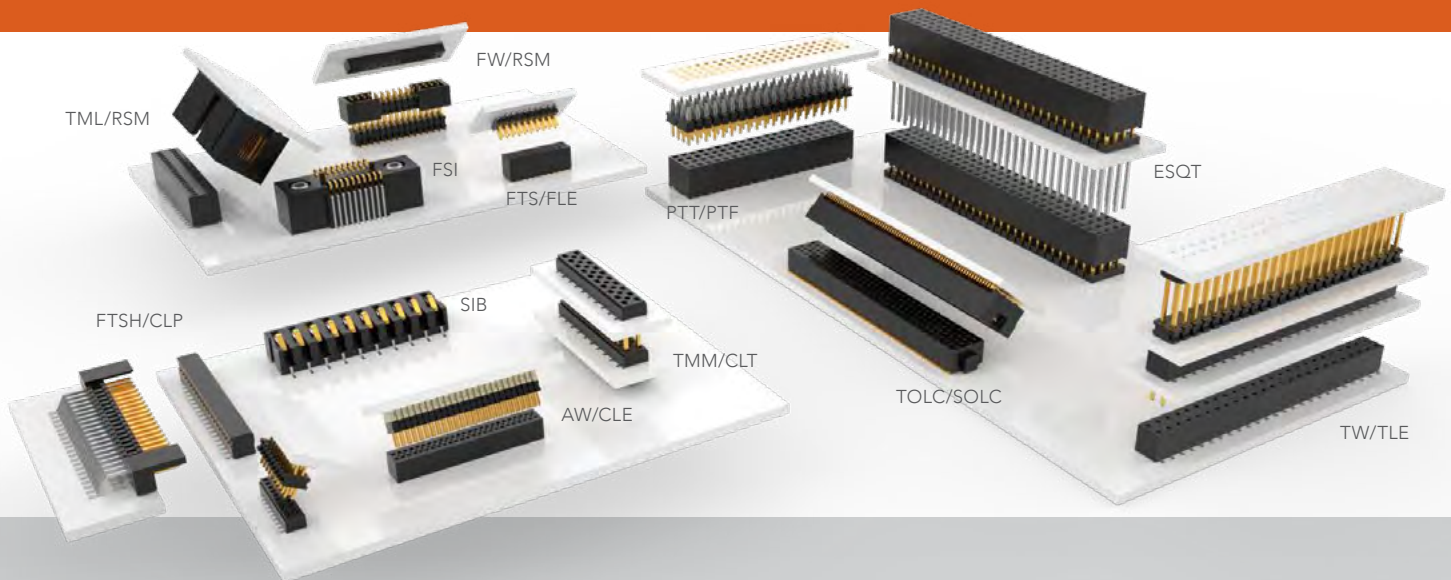


EDGE RATE®

Designed for
Signal Integrity
Superior Impedance Control
Reduced Broadside Coupling

FLEXIBLE STACKING

VARIETY OF PITCHES, CONTACT SYSTEMS & ORIENTATIONS • HIGHLY CUSTOMIZABLE



234-235

ONE-PIECE INTERFACES

1.00 mm (.0394") Pitch (FSI)	234
1.00" (2.54 mm) (SIB, SIR1)	235

236-241

MICRO BLADE & BEAM

0.50 mm (.0197") Pitch Low-Profile Systems (LTH, LSH)	236
Floating Contact Systems (FT5, FS5)	237
Basic Blade & Beam Systems (BXH, BXS, BXE)	238-241

242-258

MICRO PIN & SOCKET

0.80 mm (.0315") Pitch Headers & Sockets (FTE, CLE, AW)	242-243
1.00 mm (.0394") Pitch Headers, Stackers & Sockets (FTMH, FTM, MW, CLM, MLE)	244-246
Quad Row Headers & Sockets (SOLC, TOLC)	247
.050" (1.27 mm) Pitch Headers, Stackers & Sockets (FTSH, FTS, FW, CLP, FLE)	248-253
.050" (1.27 mm) x 100" (2.54 mm) Pitch Headers, Stackers & Sockets (TMS, HTMS, TML, ZML, DWM, FTR, RSM, SLM, SMS)	254-258

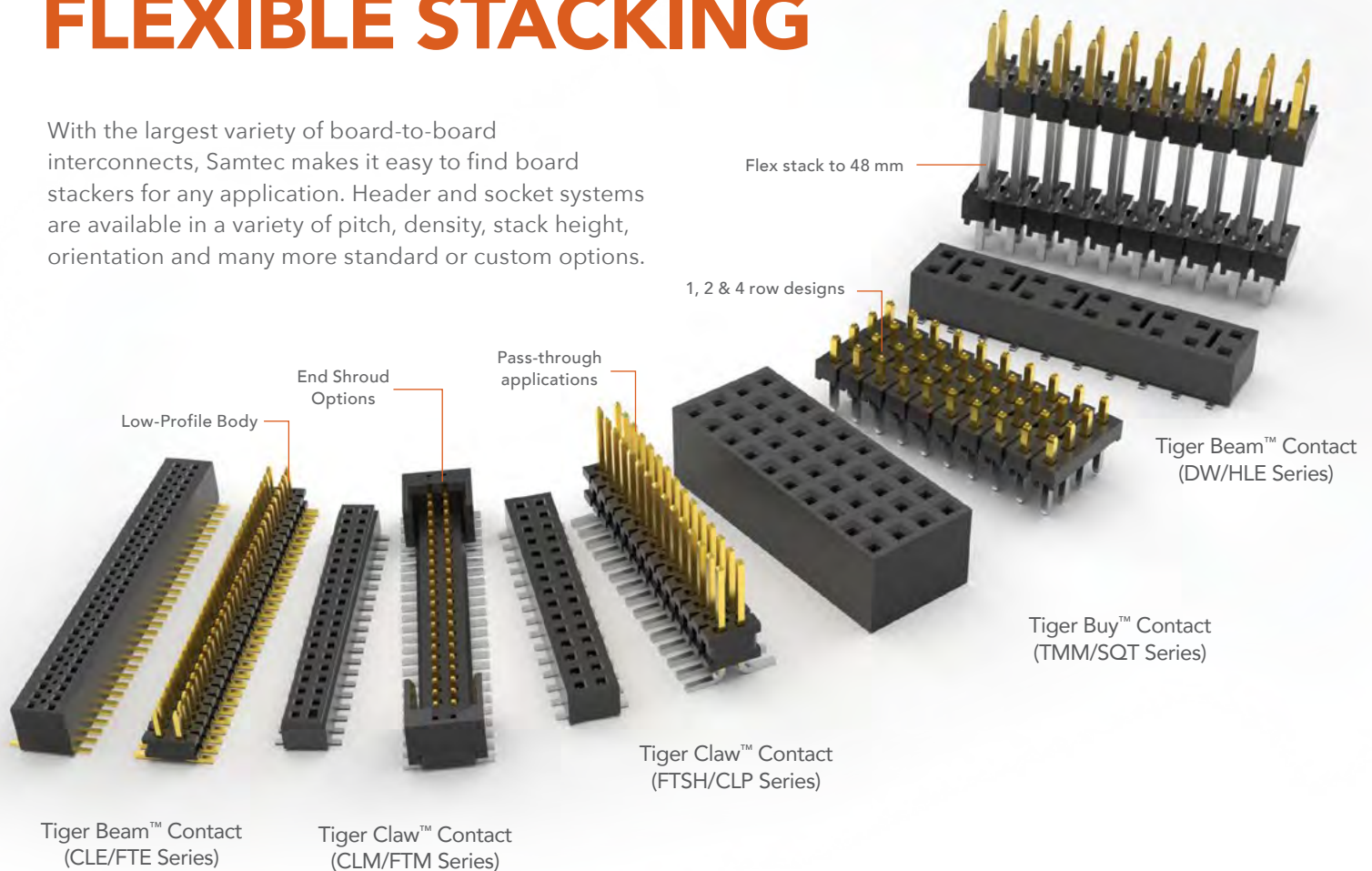
259-292

BOARD-TO-BOARD

2.00 mm (.0787") Pitch Headers & Stackers (TMM, MMT, MTMM, TMMH, LTMM, ZLTMM, TMMS, TSH, TW)	259-266
2.00 mm (.0787") Pitch Press-Fit Headers & Sockets (PTT, PTF, PTHF, ESQT-368)	267-268
2.00 mm (.0787") Pitch Sockets (SQW, SQT, MMS, TLE, CLT)	269-271
2.00 mm (.0787") Pitch Self Mating Hermaphroditic Strips (LS2)	272
.100" (2.54 mm) Pitch Square Post Headers & Stackers (PHT, PHF, TSW, HTSW, TSM, MTSW, HMTSW, TLW, MTLW, HW, DW, EW, ZW, TSS, HTSS, ZSS)	273-283
.100" (2.54 mm) Pitch Square Post Sockets (SSW, SSQ, SSM, ESW, ESQ, HLE, BCS, BSW, SLW, CES)	284-291
Shunts & Jumpers (SNT, MNT, 2SN, SNM, JL)	292

FLEXIBLE STACKING

With the largest variety of board-to-board interconnects, Samtec makes it easy to find board stackers for any application. Header and socket systems are available in a variety of pitch, density, stack height, orientation and many more standard or custom options.



INCREDIBLE FLEXIBILITY

- Post height: Adjustable in .005" (0.13 mm) increments
- Body positions: Adjustable in .005" (0.13 mm) increments
- Board stacking distance: 1.65 mm (.065") – 48.51 mm (1.910")
- Number of pins: 2-300
- Number of rows: 1-6

CUSTOMIZABLE

- Mix-and-match headers and sockets to find the right solution
- Quick and easy custom parts are available. Contact asp@samtec.com

VARIETY OF PITCHES

- 0.80 mm (.0315")
- 1.00 mm (.0394")
- .050" (1.27 mm)
- .050" x .050" (1.27 x 1.27 mm)
- .050" x .100" (1.27 x 2.54 mm)
- 2.00 mm (.0787")
- .100" (2.54 mm)
- .156" (3.96 mm)
- .200" (5.08 mm)

BUILD IT YOURSELF

Check out Solutionator® to quickly build a mated set for your specific application. Visit samtec.com/solutionator



VARIETY OF CONTACTS

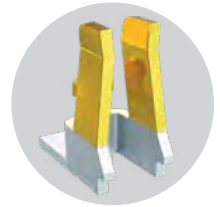
TIGER EYE™ CONTACT

- High-reliability
- High mating cycles
- Multi-finger contact



TIGER CLAW™ CONTACT

- Pass-through
- Ultra-low profile
- Dual wipe contact



TIGER BUY™ CONTACT

- High-retention
- Cost-effective
- Tuning fork contact

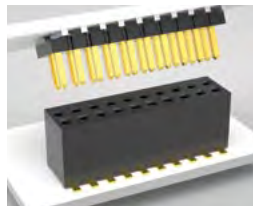


TIGER BEAM™ CONTACT

- Best cost
- Reliable performance
- Post & beam contact

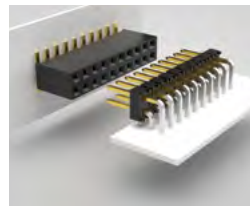


VARIETY OF ORIENTATIONS/APPLICATIONS



Standard

- Choice of contact system
- Single, double and triple row designs
- Largest variety



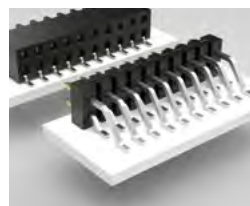
Right-Angle

- Design flexibility
- Tiger Claw™ & Tiger Buy™ contacts
- Through-hole, surface mount



Low Profile

- Down to 1.65 mm (.065") stack height
- Tiger Claw™ contacts
- Space saving



Coplanar

- 1-4 row designs
- Surface mount, through-hole or mixed technology
- Tiger Claw™ & Tiger Beam™ contacts



Elevated

- Up to 48.51 mm (1.910") stack height
- Design flexibility
- Clearance, air flow



Bottom Entry

- Tiger Claw™ contacts
- Access to components when mated
- Space savings



Pass-Through

- Connect three or more boards
- Tiger Claw™ & Tiger Beam™ contact systems
- Surface mount or offset through-hole



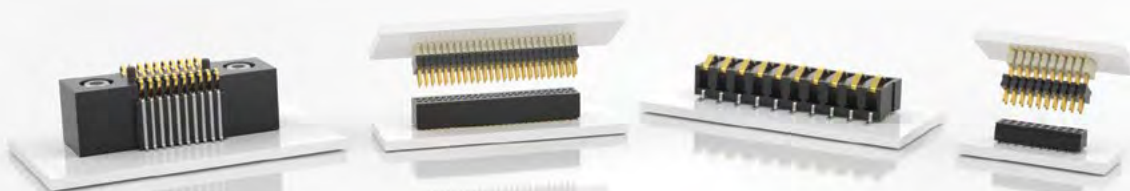
Self-Nesting

- Tiger Buy™ contacts
- Press-fit or through-hole tails
- PC/104-Plus™ embedded applications

BOARD STACKING REFERENCE

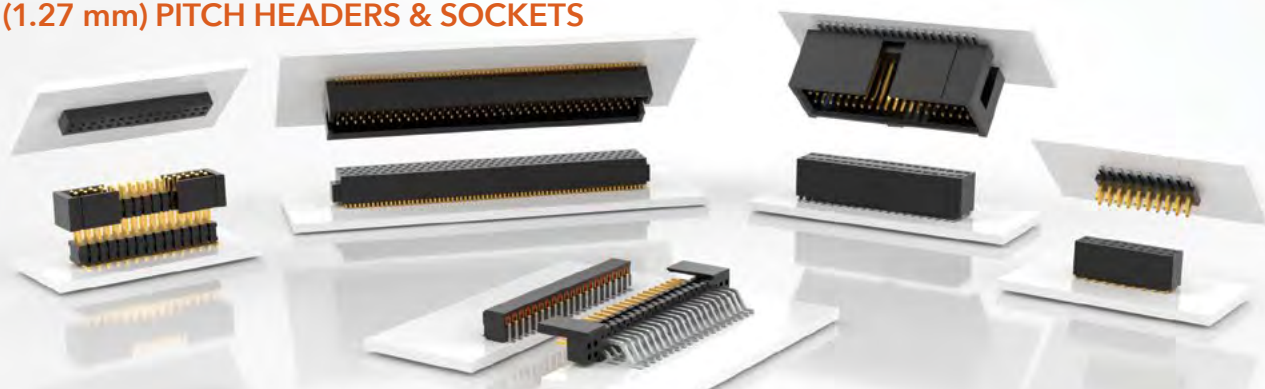
Focused/most popular series in charts. For all flexible stacking solutions, visit samtec.com/connectors

ONE-PIECE, 0.80 mm (.0315") & 1.00 mm (.0394") PITCH



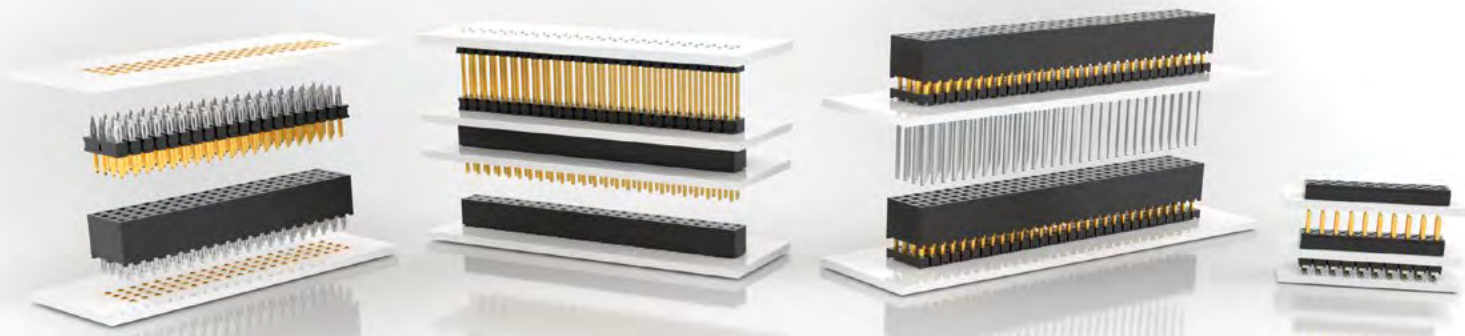
Series		FSI	SEI	SIB	CLE	FTE	CLM	FTMH/FTM	MLE	MW
Pitch		1.00 mm (.0394")		.100" (2.54 mm)	0.80 mm (.0315")		1.00 mm (.0394")			
Orientation		V				V & RA	V	V & RA	V	
Board Stacking (mm)	Min	3	1.65	3.8	5	5	3.48		4.57	4.62
	Max	10			9.14		8.43	5.11	9.27	
Contact System					Tiger Beam™		Tiger Claw™		Tiger Beam™	
Mates		One-Piece			FTE, AW	CLE	FTM, FTMH, MW	CLM, MLE	FTM, FTMH, MW	CLM, MLE
Page		234	See Website	235	242	242	246	244	246	245

.050" (1.27 mm) PITCH HEADERS & SOCKETS



SERIES		CLP	FLE	FTS	FTSH	FW	SOLC	TOLC	DWM/HDWM	FTR	RSM	SLM
PITCH		.050" x .050" (1.27 mm x 1.27 mm)							.050" x .100" (1.27 mm x 2.54 mm)			
ORIENTATION		V & RA	V		V & RA	V						
BOARD STACKING (MM)	MIN	3.53	5.82	3.53	5.18	7.72	6.35		9.65	9.78		7.11
	MAX	17.75	19.15	5.82	7.49	19.15	12.00		22.99	14.73	19.69	19.43
CONTACT SYSTEM		Tiger Claw™	Tiger Beam™				Tiger Buy™					Tiger Buy™
MATES		FTSH, FTS, FW		CLP, FLE			TOLC	SOLC	SMS, SLM, RSM		FTR, HTMS, HDWM, DWM, TML, ZML, TMS	HTMS, TMS, MTMS, DWM, HDWM, FTR, HMTMS
PAGE		252	253	250	248-249	251	247	247	256	257	257	258

2.00 mm (.0787") PITCH HEADERS & SOCKETS



SERIES		MMT	TMM/ MTMM	TMMH	TW	ZLTMM	CLT	ESQT/ -368	MMS	SMM	SQT	SQW	TLE
ORIENTATION		RA	V & RA		V				V & RA	V	V & RA	V	
TERMINATION		SMT & MT	T/H & SMT			T/H	T/H & SMT	T/H	T/H & SMT	SMT	T/H	T/H & SMT	SMT
BOARD STACKING (MM)	MIN	2	3.63	4.14	7.49	7.62	3.63	9.37	5.94	6.07	7.85		6.99
	MAX	4	18.87	22.07	43.31	13.34	4.98	43.31	19.81	17.78	29.59		17.53
CONTACT SYSTEM							Tiger Claw™	Tiger Buy™	Tiger Claw™	Tiger Eye™	Tiger Buy™		Tiger Beam™
MATES		CLT, SQT, SQW, ESQT, TLE, SMM, MMS				SQT, SQW, ESQT, SMM	TMM, TMMH, MTMM, MMT, TW, TSH	TMMH, TMM, MTMM, MMT, TW, LTMM, ZLTMM, ESQT, PTT, TSH, TMMS, PTHF	TMMH, TMM, MTMM, MMT, TW, LTMM, ZLTMM, TSH	TMM, TMMH, MTMM, MMT, LTMM, TW, PTT, ZLTMM	TMMH, TMM, MTMM, MMT, TW, TSH, LTMM, PTT	TMMH, TMM, MTMM, MMT, TW, TSH, LTMM, PTT	TMMH, TMM, MTMM, MMT, TW, LTMM, ZLTMM, TSH
PAGE		261	259-261	262-263	266	264	271	268	270	194	269	269	271

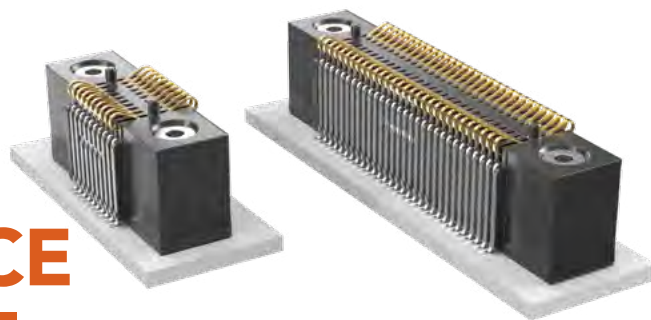
.100" (2.54 mm) PITCH HEADERS & SOCKETS



SERIES		DW, EW, ZW	HW	MTSW/ HMTSW	TLW/ MTLW	TSM	TSW/ HTSW	BCS	ESW, ESQ	HLE	SSM	SSQ	SSW
ORIENTATION		V		V & RA				V & RA	V		V & RA		
TERMINATION		T/H	T/H & SMT	T/H		SMT & MT	T/H			T/H & SMT	SMT	T/H	T/H & SMT
BOARD STACKING (MM)	MIN	13.59	10.03	7.24	6.1	7.47	7.87	9.02	13.59	7.47	11.18	10.03	
	MAX	48.51	30.73	46.36	20.96	14.48	35.69	18.92	48.51	26.16	30.1	38.35	
CONTACT SYSTEM								Tiger Claw™	Tiger Buy™	Tiger Beam™	Tiger Claw™	Tiger Buy™	
MATES		SSW, SSQ, ESW, ESQ, CES, SLW, BSW, BCS, SSM, HLE, PHF		SSW, SSQ, ESW, ESQ, BCS, BSW, CES, SLW, HLE, SSM	BSW, CES, SLW, HLE	SSW, SSQ, SSM, BSW, ESW, ESQ, BCS, BSW, CES, SLW, HLE	SSW, SSQ, SSM, ESW, ESQ, BCS, BSW, CES, SLW	TSW, MTSW, HTSW, HMTSW, TSS, ZSS, DW, EW, ZW, HW, TSM, MTLW, PHT	TSW, MTSW, EW, MTLW, TSS, ZSS, TSM, DW, ZW, HW, TSSH, HTSS	TSW, MTSW, DW, EW, ZW, TLMW, MTLW, HW	TSW, MTSW, TST, TSS, ZST, ZSS, DW, EVW, ZW, TSM, HMTSW, HTSW, TSSH, BST, HTSS, TLW, MTLW	TSW, MTSW, MTLW, EVW, ZW, TSS, TSM, TSSH, HTSS	TSW, MTSW, HTSW, HMTSW, MTLW, EVW, ZW, TSS, HTSS, ZSS, TSM, TSSH, DW, HW
PAGE		282	281	278-279	280	276-277	274-275	289	287	288	286	284-285	

LOW-PROFILE AND ELEVATED ONE-PIECE

(1.00 mm) .0394" PITCH • FSI SERIES



SPECIFICATIONS

Insulator Material:
Liquid Crystal Polymer
Contact Material:
BeCu
Current Rating:
2.8 A per pin
(2 pins powered)
Operating Temp Range:
-55 °C to +125 °C
Plating:
Au over 50 µ" (1.27 µm) Ni

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max (05-30)
(0.15 mm) .006" max (50)*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)
Compression Board:
Gold Pads required

OTHER SOLUTIONS

Low Profile

See www.samtec.com?SEI

.050"
(1.27 mm)
Pitch

See www.samtec.com?SIBF

ALSO AVAILABLE

MOQ Required

No alignment pin
Top side alignment pin
Bottom side alignment pin
Other platings

Notes:

Applications requiring 40-50 positions without threaded inserts, please contact Samtec Interconnect Processing Group.

Some lengths, styles and options are non-standard, non-returnable.

FSI	1	PINS PER ROW	BODY HEIGHT	PLATING OPTION	ROW OPTION	INSERT OPTION	ALIGNMENT OPTION	OTHER OPTION
-----	---	--------------	-------------	----------------	------------	---------------	------------------	--------------

10, 20,
30, 50
(Insert/Screw
Option)

05,
10, 20,
30, 50
(Short
Version)

-03
= 3 mm

-06
= 6 mm

-10
= 10 mm

-G
= 10 µ"
(0.25 µm)
Gold
(-03 only)

-L
= 10 µ"
(0.25 µm)
Gold on
contact,
Matte Tin
on tail
(Not
available
with
-03 body
height)

-S
= Single
Row
(Available
with 5, 10
& 20 pins
with -AD
alignment
pin)

-D
= Double
Row

Leave blank
for Short
Version
(No screw
down
inserts or
holes)

-E
= #2-56 x
1/16" screw
thread

-M
= 2.00 mm
x 0.40 mm
screw thread

Leave blank
for no
Alignment Pin

-AD
= Alignment Pin
Top & Bottom

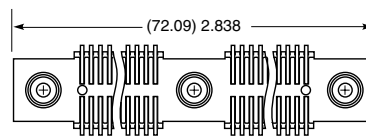
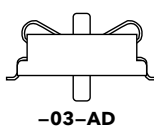
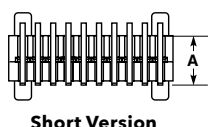
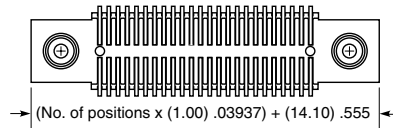
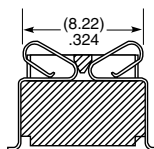
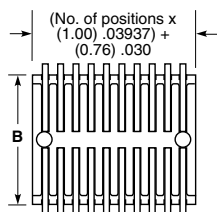
-WT
= Weld Tab
(Available
with -S row
option & -06
& -10 body
height only)

-K
= Polyimide
Film Pick &
Place Pad
(50 position
with threaded
insert option
only)

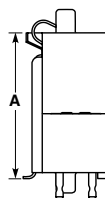
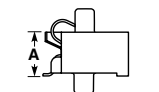
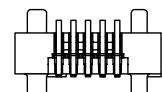
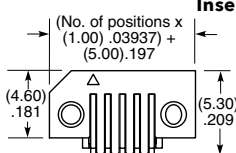
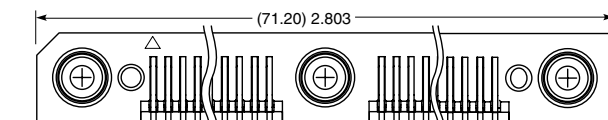
-P
= Plastic Pick
& Place Pad
(5.08 mm)
.200" x
(12.45 mm)
.490"
(50 not
available
with -E)
(Not available
with -S
row option
or -03 body
height)

-TR
= Tape &
Reel

-FR
= Full Reel
Tape & Reel
(must order
max. quantity
per reel;
contact
Samtec for
quantity
breaks)



Double Row Version -03, -06, -10



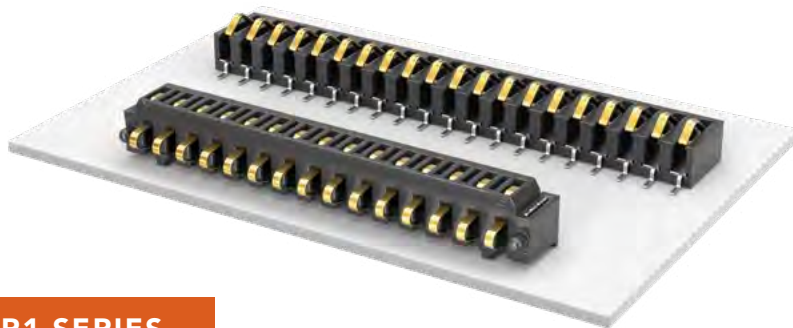
Single Row Version -03, -06, -10

BODY HEIGHT	A	B
-03	(3.00) .118	(8.76) .345
-06	(6.00) .236	(9.02) .355
-10	(10.00) .394	(9.02) .355



Insert Option (10, 20 & 30 pins/row)

ONE-PIECE INTERFACES



(2.54 mm) .100" PITCH • SIB/SIR1 SERIES

SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Contact Material:
Phosphor Bronze
Plating:
Au or Sn over
50 μ " (1.27 μ m) Ni
Current Rating:
2.6 A per pin
(1 pin powered)
Operating Temp Range:
-55 °C to +125 °C

SIB

- 1

NO. OF
POSITIONS

- 02

PLATING
OPTION

- S

OPTION

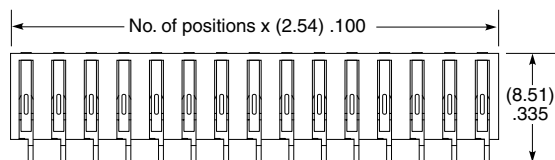
02 thru 30
(Per Row)

-F
= Gold flash
on contact,
Matte Tin on tail

-LC
= Locking
Clip
(Manual
placement
required)

PROCESSING

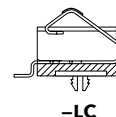
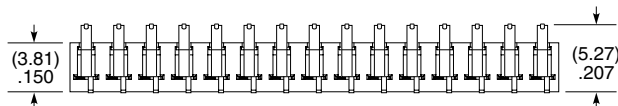
Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max (02-19)
(0.15 mm) .005" max (20-30)*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)



Notes:

The SIB Series
is intended for vertical
mating only.

Some lengths, styles and
options are non-standard,
non-returnable.



SPECIFICATIONS

Insulator Material:
Black LCP
Contact Material:
Phosphor Bronze
Weld Tab:
Phosphor Bronze
Plating:
Au or Sn over
50 μ " (1.27 μ m) Ni
Current Rating:
2.8 A per pin
(1 pin powered)

SIR1

-

NO. OF
POSITIONS

-

PLATING
OPTION

- S

OPTION

-03, -05, -10, -15
(Per Row)

-L
= 10 μ " (0.25 μ m)
Gold on contact,
Matte Tin on tail

-S
= 30 μ " (0.76 μ m)
Gold on contact,
Matte Tin on tail

-A
= Alignment Pin

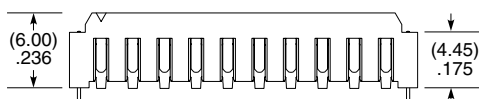
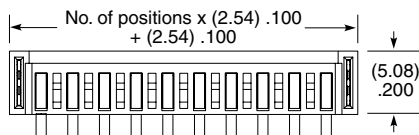
-K
= (4.00 mm) .157"
DIA Polyimide
Film Pick &
Place Pad

-TR
= Tape & Reel

-FR
= Full Reel
Tape & Reel
(must order max.
quantity per reel;
contact Samtec for
quantity breaks)

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max



Note:

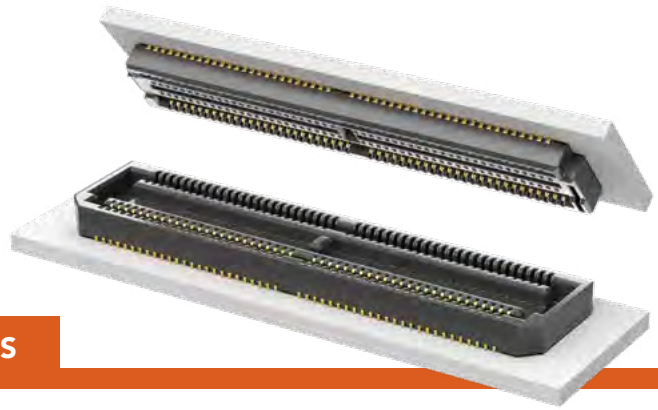
Some lengths, styles and
options are non-standard,
non-returnable.

samtec.com?SIB or samtec.com?SIR1

Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec's specifications which are subject to change without notice.

LOW-PROFILE BLADE AND BEAM

(0.50 mm) .0197" PITCH • LTH/LSH SERIES



LTH
Mates:
LSH

LSH
Mates:
LTH

SPECIFICATIONS

Insulator Material:

Liquid Crystal
Polymer

Terminal Material:

Phosphor Bronze

Contact Material:

BeCu

Plating:

Au over 50 μ " (1.27 μ m) Ni

Current Rating:

2.6 A per pin
(2 pins powered)

Operating Temp Range:

-55 °C to +125 °C

PROCESSING

Lead-Free Solderable:

Yes

SMT Lead Coplanarity:

(0.10 mm) .004" max

Board Stacking:

For applications requiring more than two connectors per board, contact ipg@samtec.com

LTH	-	NO. OF POSITIONS PER ROW	-	01	-	PLATING OPTION	-	D	-	A	-	OTHER OPTION
-----	---	--------------------------	---	----	---	----------------	---	---	---	---	---	--------------

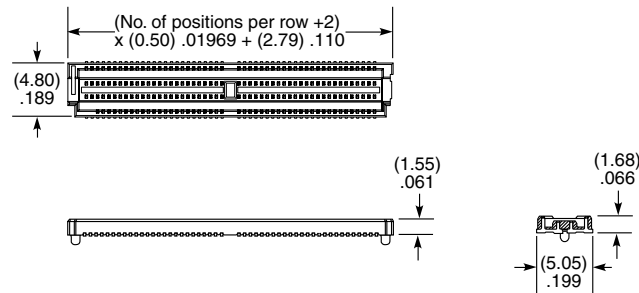
-010, -020,
-030, -040, -050

-G
= 10 μ "
(0.25 μ m)
Gold

-K
= (5.50 mm)
.217" DIA
Polyimide
film Pick &
Place Pad

-TR
= Tape & Reel

-FR
= Full Reel
Tape & Reel
(must order max.
quantity per reel;
contact Samtec for
quantity breaks)



LSH	-	NO. OF POSITIONS PER ROW	-	01	-	PLATING OPTION	-	D	-	A	-	OTHER OPTION
-----	---	--------------------------	---	----	---	----------------	---	---	---	---	---	--------------

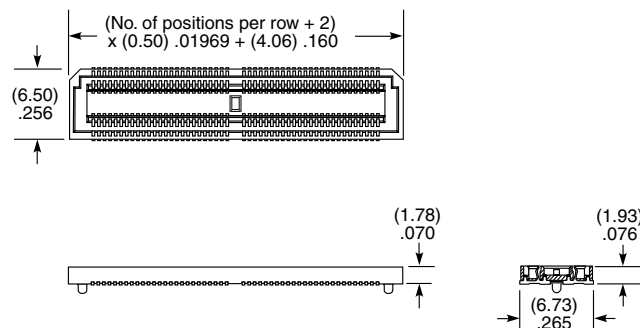
-010, -020,
-030, -040, -050

-G
= 10 μ "
(0.25 μ m)
Gold

-K
= (7.50 mm)
.295" DIA
Polyimide
film Pick &
Place Pad

-TR
= Tape & Reel

-FR
= Full Reel
Tape & Reel
(must order max.
quantity per reel;
contact Samtec for
quantity breaks)



MATED HEIGHT

LEAD STYLE	MATED HEIGHT*
-01	(2.31 mm) .091"

*Processing conditions will affect mated height.

Note:
Some lengths, styles and options are non-standard, non-returnable.

HIGH-SPEED FLOATING CONTACT SYSTEM

(0.50 mm) .0197" PITCH • FT5/FS5 SERIES



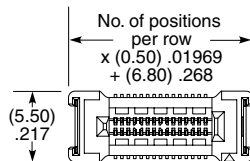
FT5 Mates: FS5

FS5 Mates: FT5

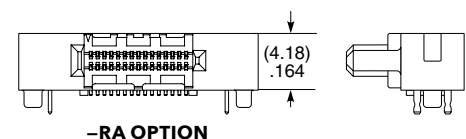
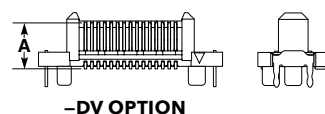
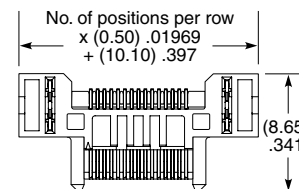
SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Contact Material:
Phosphor Bronze (FT5)
BeCu (FS5)
Weld Tab:
Phosphor Bronze
Plating:
Au or Sn over
50 μ " (1.27 μ m) Ni
Current Rating:
1.8 A per pin
(2 pins powered)
Operating Temp Range:
-55 °C to +125 °C
Lead-Free Solderable:
Yes

FT5	NO. OF POSITIONS	LEAD STYLE	PLATING OPTION	ROW OPTION	TH	OPTION
	-15, -30 (Per Row)	-01.0 = 1 mm Body Height -03.0 = 3 mm Body Height -01 = Right-angle	-L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail	-DV = Vertical -RA = Right-angle	Leave blank for -RA -TH = Through-hole weld tab	Required callouts -P = Pick & Place Pad (-DV only) -K = (5.00 mm) .197" DIA Polyimide Film Pick & Place Pad (-RA only) -TR = Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)



LEAD STYLE	A
-01.0	(3.72) .146
-03.0	(5.72) .225

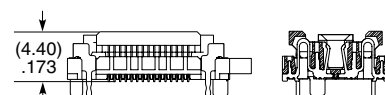
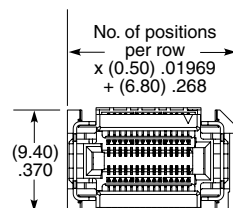


MATED HEIGHT *

FS5 LEAD STYLE	FT5 LEAD STYLE	
	-01.0	-03.0
-02.0	(5.00 mm) .197"	(7.00 mm) .276"

*Processing conditions will affect mated height.

FS5	NO. OF POSITIONS	LEAD STYLE	PLATING OPTION	DV	TH	K	XR
	-15, -30 (Per Row)	-04.0 = 4 mm Body Height	-L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail		-TH = Through-hole weld tab	-K = (8.25 mm) .325" DIA Polyimide Film Pick & Place Pad -TR = Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)	



ALSO AVAILABLE
MOQ Required

Other lead counts
Surface mount weld tab

Notes:

Floating contact system provides 0.50 mm float in X and Y directions.

Some lengths, styles and options are non-standard, non-returnable.

BASIC BLADE & BEAM HEADER

(0.50 mm) .0197" PITCH • BTH SERIES



BTH
Mates:
BSH

SPECIFICATIONS

Insulator Material:

Black LCP

Contact Material:

Phosphor Bronze

Plating:

Au or Sn over

50 μ " (1.27 μ m) Ni

Current Rating:

2.0 A per pin

(2 pins powered)

Operating Temp Range:

-55 °C to +125 °C

Voltage Rating:

175 VAC

Max Cycles:

100

PROCESSING

Lead-Free Solderable:

Yes

SMT Lead Coplanarity:

Vertical=

(0.10 mm) .004" max (030-090),

(0.15 mm) .006" max (120-150)*

Right-angle=

(0.15 mm) .006" max (030-090)*

*(.004" stencil solution

may be available; contact

IPG@samtec.com)

Board Stacking:

For applications requiring more

than two connectors per board

or 90 positions or higher,

contact ipg@samtec.com

BTH	NO. OF POSITIONS PER ROW	01	PLATING OPTION	D	A	OTHER OPTION
-----	--------------------------	----	----------------	---	---	--------------

-030, -050, -060,
-090, -120, -150

-F
= Gold Flash
on contact,
Matte Tin on tail

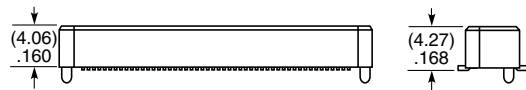
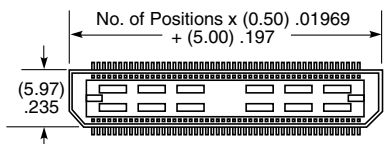
-L
= 10 μ " (0.25 μ m)
Gold on contact,
Matte Tin on tail

-C*
= Electro-Polished Selective
50 μ " (1.27 μ m) min
Au over 150 μ " (3.81 μ m)
Ni on Signal Pins in contact
area, Matte Tin over
50 μ " (1.27 μ m) min
Ni on all solder tails
(*C Plating passes
10 year MFG testing)

-K
= (7.00 mm) .276"
DIA Polyimide
Film Pick
& Place Pad

-TR
= Tape & Reel
(120 positions
maximum)

-FR
= Full Reel
Tape & Reel
(must order
maximum
quantity
per reel;
contact
Samtec for
quantity breaks)
(120 positions
maximum)



MATED HEIGHT

LEAD STYLE	MATED HEIGHT*
-01	(5.00 mm) .1971"

*Processing conditions
will affect mated height.

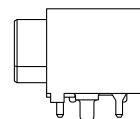
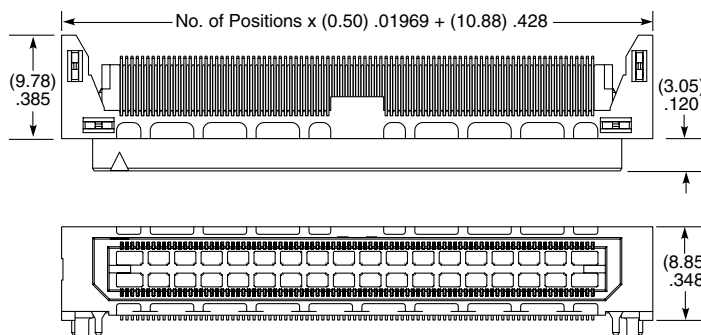
BTH	NO. OF POSITIONS PER ROW	01	PLATING OPTION	D	RA	WT	OTHER OPTION
-----	--------------------------	----	----------------	---	----	----	--------------

-030, -060, -090

-F
= Gold Flash on
contact, Matte
Tin on tail

-L
= 10 μ " (0.25 μ m)
Gold on contact,
Matte Tin on tail

-K
= (7.00 mm)
.276" DIA
Polyimide
Film Pick &
Place Pad



ALSO AVAILABLE

MOQ Required

30 μ " (0.76 μ m) Gold

Edge Mount Capability

8 mm, 11 mm, 16 mm,

19 mm and 22 mm Stack

Height (Caution: Some

automatic placement/

inspection machines may

have component height

restrictions. Please consult

machinery specifications.)

(11 mm, 16 mm, 19 mm

and 22 mm not available

with 50 positions)



Note:

Some lengths, styles and
options are non-standard,
non-returnable.

BASIC BLADE & BEAM SOCKET

(0.50 mm) .0197" PITCH • BSH SERIES



BSH
Mates:
BTH

SPECIFICATIONS

Insulator Material:
Black LCP
Contact Material:
Phosphor Bronze
Plating:
Au or Sn over
50 μ " (1.27 μ m) Ni
Current Rating:
2 A per pin
(2 pins powered)
Operating Temp Range:
-55 °C to +125 °C
Voltage Rating:
175 VAC
Max Cycles:
100

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max (030-090)
(0.15 mm) .006" max (120-150)*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)
Board Stacking:
For applications requiring more
than two connectors per board
or 90 positions or higher,
contact ipg@samtec.com

BSH	NO. OF POSITIONS PER ROW	01	PLATING OPTION	D	A	OTHER OPTION
-----	-----------------------------	----	----------------	---	---	-----------------

-030, -050, -060,
-090, -120, -150

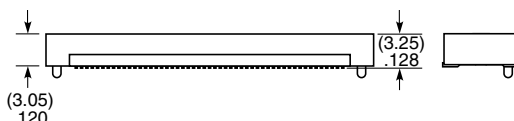
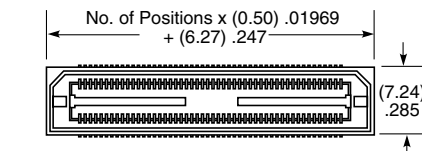
-F
= Gold Flash
on contact,
Matte Tin on tail

-L
= 10 μ " (0.25 μ m)
Gold on contact,
Matte Tin on tail

-C*
= Electro-Polished
Selective
50 μ " (1.27 μ m) min
Au over 150 μ " (3.81 μ m)
Ni on Signal Pins in
contact area,
Matte Tin over
50 μ " (1.27 μ m) min
Ni on all solder tails
(*-C Plating passes
10 year MFG testing)

-TR
= Tape & Reel
(120 positions
maximum)

-FR
= Full Reel
Tape & Reel
(must order
maximum
quantity
per reel;
contact
Samtec for
quantity breaks)
(120 positions
maximum)



MATED HEIGHT

LEAD STYLE	MATED HEIGHT*
-01	(5.00 mm) .1971"

*Processing conditions
will affect mated height.

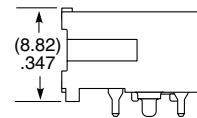
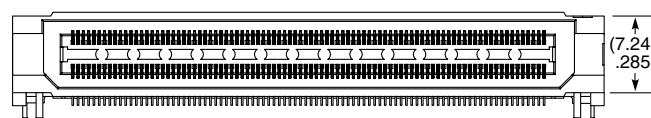
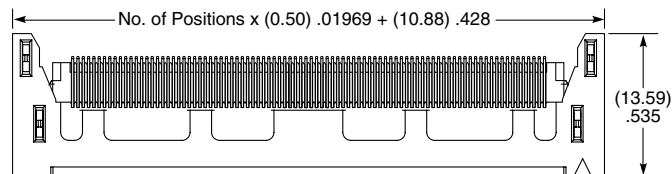
BSH	NO. OF POSITIONS PER ROW	01	PLATING OPTION	D	RA	WT	OTHER OPTION
-----	-----------------------------	----	-------------------	---	----	----	-----------------

-030, -060, -090

-F
= Gold Flash
on contact,
Matte Tin on tail

-L
= 10 μ " (0.25 μ m)
Gold on contact,
Matte Tin on tail

-GP
= Guide
Post



ALSO AVAILABLE

MOQ Required

30 μ " (0.76 μ m) Gold
Edge Mount Capability
8 mm, 11 mm, 16 mm, 19 mm
and 22 mm Stack Height
(Caution: Some automatic
placement/inspection
machines may have
component height
restrictions. Please consult
machinery specifications.)
(11 mm, 16 mm, 19 mm
and 22 mm not available
with 50 positions)



Note:
Some lengths, styles and
options are non-standard,
non-returnable.

BASIC BLADE & BEAM HEADER & SOCKET

(0.635 mm) .025" PITCH • BTS/BSS SERIES



BTS
Mates:
BSS

BSS
Mates:
BTS

SPECIFICATIONS

Insulator Material:
Liquid Crystal Polymer
Terminal Material:
Phosphor Bronze
Contact Material:
Phosphor Bronze
Plating:
Au or Sn over 50 μ " (1.27 μ m) Ni
Current Rating:
1.8 A per pin
(2 pins powered)
Operating Temp Range:
-55 °C to +125 °C

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max
Board Stacking:
For applications requiring more than two connectors per board or 100 positions or higher, contact ipg@samtec.com

ALSO AVAILABLE

MOQ Required

30 μ " (0.76 μ m) Gold
Other platings
Other positions

MATED HEIGHT

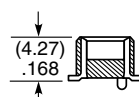
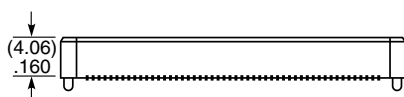
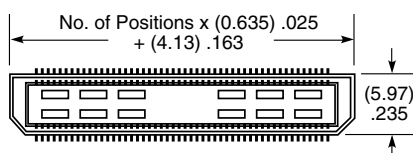
LEAD STYLE	MATED HEIGHT*
-01	(5.00 mm) .197"

*Processing conditions will affect mated height.

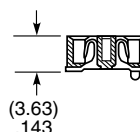
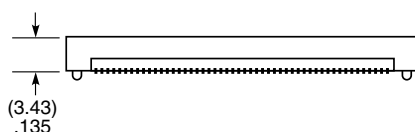
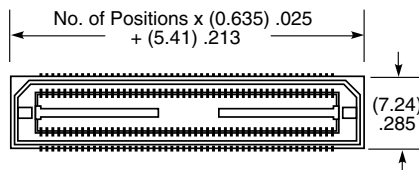


Note:
Some lengths, styles and options are non-standard, non-returnable.

BTS	NO. OF POSITIONS PER ROW	01	PLATING OPTION	D	A	OTHER OPTION
	-025, -050, -075, -100		-F = Gold Flash on contact, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail			-K = (7.00 mm) .275" DIA Polyimide Film Pick & Place Pad -TR = Tape & Reel (~100 positions max.) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (~100 positions max.)



BSS	NO. OF POSITIONS PER ROW	01	PLATING OPTION	D	A	OTHER OPTION
	-025, -050, -075, -100		-F = Gold Flash on contact, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail			-TR = Tape & Reel (~100 positions maximum) -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks) (~100 positions maximum)



BASIC BLADE & BEAM HEADER & SOCKET

(0.80 mm) .0315" PITCH • BTE/BSE SERIES



BTE
Mates:
BSE

BSE
Mates:
BTE

SPECIFICATIONS

Insulator Material:
Liquid Crystal Polymer
Contact Material:
Phosphor Bronze
Plating:
Au or Sn over 50 μ " (1.27 μ m) Ni
Current Rating:
2 A per pin
(2 pins powered)
Operating Temp Range:
-55 °C to +125 °C
Voltage Rating:
225 VAC with 5 mm Stack Height
Max Cycles:
100

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max (020-080)
(0.15 mm) .006" max (100-120)*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)
Board Stacking:
For applications requiring more
than two connectors per board
or 80 positions or higher,
contact ipg@samtec.com

ALSO AVAILABLE

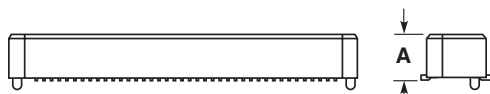
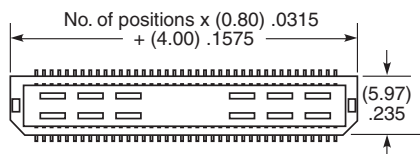
MOQ Required

30 μ " (0.76 μ m) Gold
Edge Mount Capability
Friction Lock option
11 mm, 14 mm, 16.10 mm,
19.10 mm, 22 mm, 25 mm
and 30 mm Stack
Height (Caution: Some
automatic placement/
inspection machines may
have component height
restrictions. Please consult
machinery specifications.)



Note:
Some lengths, styles and
options are non-standard,
non-returnable.

BTE	NO. OF POSITIONS PER ROW	LEAD STYLE	PLATING OPTION	D	A	OTHER OPTION
	-020, -040, -060, -080, -100, -120	Specify LEAD STYLE from chart	-F = Gold Flash on contact, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail -C* = Electro-Polished Selective 50 μ " (1.27 μ m) min Au over 150 μ " (3.81 μ m) Ni on Signal Pins in contact area, Matte Tin over 50 μ " (1.27 μ m) min Ni on all solder tails (*-C Plating passes 10 year MFG testing)			-K = (7.00 mm) .275" DIA Polyimide Film Pick & Place Pad -TR = Tape & Reel (80 positions maximum) -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks) (80 positions maximum)



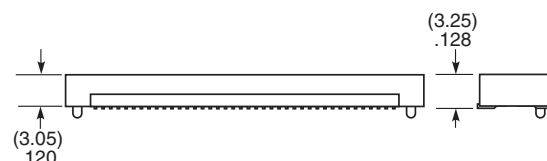
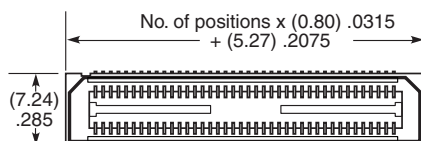
LEAD STYLE	A
-01	(4.27) .168
-02	(7.21) .284

MATED HEIGHT

LEAD STYLE	MATED HEIGHT*
-01	(5.00 mm) .1971"
-02	(8.00 mm) .315"

*Processing conditions
will affect mated height.

BSE	NO. OF POSITIONS PER ROW	01	PLATING OPTION	D	A	OTHER OPTION
	-020, -040, -060, -080, -100, -120		-F = Gold Flash on contact, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail -C* = Electro-Polished Selective 50 μ " (1.27 μ m) min Au over 150 μ " (3.81 μ m) Ni on Signal Pins in contact area, Matte Tin over 50 μ " (1.27 μ m) min Ni on all solder tails (*-C Plating passes 10 year MFG testing)			-TR = Tape & Reel (80 positions maximum) -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks) (80 positions maximum)



SMT MICRO HEADER & SOCKET

(0.80 mm) .0315" PITCH • FTE/CLE SERIES



FTE
Mates:
CLE

CLE
Mates:
FTE, AW

SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Terminal Material:
Phosphor Bronze
Contact Material:
BeCu
Plating:
Au over 50 μ " (1.27 μ m) Ni
Current Rating (FTE/CLE):
2.7 A per pin
(2 pins powered)
Operating Temp Range:
-55 °C to +125 °C
Insertion Depth (CLE):
Top Entry =
(1.73 mm) .068" to (3.18 mm) .125"
with (0.38 mm) .015"
wipe, or pass-through
Bottom Entry =
(3.23 mm) .127" minimum plus
board thickness
Normal Force (CLE):
75 grams (0.73 N)
Max Cycles (CLE):
100 with 10 μ " (0.25 μ m) Au

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity (FTE):
-DV: (0.10 mm) .004" max
-DH: (0.10 mm) .004" max (05-25)
(0.15 mm) .006" max (26-50)*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)
SMT Lead Coplanarity (CLE):
(0.10 mm) .004" max (04-65)
(0.15 mm) .006" max (66-90)*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)

FTE	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	TAIL OPTION	FLEX SHROUD OPTIONS	OTHER OPTION
-----	---	---------------------	---------------	-------------------	----------------	------------------------	-----------------

05
thru
90

Specify
LEAD
STYLE
from
chart

-G
= 10 μ "
(0.25 μ m)
Gold on
post,
Gold flash
on balance

-DV
= Dual
Vertical
-DH
= Dual
Horizontal
(50 positions
maximum)

Style -01 -DV only
(11 pins/row
minimum)

-ES
= End Shroud

-EC
= End Shroud with
Locking Clips
(Manual placement
required)

-EP
= End Shroud with
Guide Posts

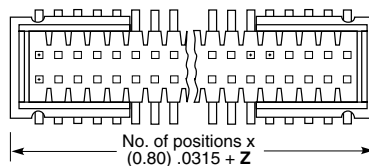
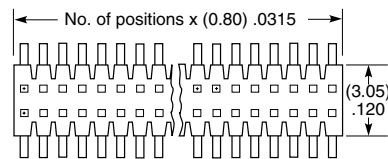
-A
= Alignment
Pin
(5 positions
minimum)
Metal or
plastic at
Samtec
discretion
(-DV only)

-K
= (2.50 mm)
.098" DIA
Polyimide
Film Pick &
Place Pad
(-DH only)

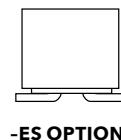
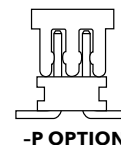
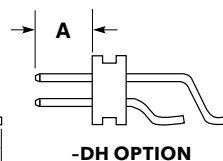
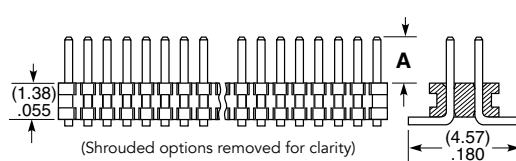
-P
= Plastic Pick
& Place Pad
(8 positions
minimum)
-DV only

-TR
= Tape & Reel

-FR
= Full Reel
Tape & Reel
(must order
max. quantity
per reel;
contact
Samtec for
quantity
breaks)



OPTION	Z	LEAD STYLE	A
-ES	(1.57) .062	-01	(1.90) .075
-EC	(4.11) .162	-02	(4.45) .175
-EP	(5.51) .217	-03	(3.05) .120



CLE	1	NO. PINS PER ROW	01	PLATING OPTION	DV	OPTIONS
-----	---	---------------------	----	-------------------	----	---------

04 thru 90

-G
= 10 μ "
(0.25 μ m)
Gold

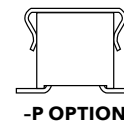
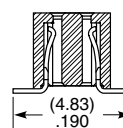
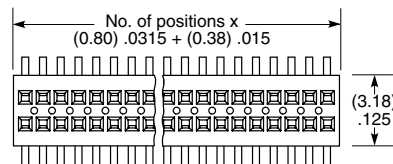
-A
= Alignment Pin
(4 positions minimum)
Metal or plastic at
Samtec discretion.

-K
= (3.50 mm) .138" DIA
Polyimide film
Pick & Place Pad
(8 positions minimum)

-P
= Metal Pick & Place Pad
(8 positions minimum)

-TR
= Tape & Reel

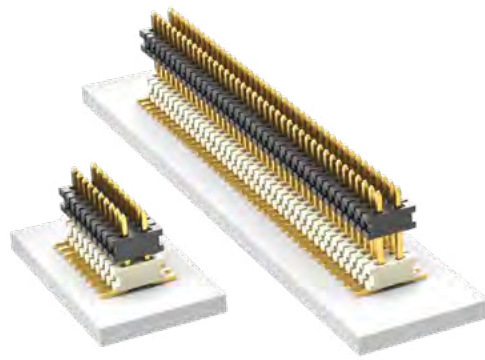
-FR
= Full Reel Tape & Reel
(must order max. quantity
per reel; contact Samtec
for quantity breaks)



Note:
Some lengths, styles and
options are non-standard,
non-returnable.

SMT MICRO BOARD STACKER

(0.80 mm) .0315" PITCH • AW SERIES



AW
Mates:
CLE

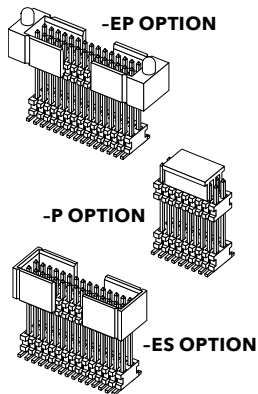
SPECIFICATIONS

Insulator Material:
Top: Black LCP
Bottom: Natural LCP
Terminal Material:
Phosphor Bronze
Plating:
Au over 50 μ " (1.27 μ m) Ni
Operating Temp Range:
-55 °C to +125 °C

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max (05-40)
(0.15 mm) .006" max (41-90)*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)

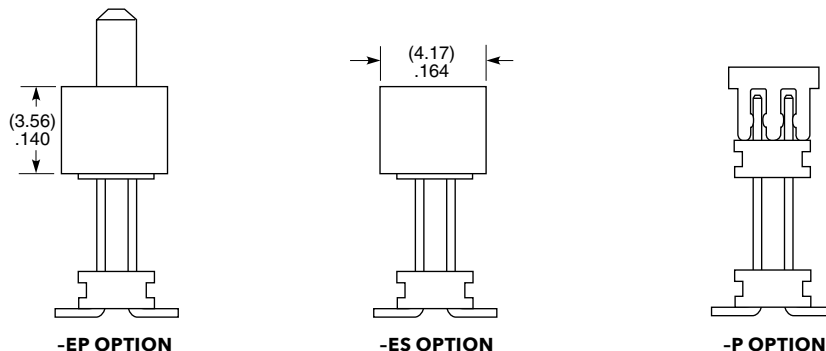
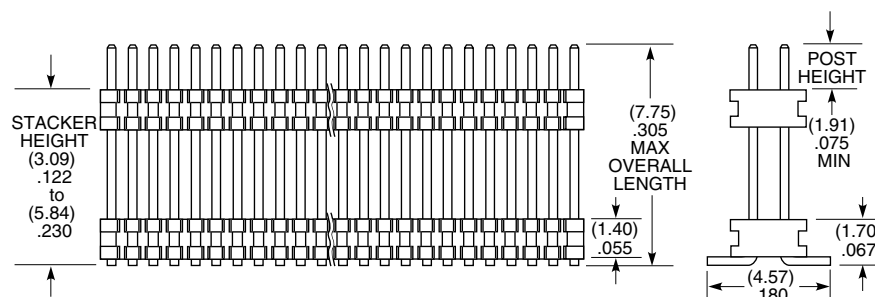
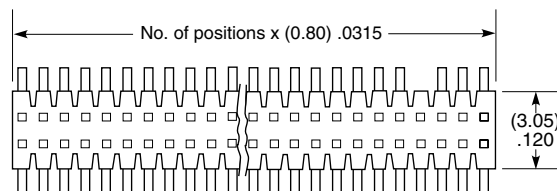
OPTIONS



Notes:
For added mechanical
stability, Samtec recommends
mechanical board spacers be
used in applications with
gold or selective gold
plated connectors.
Contact ipg@samtec.com
for more information.

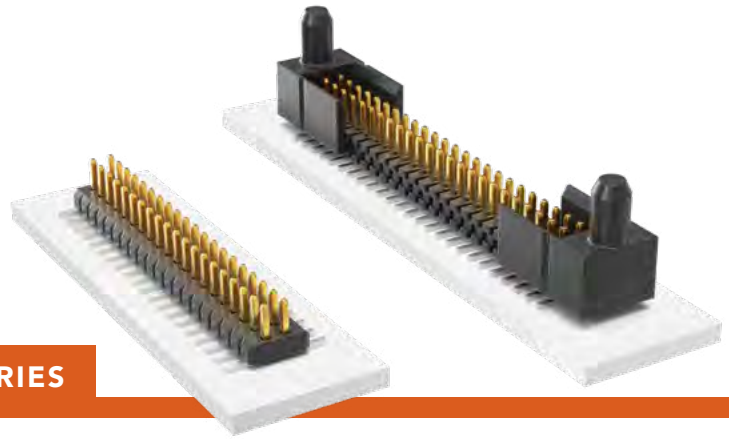
Some lengths, styles and
options are non-standard,
non-returnable.

AW	NO. PINS PER ROW	03	PLATING OPTION	D	STACKER HEIGHT	POST HEIGHT	OTHER OPTION
	05 thru 90		-G = 10 μ " (0.25 μ m) Gold		- "XXX" = Stacker Height (in inches) (3.09 mm) .122" to (5.84 mm) .230"	- "XXX" = Post Height (in inches) (1.91 mm) .075" minimum	-ES = End Shroud 11 pins/row min. (-.075 Post Height only) -EP = End Shroud with Guide Post (-.075 Post Height only) 11 pins/row min.
					Example: -.175 = (4.45 mm) .175"	Example: -.075 = (1.91 mm) .075"	-A = Alignment Pin (4 positions min.) (Available for board stacks between (4.06 mm) .160" to (5.84 mm) .230") (Metal or plastic at Samtec discretion.) -P = Pick & Place Pad (8 positions min.) -TR = Tape & Reel (84 positions max.) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (84 positions max.)



SMT MICRO TERMINAL STRIPS

(1.00 mm) .0394" PITCH • FTMH/FTM SERIES



FTMH
Mates:
CLM, MLE

FTM
Mates:
CLM, MLE

SPECIFICATIONS

Insulator Material:
Black Liquid Crystal
Polymer
Terminal Material:
Phosphor Bronze
Plating:
Sn or Au over
50 μ " (1.27 μ m) Ni
Current Rating (FTMH/CLM):
2.8 A per pin
(2 pins powered)
Operating Temp Range:
-55 °C to +125 °C

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
-DV: (0.10 mm) .004" max
-DH: (0.10 mm) .004" max (05-25)
(0.15 mm) .006" max (26-50)*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)

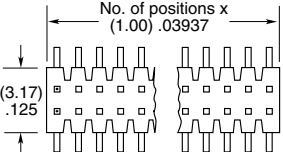
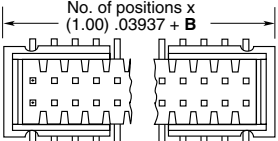
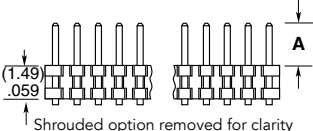
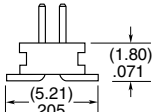
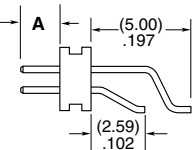
ALSO AVAILABLE

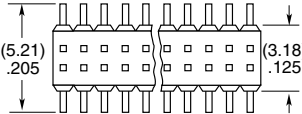
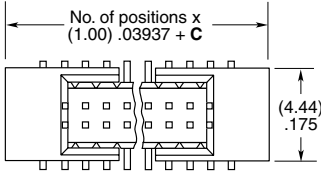
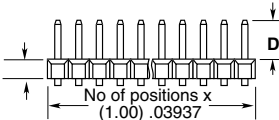
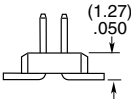
MOQ Required

End shrouds with board locks
Molded end shrouds for
05 through 08 positions
Other platings



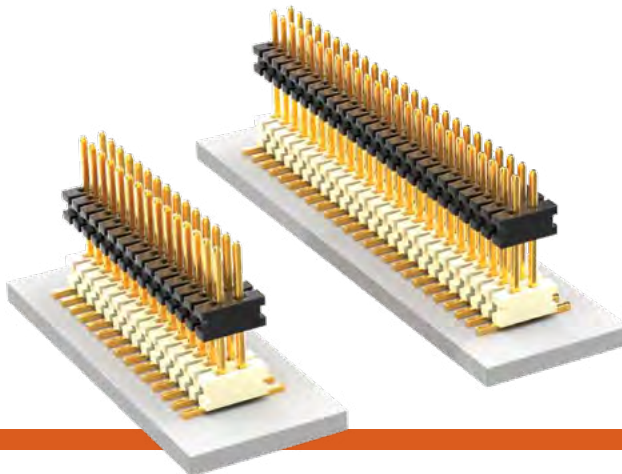
Note:
Some lengths, styles and
options are non-standard,
non-returnable.

FTMH	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	FLEX SHROUD OPTION	OTHER OPTION								
		05 thru 50	-02 = (1.91 mm) .075" Post (Mates with MLE)	-F = Gold flash on post, Matte Tin on tail	-DV = Dual Vertical	(-DV only with 9 pins/row minimum)	-A = Alignment Pin (3 positions min.) Metal or plastic at Samtec discretion (-DV only)								
			-03 = (1.65 mm) .065" Post (Mates with CLM)	-L = 10 μ" (0.25 μm) Gold on post, Matte Tin on tail	-DH = Dual Horizontal	-ES = End Shroud	-K = (2.50 mm) .098" DIA Polyimide Film Pick & Place Pad (-DH only)								
						-EC = End Shroud with Locking Clip (Manual placement required)	-P = Plastic Pick & Place Pad (6 positions min.) (-DV only)								
						-EP = End Shroud with Guide Post (Use only when mating with CLM)	-TR = Tape & Reel								
							-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)								
						<table><tr><th>OPTION</th><th>B</th></tr><tr><td>-ES</td><td>(1.57) .062</td></tr><tr><td>-EC</td><td>(4.06) .160</td></tr><tr><td>-EP</td><td>(5.49) .216</td></tr></table>		OPTION	B	-ES	(1.57) .062	-EC	(4.06) .160	-EP	(5.49) .216
OPTION	B														
-ES	(1.57) .062														
-EC	(4.06) .160														
-EP	(5.49) .216														
															
		-DV OPTION		-DH OPTION		<table><tr><th>LEAD STYLE</th><th>A</th></tr><tr><td>-02</td><td>(1.91) .075</td></tr><tr><td>-03</td><td>(1.65) .065</td></tr></table>		LEAD STYLE	A	-02	(1.91) .075	-03	(1.65) .065		
LEAD STYLE	A														
-02	(1.91) .075														
-03	(1.65) .065														

FTM	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	DV	FLEX SHROUD OPTION	OTHER OPTION						
		02 thru 50 = Unshrouded 05 thru 46 = Shrouded	-02 = (1.91 mm) .075" Post (Mates with MLE) -03 = (1.65 mm) .065" Post (Mates with CLM)	-F = Gold flash on post, Matte Tin on tail -L = 10 μ" (0.25 μm) Gold on post, Matte Tin on tail		-S = End Shroud (05 positions minimum). Molded or press-fit shroud at Samtec's discretion -SA = End Shroud with Alignment Pins (05 through 46 positions)	-P = Plastic Pick & Place Pad (7 positions min.) -TR = Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)						
					<table><thead><tr><th>OPTION</th><th>C</th></tr></thead><tbody><tr><td>-S</td><td>(7.00) .276</td></tr><tr><td>-SA</td><td>(4.00) .157</td></tr></tbody></table>			OPTION	C	-S	(7.00) .276	-SA	(4.00) .157
OPTION	C												
-S	(7.00) .276												
-SA	(4.00) .157												
					<table><thead><tr><th>LEAD STYLE</th><th>D</th></tr></thead><tbody><tr><td>-02</td><td>(1.91) .075</td></tr><tr><td>-03</td><td>(1.65) .065</td></tr></tbody></table>			LEAD STYLE	D	-02	(1.91) .075	-03	(1.65) .065
LEAD STYLE	D												
-02	(1.91) .075												
-03	(1.65) .065												
Shrouded options removed for clarity													

SMT MICRO BOARD HEADER

(1.00 mm) .0394" PITCH • MW SERIES



MW

Mates:

CLM, MLE

SPECIFICATIONS

Insulator Material:

Top: Black LCP

Bottom: Natural LCP

Terminal Material:

Phosphor Bronze

Plating:

Au over 50 μ " (1.27 μ m) Ni

Operating Temp Range:

-55 °C to +125 °C

PROCESSING

Lead-Free Solderable:

Yes

SMT Lead Coplanarity:

(0.10 mm) .004" max (02-30)

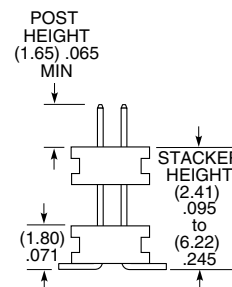
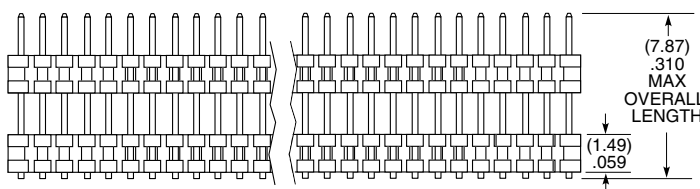
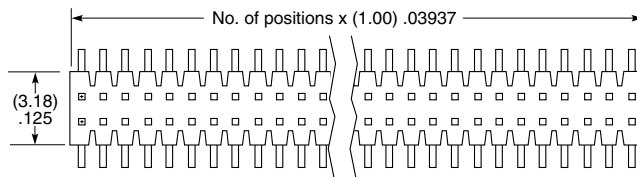
(0.15 mm) .006" max (31-50)*

*(.004" stencil solution

may be available; contact

IPG@samtec.com)

MW	NO. PINS PER ROW	03	PLATING OPTION	D	STACKER HEIGHT	POST HEIGHT	OPTION
	02 thru 50		-G = 10 μ " (0.25 μ m) Gold		- "XXX" = Stacker Height (in inches) (2.41 mm) .095" to (6.22 mm) .245" Example: -245 = (6.22 mm) .245"	- "XXX" = Post Height (in inches) (1.65 mm) .065" minimum Example: -065 = (1.65 mm) .065"	-A = Alignment Pin (5 positions minimum) Metal or plastic at Samtec's discretion -P = Pick & Place Pad (7 positions minimum) -TR = Tape & Reel -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks)



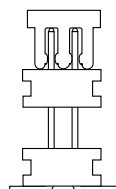
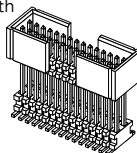
ALSO AVAILABLE

MOQ Required

End shrouds

End shrouds with

guide posts



-P OPTION

Notes:

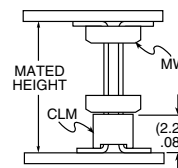
For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors. Contact ipg@samtec.com for more information.

This Series is non-standard, non-returnable.

APPLICATION

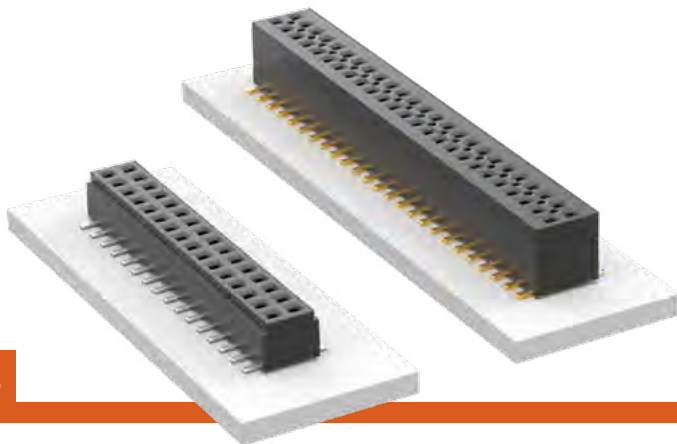
EXAMPLES		
LEAD STYLE		MATED HEIGHT*
MW	CLM	
-163-065	-02	(6.35 mm) .250"
-233-065		(8.13 mm) .320"

*Processing conditions will affect mated height.



RUGGED RELIABLE MICRO SOCKETS

(1.00 mm) .0394" PITCH • CLM/MLE SERIES



CLM

Mates:

FTM, FTMH, MW

MLE

Mates:

FTM, FTMH, MW

SPECIFICATIONS

Insulator Material: Black LCP

Contact Material:

CLM: Phosphor Bronze

MLE: BeCu

Plating:

CLM: Au or Sn over

50 μ " (1.27 μ m) Ni

MLE: Au over 10 μ " (0.25 μ m) Ni

Current Rating (CLM/FTM):

2.8 A per pin

(2 pins powered)

Current Rating (MLE/FTM):

2.9 A per pin (2 pins powered)

Operating Temp Range:

-55 °C to +125 °C

Max Cycles:

CLM: 100 with 10 μ " (0.25 μ m) Au

Voltage Rating:

MLE: 310 VAC

Insertion Depth:

CLM:

Top Entry = (1.40 mm) .055" min.,

Bottom Entry =

(2.41 mm) .095" min.

(Add board thickness for

correct post OAL)

MLE:

(1.63 mm) .064" to

(3.18 mm) .125" with

(0.38 mm) .015" wipe,

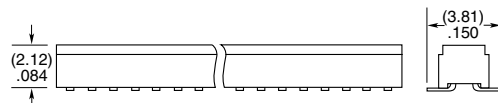
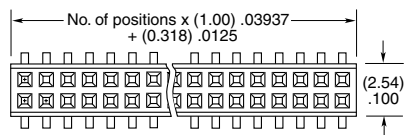
pass-through, or (2.44 mm) .096"

minimum for bottom entry

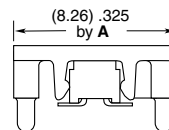
Normal Force:

CLM: 40 grams (0.39 N) average

**TIGER
CLAW
CONTACT**



PIN/ROW	A
04-15	(3.56) .140
16-50	(7.11) .280



-PA



-P

MLE

- 1

**NO. PINS
PER ROW**

- 01

**PLATING
OPTION**

- DV

OPTIONS

02 thru 50

Lead-Free Solderable: Yes

SMT Lead Coplanarity:

(0.10 mm) .004" max (02-25)

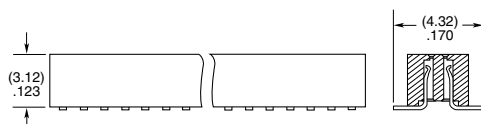
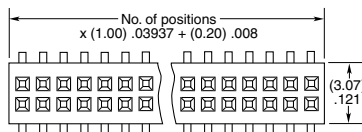
(0.15 mm) .006" max (26-50)*

*(.004" stencil solution

may be available; contact

IPG@samtec.com)

**TIGER
BEAM
CONTACT**



-G
= 10 μ "
(0.25 μ m)
Gold

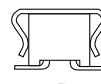
-A
= Alignment Pin
(3 positions minimum)
Metal or plastic
at Samtec discretion

-K
= (4.00 mm) .1575" DIA
Polyimide film
Pick & Place Pad
(5 positions minimum)

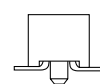
-P
= Metal Pick & Place Pad
(5 positions minimum)

-TR
= Tape & Reel

-FR
= Full Reel Tape & Reel
(must order maximum
quantity per reel;
contact Samtec for
quantity breaks)



-P



-A

ALSO AVAILABLE

MOQ Required

Alignment pin

Other Gold plating options



Note:

Some lengths, styles and options are non-standard, non-returnable.

QUAD ROW SMT TERMINAL & SOCKET

(1.27 mm) .050" PITCH • TOLC/SOLC SERIES



TOLC
Mates:
SOLC

SOLC
Mates:
TOLC

SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Contact Material:
Phosphor Bronze
Plating:
Au over 50 μ " (1.27 μ m) Ni
Current Rating:
2.4 A per pin
(6 adjacent pins powered)
Operating Temp Range:
-55 °C to +125 °C
Insertion Depth (SOLC):
(1.68 mm) .066" to
(3.61 mm) .142" with
(0.38 mm) .015" wipe
Normal Force (SOLC):
75 grams (0.74 N) average
Max Cycles (SOLC):
100+

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max (05-35)
(0.15 mm) .006" max (40-50)*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)

ALSO AVAILABLE

MOQ Required

Other sizes
Other platings

Note:
Some lengths, styles and
options are non-standard,
non-returnable.

TOLC	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	Q	OTHER OPTION
------	---	---------------------	---------------	-------------------	---	-----------------

05, 10, 15, 20, 25,
30, 35, 40, 45, 50
(Standard Sizes)

Specify
LEAD
STYLE
from
chart

-F
= Gold flash
on contact,
Gold flash
on tail

-L
= 10 μ "
(0.25 μ m)
Gold on
contact,
Gold flash
on tail

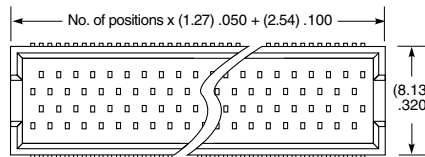
-A
= Alignment Pin
(N/A with -LC)

-LC
= Locking Clip
(N/A with -A)
(Manual
placement required)

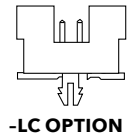
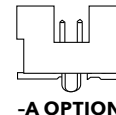
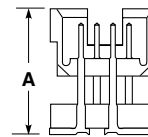
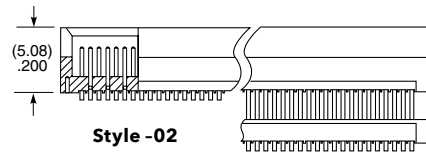
-K
= (9.00 mm) .354" DIA
Polyimide film
Pick & Place Pad

-TR
= Tape & Reel

-FR
= Full Reel Tape & Reel
(must order max.
quantity per reel;
contact Samtec for
quantity breaks)



LEAD STYLE	A	MATED HEIGHT
-02	(5.59) .220	(6.35) .250
-12	(7.24) .285	(8.00) .315
-22	(9.25) .364	(10.00) .394
-32	(11.23) .442	(12.00) .472



SOLC	1	NO. PINS PER ROW	02	PLATING OPTION	Q	OTHER OPTION
------	---	---------------------	----	-------------------	---	-----------------

05, 10, 15, 20, 25,
30, 35, 40, 45, 50
(Standard Sizes)

-F
= Gold flash
on contact,
Gold flash
on tail

-L
= 10 μ " (0.25 μ m)
Gold on contact,
Gold flash
on tail

-A
= Alignment Pin
(N/A with -LC)

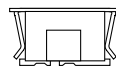
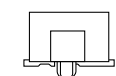
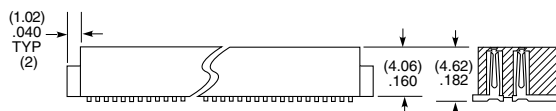
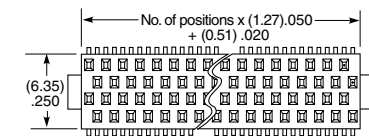
-LC
= Locking Clip
(N/A with -A)
(Manual
placement required)

-K
= (7.00 mm) .276" DIA
Polyimide film
Pick & Place Pad

-P
= Pick & Place Pad

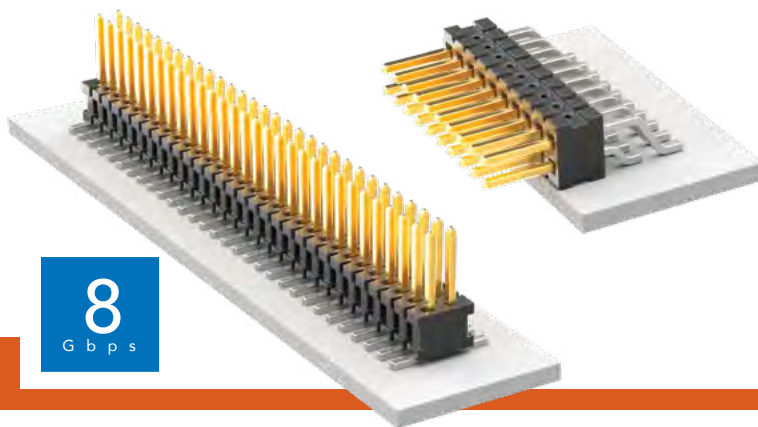
-TR
= Tape & Reel

-FR
= Full Reel Tape & Reel
(must order max.
quantity per reel;
contact Samtec for
quantity breaks)



SURFACE MOUNT MICRO HEADER

(1.27 mm) .050" PITCH • FTSH SERIES



FTSH

Board Mates:

CLP, FLE

Cable Mates:

FFSD, FFTP

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Terminal Material:

Phosphor Bronze

Plating:

Sn or Au over

50 μ " (1.27 μ m) Ni

Current Rating (FTSH/CLP):

3.4 A per pin

(2 pins powered)

Operating Temp Range:

-55 °C to +125 °C

PROCESSING

Lead-Free Solderable:

Yes

SMT Lead Coplanarity:

-MT & -DV Tail Option:

(0.10 mm) .004" max (02-25)

-MT & -DH Tail Option:

(0.15 mm) .006" max (26-50)*

*(.004" stencil solution

may be available; contact

IPG@samtec.com)

ALSO AVAILABLE

MOQ Required

Molded Pick & Place pads

Latches

Other platings

FTSH	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	TAIL OPTION	OPTION	FLEX SHROUD OPTIONS	OTHER OPTIONS
------	---	------------------	------------	----------------	-------------	--------	---------------------	---------------

02
thru
50

-01
= (3.05 mm)
.120" Post
(Mates with
FFSD)

-02
= (1.91 mm)
.075" Post
(Mates with
FLE)

-03
= (1.65 mm)
.065" Post
(Mates with
CLP-D)

-04
= (3.81 mm)
.150" Post
(Mates with
CLP-DH)

-05
= (4.32 mm)
.170" Post
(Mates with
CLP-BE)

-F
= Gold flash
on post,
Matte Tin
on tail

-L
= 10 μ "
(0.25 μ m)
Gold
on post,
Matte Tin
on tail

-DV
= Double
Vertical

-DH
= Double
Horizontal
(Styles
-01, -02 &
-04 only)

-MT
= Mixed
Technology
(Styles
-01, -02 &
-04 only)

Leave Blank
for -DH &
-MT

"XXX"
= Polarized
Position
(Specify
position
of
omitted
pin)
(Not
available
with -EX
options)

(Style -02 & -03
only, -DH & -MT
not available)
9 pins/row
minimum
(Other positions
available. Call
Samtec.)

-ES
= End Shroud

-EC
= End Shroud
with Locking Clip
(Manual
placement
required)

-EP
= End Shroud
with Guide Post

-EL
= End Shroud with
Board Lock
(Boards are
positively locked
and cannot be
unmated)

-EJ
= Ejector Shroud
(Style -01 only)
-DH & -MT
not available
10 pins/row
minimum
25 pins/row
maximum

-K
= Keying
Shroud
(For mating
with FFSD
Style -01 only
and 05, 08, 10,
13, 15, 17,
20 & 25
pins/row only.
13, 17, 20 & 25
pins/row only
with -EJ option)
(-DV only)

-A
= Alignment
Pin
(-DV 3 positions
minimum)
(-DH 5 positions
minimum)
(Metal or
plastic at
Samtec
discretion)

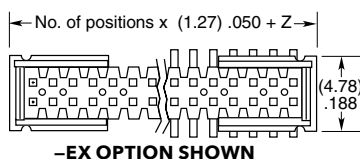
-C
= (5.00 mm)
.197" DIA
Polyimide film
Pick & Place Pad
(-DH only)

-P
= Pick &
Place Pad
(-DV 4 positions
minimum)
(-DH & -MT
not available)

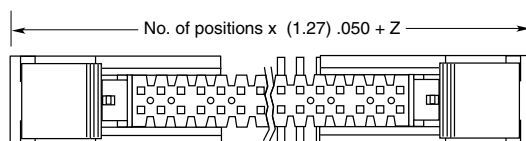
-TR
= Tape & Reel
(Flex Shroud
options
not available
except -ES
& -EJ)

-FR
= Full Reel
Tape & Reel
(must order
maximum
quantity
per reel;
contact
Samtec for
quantity breaks)

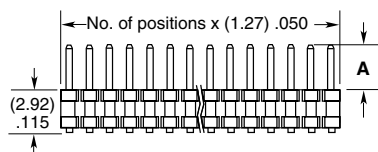
OPTION	Z
-ES	(2.57) .101
-EJ	(15.77) .621
-EC	(3.33) .131
-EP	(5.87) .231
-EL	(6.53) .257



-EX OPTION SHOWN



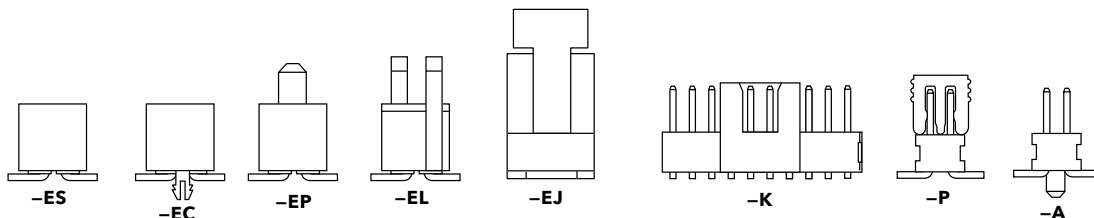
-EJ OPTION SHOWN



-DV

-MT
(Styles -01, -02 & -04 only)

-DH
(Styles -01, -02, -04 only)



Notes:

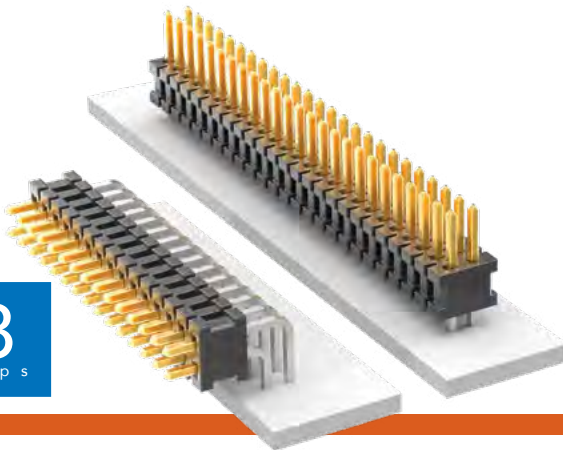
Some sizes, styles and options are non-standard, non-returnable.

See SFM/TFM for positive alignment feature.



THROUGH-HOLE MICRO HEADER

(1.27 mm) .050" PITCH • FTSH SERIES



FTSH

Board Mates:

CLP, FLE

Cable Mates:

FFSD, FFTP

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Terminal Material:

Phosphor Bronze

Plating:

Sn or Au over 50 μ " (1.27 μ m) Ni

Current Rating (FTSH/CLP):

3.4 A per pin
(2 pins powered)

Operating Temp Range:

-55 °C to +125 °C

PROCESSING

Lead-Free Solderable:

Yes

LOCKING CLIP

For single

mating

cycle

with the

FFSD.

Specify

-LC after tail option.

Lead Style -01 and

10 pins/row minimum.

5-9 pins/row not available

in combination with keying

shroud (-K).

ALSO AVAILABLE

MOQ Required

Molded Pick & Place pads

Other platings



Notes:

Some sizes, styles and options are non-standard, non-returnable.

See SFM/TFM for positive alignment feature.

FTSH	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	D	OPTION	TAIL OPTION	OTHER OPTIONS
------	---	------------------	------------	----------------	---	--------	-------------	---------------

02
thru
50

Specify
LEAD
STYLE
from
chart

-F
= Gold flash
on post,
Matte Tin
on tail

-L
= 10 μ "
(0.25 μ m)
Gold on
post,
Matte Tin
on tail

Leave blank for
Right-angle

-"XXX"
= Polarized
Position
(Specify
position
of omitted pin)
(Not available
with -EX
options)

Leave
blank for
straight
tail

-RA
= Right-
angle

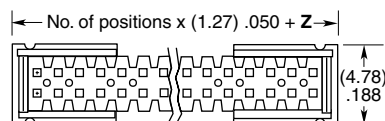
-ES
= End Shroud
(Style -02 & -03)
9 pins/row
minimum

-EP
= End Shroud
with Guide Post
(Style -02 & -03)
9 pins/row
minimum

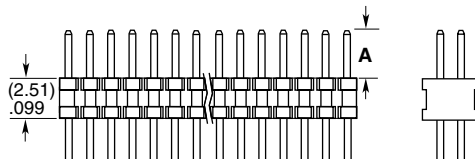
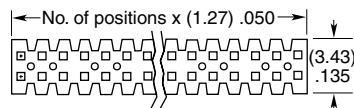
-EL
= End Shroud
with Board Lock
(Style -02 & -03)
9 pins/row
minimum

-EJ
= Ejector Shroud
(Style -01 only)
10 pins/row
minimum
25 pins/row
maximum -RA
not available

-K
= Keying Shroud
for mating
with FFSD
(Style -01 only,
05, 08, 10, 13,
15, 17, 20 & 25
pins/row only
and 13, 17,
20 & 25 only
with -EJ option)

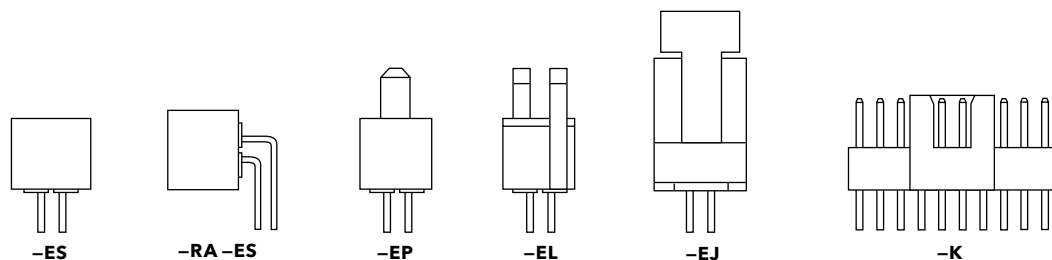
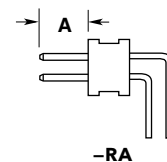


-EX OPTION SHOWN



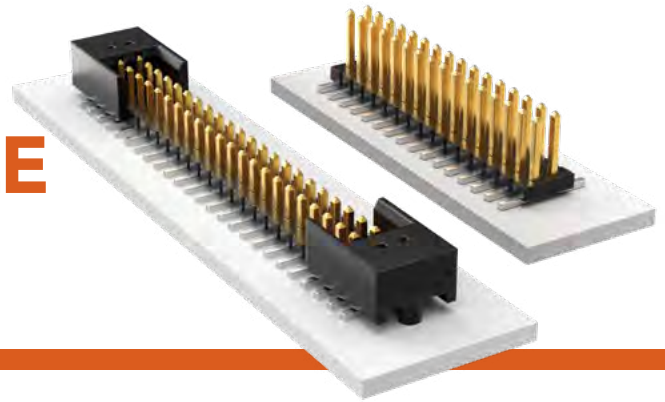
OPTION	Z
-ES	(1.55) .061
-EJ	(15.77) .621
-EP	(5.87) .231
-EL	((6.53) .257

LEAD STYLE	A	MATES WITH
-01	(3.05) .120	FFSD
-02	(1.91) .075	FLE
-03	(1.65) .065	CLP-D
-04	(3.81) .150	N/A



MICRO LOW-PROFILE TERMINAL STRIPS

(1.27 mm) .050" PITCH • FTS SERIES



FTS

Board Mates:
CLP, FLE

Cable Mates:
FFSD

SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Terminal Material:
Phosphor Bronze
Operating Temp Range:
-55 °C to +125 °C
Plating:
Sn or Au over 50 μ" (1.27 μm) Ni
Current Rating:
3.4 A per pin
(2 pins powered)

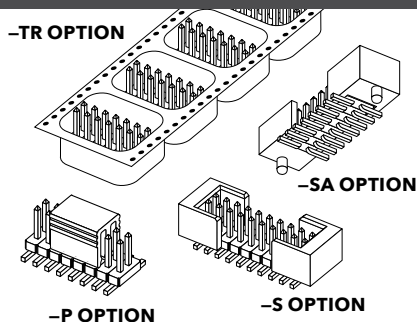
PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
.004" (0.10 mm) max

ALSO AVAILABLE

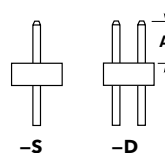
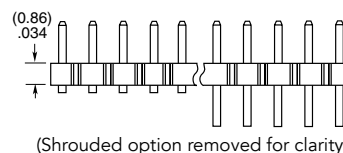
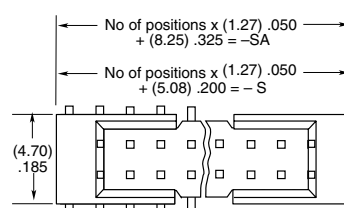
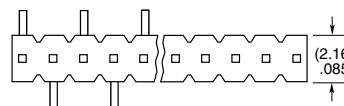
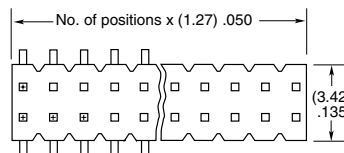
Alignment pin
(MOQ Required)

OPTIONS

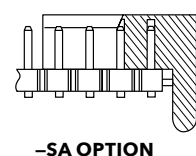
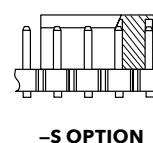
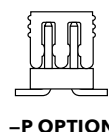
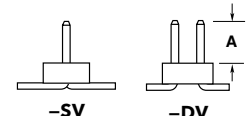


Note:
Some lengths, styles and options are non-standard, non-returnable.

FTS	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OTHER OPTION
		02 thru 50 (except -S & -SA option = 05 thru 46)	-01 = (3.05 mm) .120" Post (Mates with FFSD)	-F = Gold flash on post, Matte Tin on tail	-D = Double Through-hole	(-D & -DV only)
			-02 = (1.91 mm) .075" Post (Mates with FLE)	-L = 10 μ" (0.25 μm) Gold on post, Matte Tin on tail	-DV = Double Vertical SMT	-SA = End Shroud with Alignment Pin (05 thru 46 positions. Style -02 & -03 only)
			-03 = (1.65 mm) .065" Post (Mates with CLP)		-S = Single Through-hole	-S = End Shroud (05 thru 46 positions. Style -02 & -03 only)
			-04 = (3.81 mm) .150" Post		-SV = Single Vertical SMT	-P = Pick & Place Pad (04 positions min.)
						-TR = Tape & Reel (-DV only) (Required callout for positions 02 thru 04)
						-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (-DV only)

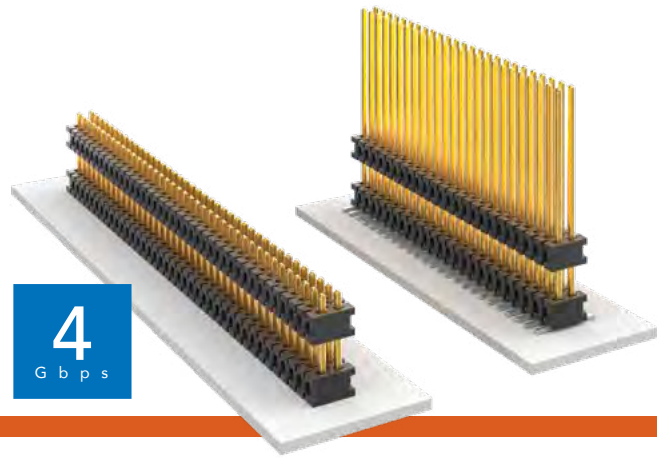


LEAD STYLE	A
-01	(3.05) .120
-02	(1.91) .075
-03	(1.65) .065
-04	(3.81) .150



MICRO BOARD STACKER

(1.27 mm) .050" PITCH • FW SERIES



FW

Board Mates:

CLP, FLE

Cable Mates:

FFSD

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Terminal Material:

Phosphor Bronze

Plating:

Sn or Au over 50 μ " (1.27 μ m) Ni

Operating Temp Range:

-55 $^{\circ}$ C to +125 $^{\circ}$ C

PROCESSING

Lead-Free Solderable:

Yes

SMT Lead Coplanarity:

(0.10 mm) .004" max (02-30)

(0.15 mm) .006" max (31-50)*

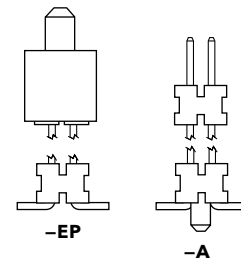
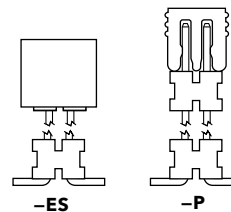
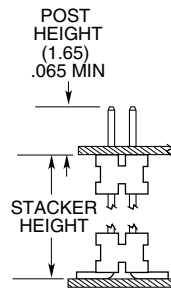
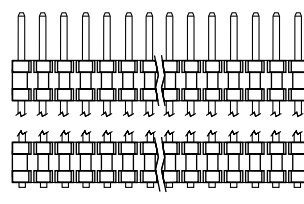
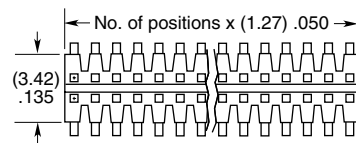
*(.004" stencil solution may be available; contact IPG@samtec.com)

MATED HEIGHT

FW LEAD STYLE	CLP LEAD STYLE	MATED HEIGHT*
FW-XX-03-X-X-233-065	-02	8.13 mm) .329"
FW-XX-03-X-X-303-065		9.91 mm) .390"

*Processing conditions will affect mated height.

SURFACE MOUNT



ALSO AVAILABLE

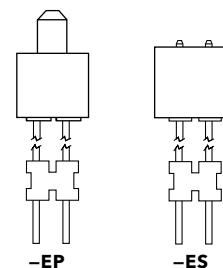
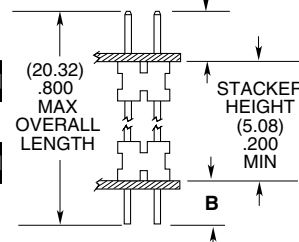
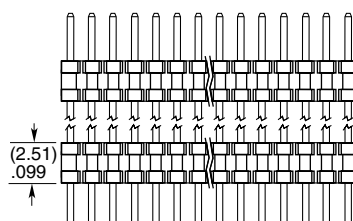
Smaller stack heights
(MOQ Required)

Notes:

For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors. Contact ipg@samtec.com for more information.

This Series is non-standard, non-returnable.

THROUGH-HOLE



LEAD STYLE	TAIL (B)
-01	(1.14) .045
-02	(1.91) .075
-04	(2.29) .090

-ES
= End Shroud
(-.075 post height only.
Mate only with CLP)
(5.46 mm) .215" to (15.49 mm) .610" stacker height only
9 pins/row min.

-EP
= End Shroud with Guide Post
(-.075 post height only.
Mate only with CLP)
(5.46 mm) .215" to (15.49 mm) .610" stacker height only
9 pins/row min.

-A
= Alignment Pin
(3 positions min.)
(5.46 mm) .215" to (15.75 mm) .620" stacker height only
(SMT only)

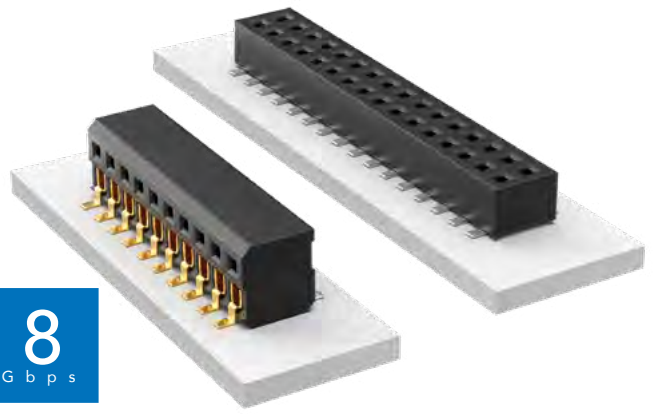
-P
= Pick & Place Pad
(5 positions min.)
(SMT only)

-TR
= Tape & Reel
(Max overall height = Post+Stacker Height+Pad+Alignment Pin = (17.78) .700")
(SMT only)

-FR
= Full Reel
Tape & Reel
(must order max. quantity per reel; contact Samtec for quantity breaks)
(SMT only)

LOW-PROFILE DUAL WIPE SOCKET

(1.27 mm) .050" PITCH • CLP SERIES



CLP
Mates:
FTSH, FTS, FW

CLP	1	NO. PINS PER ROW	02	PLATING OPTION	ROW OPTION	OTHER OPTIONS
-----	---	------------------	----	----------------	------------	---------------

02 thru 50

SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Contact Material:
Phosphor Bronze
Plating:
Sn or Au over
50 μ " (1.27 μ m) Ni
Current Rating (CLP/FTSH):
3.4 A per pin
(2 pins powered)
Voltage Rating:
280 VAC/395 VDC
Operating Temp Range:
-55 °C to +125 °C
Insertion Depth:
Top Entry =
(1.40 mm) .055" minimum
Bottom Entry =
(2.41 mm) .095" minimum
plus board thickness
DH Entry =
(2.31 mm) .091" to (2.67 mm) .105"
Normal Force:
60 grams (0.59 N) average
Max Cycles:
100 with 10 μ " (0.25 μ m) Au

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max (02-35)
(0.15 mm) .006" max (36-50)*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)

ALSO AVAILABLE

MOQ Required

Single row
Other platings

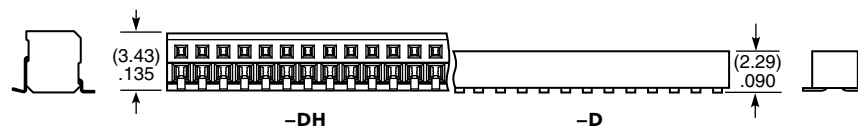
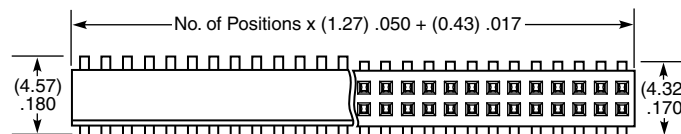
-F
= Gold flash
on contact,
Matte Tin
on tail
-L
= 10 μ "
(0.25 μ m)
Gold on
contact,
Matte Tin
on tail
-G
= 10 μ "
(0.25 μ m)
Gold
(-D only)

-D
= Double
Row
-DH
= Double
Horizontal
(Requires
FTSH-04
lead style)

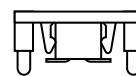
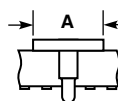
-BE
= Bottom Entry
(Required for bottom
entry applications)
-A
= Alignment Pin
(Not available with -PA option)
(05, 06, 07, 08, 10, 12, 15,
20, 25, 30, 40 positions only)
(-DH option and other sizes.
Contact Samtec.)
-K
= (4.00 mm) .157" DIA
Polyimide film Pick & Place Pad
(5 positions minimum)
-P
= Pick & Place Pad
(5 positions min. -D only)
(Not always necessary
for auto placement.
See Flex Processing.)
-PA
= Pick & Place Pad
with Alignment Pin
(-D only)
(Not available with -A option)

-TR
= Tape & Reel

-FR
= Full Reel Tape & Reel
(must order maximum
quantity per reel;
contact Samtec for
quantity breaks)



PIN/ROW	A
04-15	(3.56) .140
16-50	(7.11) .280



-PA OPTION



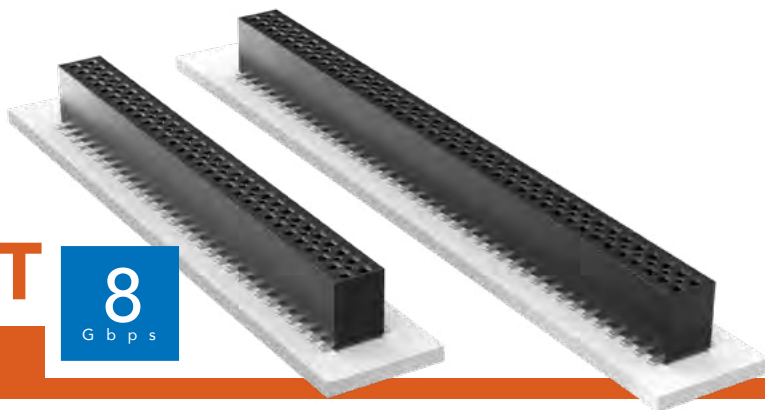
-P OPTION

If odd pins/row, alignment pins are on
middle position on centerline of the part.
If even pins/row, then alignment pins are
between middle two positions.

Note:
Some lengths, styles and
options are non-standard,
non-returnable.

COST-EFFECTIVE RELIABLE SOCKET

(1.27 mm) .050" PITCH • FLE SERIES



FLE

Board Mates:
FTSH, FTS, FW

Cable Mates:
FFMD*, FMTP

***Note:**
Standard FFMD callout will not mate with FLE, SFMC. Must use gold plated callouts. (See drawing on web.)

SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Contact Material:
Phosphor Bronze
Plating:
Au over 50 μ " (1.27 μ m) Ni
Current Rating:
2.9 A per pin
(2 pins powered)
Operating Temp Range:
-55 °C to +125 °C
Insertion Depth:
(1.83 mm) .072" to (4.37 mm)
.172" or pass-through
Normal Force:
100 grams (0.98 N)
Max Cycles:
100+

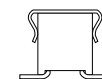
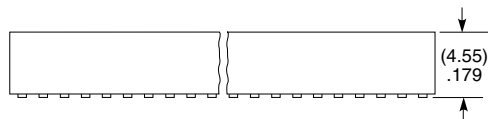
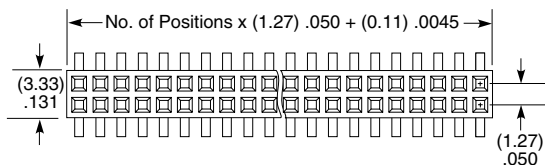
PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max

ALSO AVAILABLE

Other Plating
(MOQ Required)

FLE	- 1	NO. PINS PER ROW	- 01	PLATING OPTION	- DV	OPTION
		02 thru 50		-G = 10 μ " (0.25 μ m) Gold		-A = Alignment Pin (Metal or plastic at Samtec discretion) (3 positions minimum)
						-K = (4.25 mm) .167" DIA Polyimide film Pick & Place Pad (5 positions minimum)
						-P = Metal Pick & Place Pad (5 positions minimum)
						-TR = Tape & Reel
						-FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks)



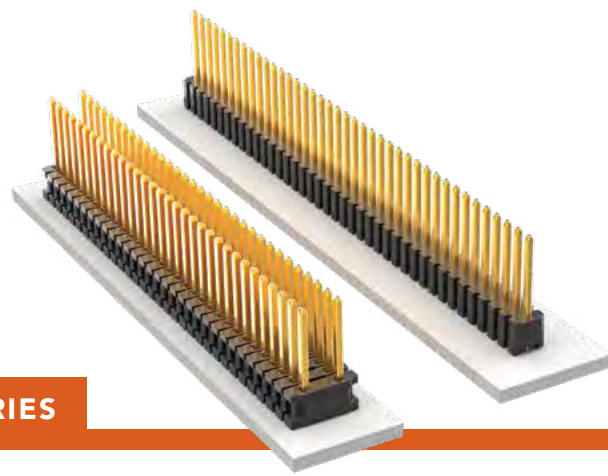
-P OPTION



Note:
Some lengths, styles and options are non-standard, non-returnable.

THROUGH-HOLE MICRO HEADER

(1.27 mm) .050" PITCH • TMS/HTMS SERIES



TMS/HTMS

Mates:

SMS, SLM, RSM

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Terminal Material:

Phosphor Bronze

Plating:

Au or Sn over

50 μ " (1.27 μ m) Ni

Current Rating (TMS/SMS):

5 A per pin

(2 pins powered)

Operating Temp Range:

-55 °C to +105 °C with Tin;

-55 °C to +125 °C with Gold

PROCESSING

Lead-Free Solderable:

Yes

SERIES	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OPTION
--------	---	------------------	------------	----------------	------------	--------

TMS
= Standard

HTMS
= High Temp

01 thru 50

Specify
LEAD
STYLE
from
chart

-L
= 10 μ "
(0.25 μ m)
Gold on post,
Matte Tin
on tail

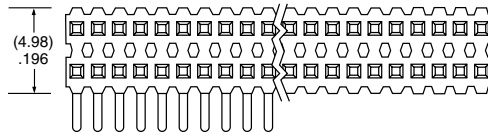
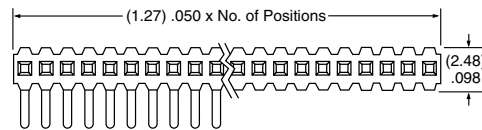
-G
= 10 μ "
(0.25 μ m)
Gold on post,
Gold flash
on tail

-S
= Single
Row

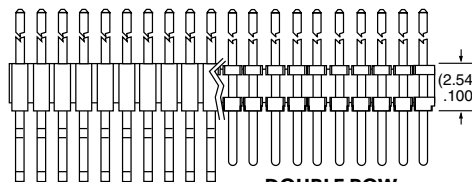
-D
= Double
Row

-RA
= Right-
angle

-"XXX"
= Polarized
Position
(Specify position
of omitted pin)

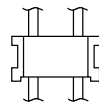
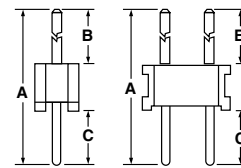


T/H LEAD STYLE	A	B	C
-01	(11.43) .450	(5.84) .230	(3.05) .120
-02	(8.13) .320	(2.54) .100	
-21	(12.83) .505	(5.84) .230	(4.45) .175
-51	(10.41) .410	(4.83) .190	
-52	(10.80) .425	(5.21) .205	
-53	(12.83) .505	(7.24) .285	
-54	(14.10) .555	(8.51) .335	
-55	(15.49) .610	(9.91) .390	(3.05) .120
-56	(15.88) .625	(10.29) .405	
-57	(16.51) .650	(10.92) .430	
-58	(17.91) .705	(12.32) .485	
-59	(19.18) .755	(13.59) .535	
-60	(20.96) .825	(15.37) .605	



SINGLE ROW

DOUBLE ROW



HTMS
-D
BODY
DESIGN

ALSO AVAILABLE

Other Plating
(MOQ Required)

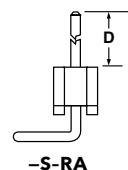
Important Note:

Style -02 does not mate
with SMS Series.

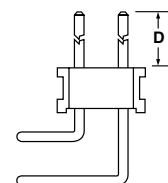
Note:

Some lengths, styles and
options are non-standard,
non-returnable.

RA LEAD STYLE	D
-01	(5.84) .230
-02	(2.54) .100
-03	(3.18) .125



-S-RA



-D-RA

FLEX STACK

SHROUDED HEADERS & STACKERS

(1.27 mm) .050" PITCH • TML/ZML SERIES



TML/ZML

Mates:

SMS, RSM

SPECIFICATIONS

TML

Insulator Material:
Black Liquid Crystal Polymer

Insulation Resistance:
5000 MΩ min

Terminal Material:
Phosphor Bronze

Plating:
Au or Sn over
50 μ" (1.27 μm) Ni

Operating Temp Range:
-55 °C to +105 °C with Tin;
-55 °C to +125 °C with Gold

ZML

Insulator Material:
Black Liquid Crystal Polymer

Terminal Material:
Phosphor Bronze

Plating:
Au or Sn over
50 μ" (1.27 μm) Ni

Operating Temp Range:
-55 °C to +105 °C with Tin;
-55 °C to +125 °C with Gold

PROCESSING

TML

Lead-Free Solderable:
Yes

SMT Lead Coplanarity:
(0.10 mm) .004" max (05-20)
(0.15 mm) .006" max (32)*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)

ZML

Same as TML except:

SMT Lead Coplanarity:
(0.15 mm) .006" max*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)

ALSO AVAILABLE

MOQ Required

Other sizes

Other platings

Notes:

For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors. Contact ipg@samtec.com for more information.

Some sizes, styles and options are non-standard, non-returnable.

TML	-	1	NO. PINS PER ROW	-	LEAD STYLE	-	PLATING OPTION	-	D	-	TAIL OPTION	-	OTHER OPTION
-----	---	---	------------------	---	------------	---	----------------	---	---	---	-------------	---	--------------

05, 08,
10, 20, 32
(Standard sizes)

Specify
LEAD
STYLE
from
chart

-L
= 10 μ"
(0.25 μm)
Gold on post,
Matte Tin
on tail

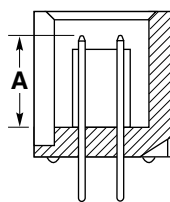
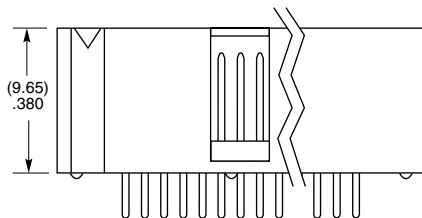
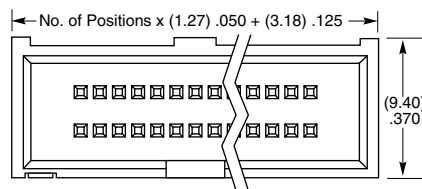
-G
= 10 μ"
(0.25 μm)
Gold on post,
Gold flash
on tail

(Leave blank for
Through-hole)

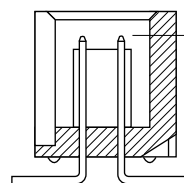
-RA
= Right-angle

-SM
= Surface Mount
(For locking clip
add -LC)

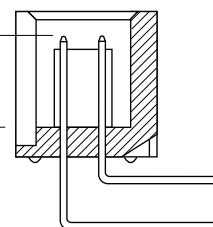
-“XXX”
= Polarized
position
(Specify position
of omitted pin)



THROUGH-HOLE



SURFACE MOUNT



RIGHT-ANGLE

LEAD STYLE	POST HEIGHT (A)
-01	(3.05) .120
-02	(5.84) .230
-03	(4.32) .170

ZML	-	1	NO. PINS PER ROW	-	LEAD STYLE	-	PLATING OPTION	-	D	-	BODY HEIGHT	-	TAIL OPTION
-----	---	---	------------------	---	------------	---	----------------	---	---	---	-------------	---	-------------

05, 08,
10, 20, 32
(Standard sizes)

Specify
LEAD
STYLE
from
chart

-L
= 10 μ"
(0.25 μm)
Gold on post,
Matte Tin
on tail

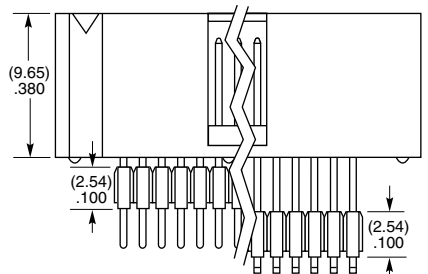
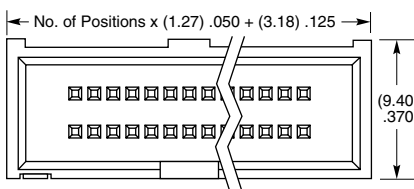
-G
= 10 μ"
(0.25 μm)
Gold on post,
Gold flash
on tail

(Leave blank for
Through-hole)

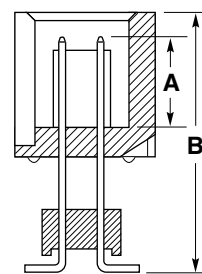
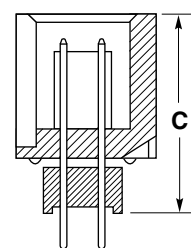
-“XXX”
= -SM Body Height
(Specify board space
“B” in inches from
lead style charts.)

(Leave blank for
Through-hole)

-SM
= Surface
Mount



THROUGH-HOLE



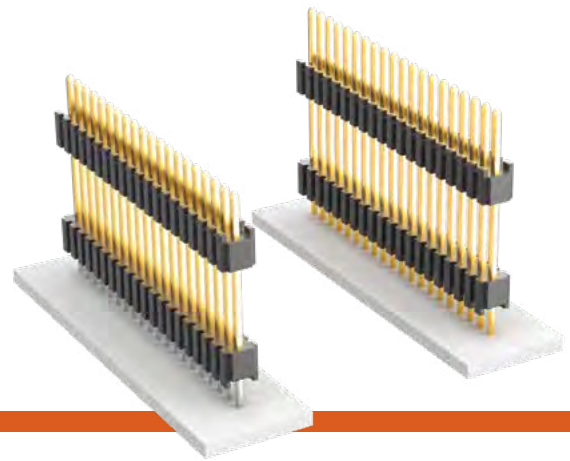
SURFACE MOUNT

THROUGH-HOLE	
LEAD STYLE	BODY HEIGHT (C)
-01	(12.83) .505
-02	(14.22) .560
-03	(16.64) .655
-04	(19.69) .775

SURFACE MOUNT		
LEAD STYLE	POST HEIGHT (A)	BODY HEIGHT (B)
-53	(3.05) .120	(13.46) .530 to (20.19) .795
-54	(5.84) .230	(13.46) .530 to (17.40) .685

MICRO BOARD STACKER

(1.27 mm) .050" PITCH • DWM/HDWM SERIES



DWM/HDWM

Mates:

SMS, SLM, RSM

SPECIFICATIONS

Insulator Material:

Liquid Crystal Polymer

Terminal Material:

Phosphor Bronze

Plating:

Au or Sn over 50 μ " (1.27 μ m) Ni

Operating Temp Range:

-55 °C to +105 °C with Tin

-55 °C to +125 °C with Gold

PROCESSING

Lead-Free Solderable:

Yes

SMT Lead Coplanarity:

(0.15 mm) .006" max*

*(.004" stencil solution may be available; contact

IPG@samtec.com)

ALSO AVAILABLE

Other Platings
(MOQ Required)

DWM	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	STACKER HEIGHT	OTHER OPTION																												
	01 thru 50	Specify LEAD STYLE from chart	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail -G = 10 μ" (0.25 μm) Gold on contact, Gold flash on tail	-S = Single Row -D = Double Row	- "XXX" = Stacker Height Example: -200 = (5.08 mm) .200"	- "XXX" = Polarized Position (Specify position of omitted pin)																												
<table><tr><th colspan="2">OAL</th></tr><tr><th>LEAD STYLE</th><th>THROUGH-HOLE</th></tr><tr><td>-01</td><td>(11.43) .450</td></tr><tr><td>-51</td><td>(10.41) .410</td></tr><tr><td>-52</td><td>(10.80) .425</td></tr><tr><td>-53</td><td>(12.83) .505</td></tr><tr><td>-54</td><td>(14.10) .555</td></tr><tr><td>-55</td><td>(15.49) .610</td></tr><tr><td>-56</td><td>(15.88) .625</td></tr><tr><td>-57</td><td>(16.51) .650</td></tr><tr><td>-58</td><td>(17.91) .705</td></tr><tr><td>-59</td><td>(19.18) .755</td></tr><tr><td>-60</td><td>(20.96) .825</td></tr><tr><td>-61</td><td>(26.67) 1.050</td></tr></table>							OAL		LEAD STYLE	THROUGH-HOLE	-01	(11.43) .450	-51	(10.41) .410	-52	(10.80) .425	-53	(12.83) .505	-54	(14.10) .555	-55	(15.49) .610	-56	(15.88) .625	-57	(16.51) .650	-58	(17.91) .705	-59	(19.18) .755	-60	(20.96) .825	-61	(26.67) 1.050
OAL																																		
LEAD STYLE	THROUGH-HOLE																																	
-01	(11.43) .450																																	
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-60	(20.96) .825																																	
-61	(26.67) 1.050																																	

HDWM	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	STACKER HEIGHT	OTHER OPTION
FACE MOUNT	01 thru 50	Specify LEAD STYLE from chart	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail	-S = Single Row	- "XXX" = Stacker Height Example: -250 = (6.35 mm) .250"	- "XXX" = Polarized Position (Specify position of omitted pin)
			-G = 10 μ" (0.25 μm) Gold on contact, Gold flash on tail	-D = Double Row		- SM = Surface Mount (02 thru 40 positions only)
- A = Alignment Pin (6 positions minimum -D only) Metal or plastic at Samtec discretion (Not available with -LC)						
- LC = Locking Clip (5 positions minimum -D only) (Not available with -A) (Manual placement required)						
- P = Pick & Place Pad						

Notes:

For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors. Contact ipg@samtec.com for more information.

This Series is non-standard, non-returnable.

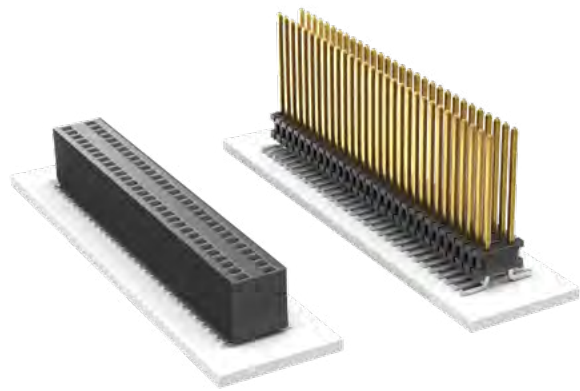
samtec.com?DWM or samtec.com?HDWM

F-221

Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec's specifications which are subject to change without notice.

SMT MICRO HEADER & SOCKET

(1.27 mm) .050" PITCH • FTR/RSM SERIES

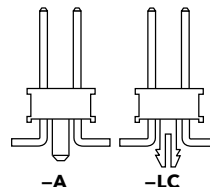
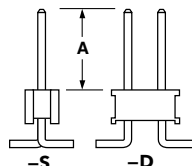
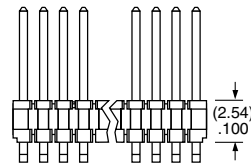
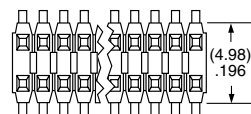
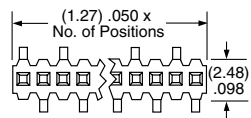


FTR
Mates:
RSM, SMS, SLM

RSM
Mates:
FTR, HTMS, HDWM,
DWM, TML, ZML, TMS

SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Contact Material:
RSM: Phosphor Bronze
Terminal Material:
FTR: Phosphor Bronze
Plating:
Au or Sn over
50 μ " (1.27 μ m) Ni
Current Rating (FTR/RSM):
3.1 A per pin
(2 pins powered)
Operating Temp Range:
FTR: -55 °C to +105 °C with Tin;
FTR: -55 °C to +125 °C with Gold
RSM: -55 °C to +125 °C
Lead Size Accepted:
RSM: (0.46 mm) .018" SQ
Insertion Depth:
RSM: Top Entry =
(2.64 mm) .104" to (5.84 mm) .230"
with (0.38 mm) .015" wipe, or
pass-through.
RSM: Bottom Entry =
(5.49 mm) .216" minimum
(Add board thickness for
correct post OAL)



FTR	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OPTION
-----	---	------------------	------------	----------------	------------	--------

02 thru 40

Specify
LEAD
STYLE
from
chart

-L
= 10 μ " (0.25 μ m)
Gold on post,
Matte Tin on tail

-G
= 10 μ " (0.25 μ m)
Gold on post,
Gold flash on tail

-S
= Single Row

-D
= Double Row

-XX
= Polarized

-A
= Alignment Pin
(5 positions min. for -D)
(Metal or plastic
at Samtec discretion)
(Not available with -LC)

-LC
= Locking Clip
(6 positions min. for -D)
(Not available with -A)
(Manual placement required)

-P
= Plastic Pick & Place Pad
(5 positions min. for -D)
(8 positions min. for -S)

-TR
= Tape & Reel
(4 positions min. for -S)

-FR
= Full Reel Tape & Reel
(must order max. quantity
per reel; contact Samtec
for quantity breaks)
(4 positions min. for -S)

LEAD STYLE	A
-01	(5.84) .230
-02	(2.54) .100
-03	(3.18) .125
-51	(4.83) .190
-52	(5.21) .205
-53	(7.24) .285
-54	(8.51) .335
-55	(9.91) .390
-56	(10.29) .405
-57	(10.92) .430

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
RSM: (0.10 mm) .004" max
FTR: (0.10 mm) .004" max (02-20)
FTR: (0.15 mm) .006" max (21-40)*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)

RSM	1	NO. PINS PER ROW	02	PLATING OPTION	ROW OPTION	OPTION
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02 thru 36

-L
= 10 μ " (0.25 μ m)
Gold on contact,
Matte Tin on tail

-S
= Single Row

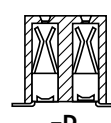
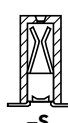
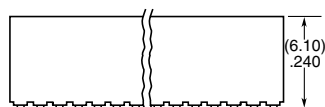
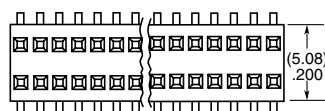
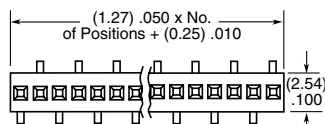
-D
= Double Row

-K
= (6.25 mm) .246" DIA
Polyimide film
Pick & Place Pad
(5 positions
minimum for -D)
(7 positions
minimum for -S)

-P
= Plastic Pick &
Place Pad
(5 positions
minimum for -D)
(6 positions
minimum for -S)

-TR
= Tape & Reel

-FR
= Full Reel Tape & Reel
(must order max.
quantity per reel;
contact Samtec
for quantity breaks)



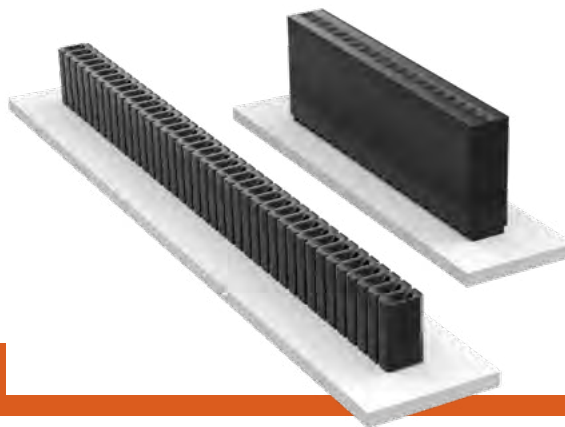
ALSO AVAILABLE
MOQ Required

Other platings
Locking clips

Note:
Some lengths, styles and
options are non-standard,
non-returnable.

THROUGH-HOLE MICRO SOCKETS

(1.27 mm) .050" PITCH • SLM/SMS SERIES



SLM

Mates:

HTMS, TMS, MTMS, DWM,
HDWM, FTR, HMTMS

SMS

Mates:

HTMS, TMS, MTMS,
DWM, HDWM, FTR, TML,
ZML, HMTM

SPECIFICATIONS

Insulator Material:

SLM: Black Glass Filled Polyester

SMS: Black LCP

Contact Material:

Phosphor Bronze

Plating:

Au or Sn over
50 μ " (1.27 μ m) Ni

Current Rating (SLM/TMS):

5.2 A per pin

(2 pins powered)

Current Rating (SMS/TMS):

5.0 A per pin

(2 pins powered)

Operating Temp Range:

-55 °C to +125 °C with Gold

-55 °C to +105 °C with Tin

Insertion Depth:

SLM: (2.03 mm) .080"

to (3.05 mm) .120"

SMS: (3.43 mm) .135" to

(6.35 mm) .250" with

(0.38 mm) .015" wipe

PROCESSING

Lead-Free Solderable:

SLM: No, Lead Wave Only

SMS: Yes

ALSO AVAILABLE

Other Platings
(MOQ Required)

Note:
Some lengths, styles and
options are non-standard,
non-returnable.

SLM	-	1	NO. PINS PER ROW	-	01	-	PLATING OPTION	-	ROW OPTION
-----	---	---	---------------------	---	----	---	-------------------	---	---------------

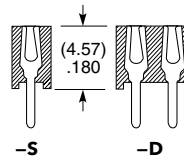
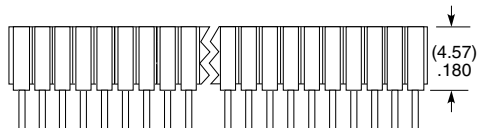
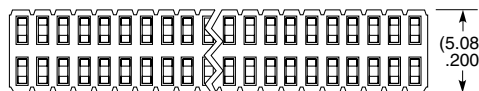
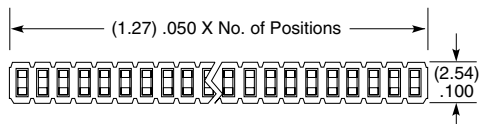
01 thru 50

-L
= 10 μ " (0.25 μ m) Gold on contact,
Matte Tin on tail

-S
= Single
Row

-G
= 20 μ " (0.51 μ m) Gold on contact,
Gold flash on balance

-D
= Double
Row



SMS	-	1	NO. PINS PER ROW	-	LEAD STYLE	-	PLATING OPTION	-	ROW OPTION
-----	---	---	---------------------	---	---------------	---	-------------------	---	---------------

01 thru 50

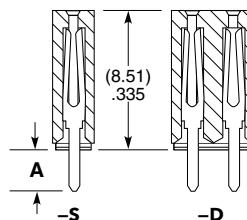
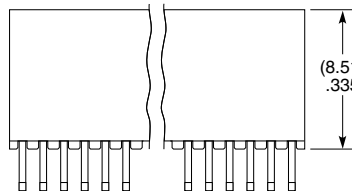
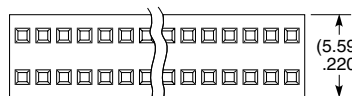
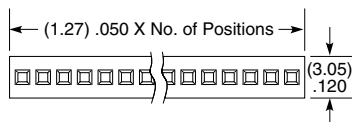
Specify
LEAD
STYLE
from
chart

-L
= 10 μ " (0.25 μ m) Gold on contact,
Matte Tin on tail

-S
= Single
Row

-G
= 20 μ " (0.51 μ m) Gold on contact,
Gold flash on balance

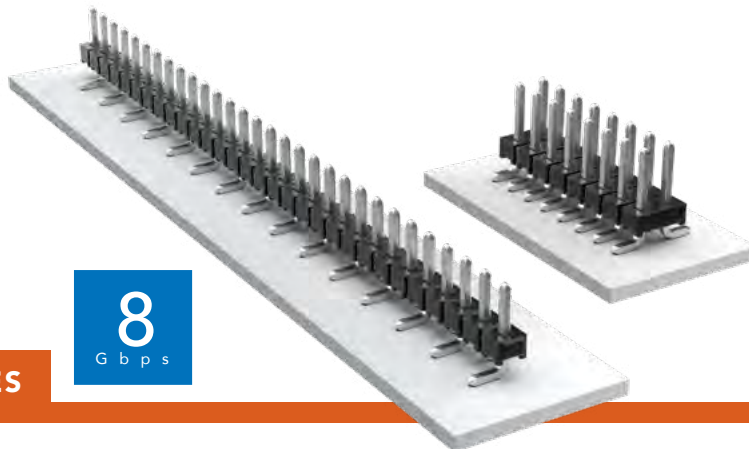
-D
= Double
Row



LEAD STYLE	A
-01	(2.54) .100
-02	(4.83) .190

LOW-PROFILE SMT HEADER

(2.00 mm) .0787" PITCH • TMM SERIES



TMM

Board Mates:

CLT, SQT, SQW, ESQT,
TLE, SMM, MMS

Cable Mates:

TCSD

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Terminal Material:

Phosphor Bronze

Plating:

Sn or Au over
50 μ " (1.27 μ m) Ni

Current Rating:

3.2 A per pin
(2 pins powered)

Operating Temp Range:

-55 °C to +105 °C with Tin;
-55 °C to +125 °C with Gold

Voltage Rating:

281 VAC mated with SQW;
250 VAC mated with SQT

PROCESSING

Lead-Free Solderable:

Yes

SMT Lead Coplanarity:

(0.15 mm) .006" max*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)

ALSO AVAILABLE

Other plating
(MOQ Required)



TMM	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	SM	OTHER OPTION
-----	---	------------------	------------	----------------	------------	----	--------------

02 thru 40

Specify
LEAD
STYLE
from
chart

-F
= Gold flash
on post,
Matte Tin on tail

-L
= 10 μ " (0.25 μ m)
Gold on post,
Matte Tin on tail

-S
= 30 μ " (0.76 μ m)
Gold on post,
Matte Tin on tail

-T
= Matte Tin

-S
= Single
Row

-D
= Double
Row

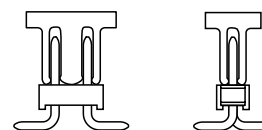
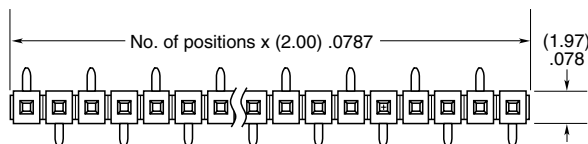
-A
= Alignment Pin
(Metal or plastic
at Samtec's
discretion)
(5 positions
minimum)
(-D only)

-"XXX"
= Polarized
Position
(Specify
position of
omitted pin)

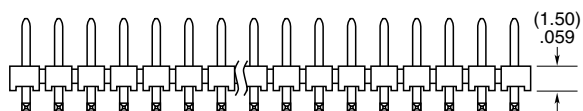
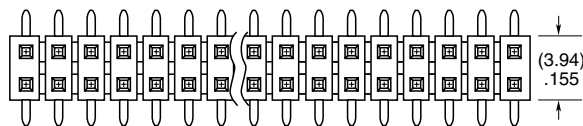
-P
= Pick &
Place Pad
(3 positions
minimum)

-TR
= Tape & Reel
(3 thru 36
positions only)

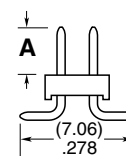
-FR
= Full Reel
Tape & Reel
(must order max.
quantity per reel;
contact
Samtec for
quantity breaks)
(3 thru 36
positions only)



-P



LEAD STYLE	A	MATES WITH
-01	(3.20) .126	SQT, SQW, ESQT, TLE, SMM, MMS, TCSD
-04	(1.91) .075	CLT
-05	(1.65) .065	
-06	(4.27) .168	CLT-BE



-D

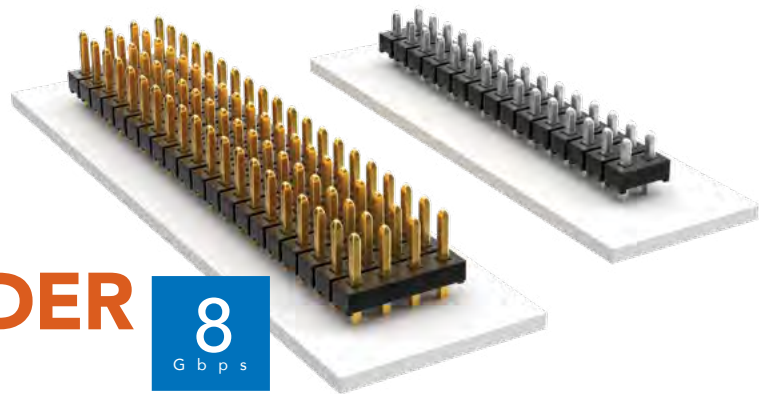


-S

Note:
Some lengths, styles and
options are non-standard,
non-returnable.

THROUGH-HOLE LOW-PROFILE HEADER

(2.00 mm) .0787" PITCH • TMM SERIES



TMM

Board Mates:

CLT, SQT, SQW, ESQT,
TLE, SMM, MMS

Cable Mates:

TCSD

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Terminal Material:

Phosphor Bronze

Plating:

Sn or Au over

50 μ " (1.27 μ m) Ni

Current Rating (SMM/TMM):

3.2 A per row

(2 pins powered)

Operating Temp Range:

-55 °C to +105 °C with Tin;

-55 °C to +125 °C with Gold

Voltage Rating:

281 VAC mated with SQW;

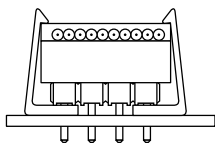
250 VAC mated with SQT

PROCESSING

Lead-Free Solderable:

Yes

APPLICATION



Retention Clip Option (-RC)

ALSO AVAILABLE

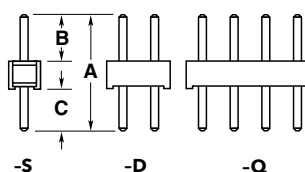
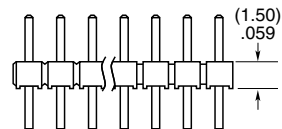
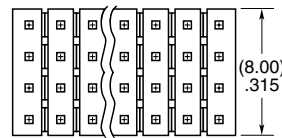
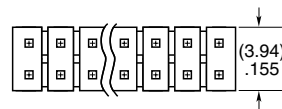
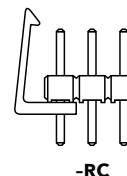
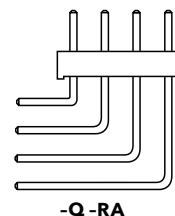
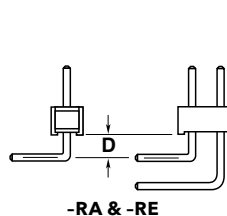
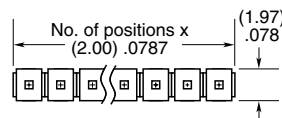
Other plating
(MOQ Required)



Note:

Some lengths, styles and
options are non-standard,
non-returnable.

TMM	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OTHER OPTION
		02 thru 50	Specify LEAD STYLE from chart	-F = Gold flash on post, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on post, Matte Tin on tail -S = 30 μ " (0.76 μ m) Gold on post, Matte Tin on tail -T = Matte Tin	-S = Single Row -D = Double Row -Q = Four Row	-RA & -RE = Right-angle (Lead Style -01 only) (2 positions minimum, -Q row) -RC = Retention Clip (Mates with TCSD) (Double row only, 4 positions minimum, only available -06 lead style) -XXX" = Polarized Position (Specify position of omitted pin)

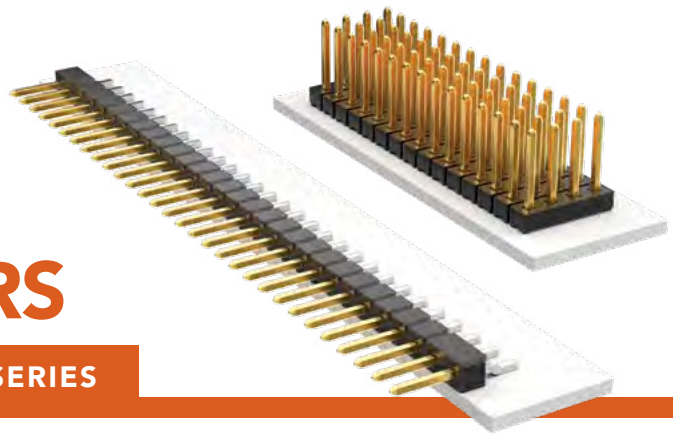


OPTION	D
-RA	(1.27) .050
-RE	(3.56) .140

LEAD STYLE	A	B	C
-01		(3.20) .126	(3.50) .138
-02	(8.20) .323	(3.70) .146	(3.00) .118
-03		(4.00) .158	(2.70) .106
-04	(5.69) .224	(1.91) .075	
-05	(5.43) .214	(1.65) .065	(2.29) .090
-06	(9.58) .377	(3.20) .126	(4.88) .192

HORIZONTAL & MODIFIED HEADERS

(2.00 mm) .0787" PITCH • MMT/MTMM SERIES



MMT/MTMM

Board Mates:

CLT, SQT, SQW, ESQT,
TLE, SMM, MMS

Cable Mates:

TCSD

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Terminal Material:

Phosphor Bronze

Plating:

Au or Sn over

50 μ" (1.27 μm) Ni

Operating Temp Range:

-55 °C to +105 °C with Tin;

-55 °C to +125 °C with Gold

PROCESSING

Lead-Free Solderable:

Yes

SMT Lead Coplanarity (MMT):

(0.10 mm) .004" max (02-25)

(0.15 mm) .006" max (26-36)*

*(.004" stencil solution
may be available; contact
IPG@samtec.com)

MMT	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OPTION
02 thru 36			-01 = (3.20 mm) .126" post	-F = Gold flash on post, Matte Tin on tail	-SH = Single Row	-K = (4.00 mm) .157" DIA Polyimide Film Pick & Place Pad (3 positions min.)
			-02 = (4.45 mm) .175" post	-L = 10 μ" (0.25 μm) Gold post, Matte Tin on tail	-DH = Double Row	-P = Pick & Place Pad (2 positions min.)
				-T = Matte Tin	-MT = Double Row Mixed Technology	-“XXX” = Polarized Position Specify position of omitted pin
						-TR = Tape & Reel
						-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

-SH

-DH

-MT

-DH

-MT

-SH

ALSO AVAILABLE
 MOQ Required
 Alignment pins
 Locking clips
 Molded pick &
 place pads
 Other platings

MTMM	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	POST HEIGHT	OPTION
01 thru 50			Specify LEAD STYLE from chart	-F = Gold flash on post, Matte Tin on tail	-S = Single Row	-“XXX” = Post Height in inches (0.13 mm) .005" increments	-“XXX” = Polarized Position Specify position of omitted pin
				-L = 10 μ" (0.25 μm) Gold post, Matte Tin on tail	-D = Double Row	Example: -070 = (1.78 mm) .070"	
				-T = Matte Tin	-Q = Quad Row		

-S

-D

-Q

ALSO AVAILABLE
 Other Platings
 (MOQ Required)

Note:

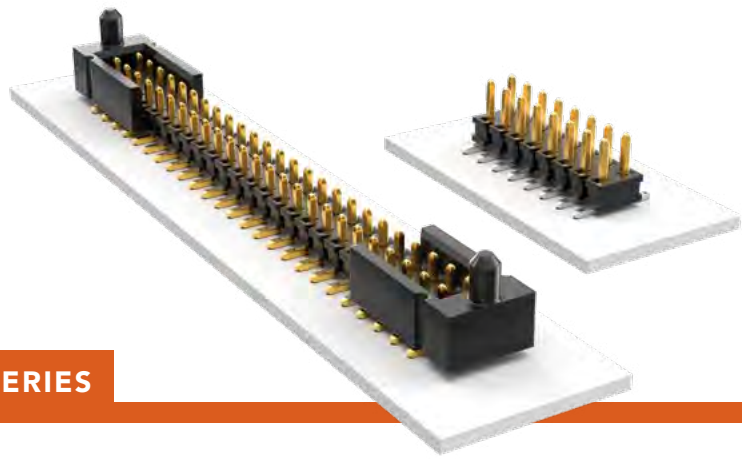
Some lengths, styles and
options are non-standard,
non-returnable.

samtec.com?MMT or samtec.com?MTMM

F-221

FLEXIBLE SMT HEADER

(2.00 mm) .0787" PITCH • TMMH SERIES



TMMH

Board Mates:

CLT, SQT, SQW, ESQT, TLE, SMM, MMS

Cable Mates:

TCSD

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Terminal Material:

Phosphor Bronze

Plating:

Sn or Au over 50 μ " (1.27 μ m) Ni

Current Rating (TMMH/ESQT):

4.5 A per pin

(2 pins powered)

Current Rating (TMMH/SQT):

5.1 A per pin

(2 pins powered)

Operating Temp Range:

-55 °C to +105 °C with Tin;

-55 °C to +125 °C with Gold

Voltage Rating:

281 VAC mated with SQW;

250 VAC mated with SQT

PROCESSING

Lead-Free Solderable:

Yes

SMT Lead Coplanarity:

(0.10 mm) .004" max

TMMH	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	DV	FLEX SHROUD OPTIONS	OTHER OPTIONS
------	---	------------------	------------	----------------	----	---------------------	---------------

03
thru
50

Specify
LEAD
STYLE
from
chart

-F
= Gold flash
on post,
Matte Tin
on tail

-L
= 10 μ "
(0.25 μ m)
Gold on
post,
Matte Tin
on tail

-T
= Matte Tin

All Flex Shroud options
require 9 pins/row minimum
(For board-to-board
interfaces. Will not
mate with TCSD)

-ES
= End Shroud
(For best cost also
see TSH Series)

-EC
= End Shroud
with Locking Clip
(For best cost also
see TSH Series)
(Manual placement
required)

-EP
= End Shroud
with Guide Post

-EL
= End Shroud
with Board Lock
(Boards are positively
locked and cannot be
unmated)

-EBC
= End Shroud
with Board Lock
and Locking Clip
(Boards are positively
locked and cannot
be unmated)

-EPC
= End Shroud
with Guide Post
and Locking Clip
(Manual placement
required)

-"XXX"
= Polarized Position.
Specify position of
omitted pin

-A
= Alignment Pin
(3 positions minimum)
(Not available with -LC)

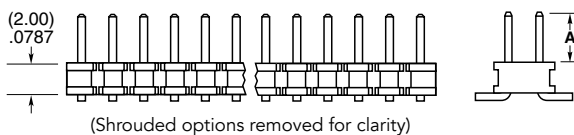
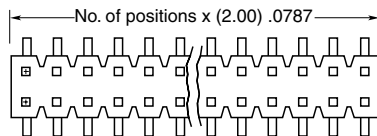
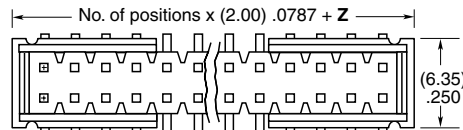
-LC
= Locking Clip
(5 positions minimum)
(Not available with -A)
(Manual placement
required)

-M
= Pick & Place Pad
(5 positions minimum)

-TR
= Tape & Reel Packaging
(36 positions maximum)
(Flex Shroud options
not available except
-ES, -EP & -EL)

-FR
= Full Reel
Tape & Reel
(must order max.
quantity per reel;
contact Samtec for
quantity breaks)
(36 positions maximum)
(Flex Shroud options
not available except
-ES, -EP & -EL)

OPTION	Z
-ES	(2.92) .115
-EC	(4.70) .185
-EP & -EPC	(6.10) .240
-EL & -EBC	(4.45) .175

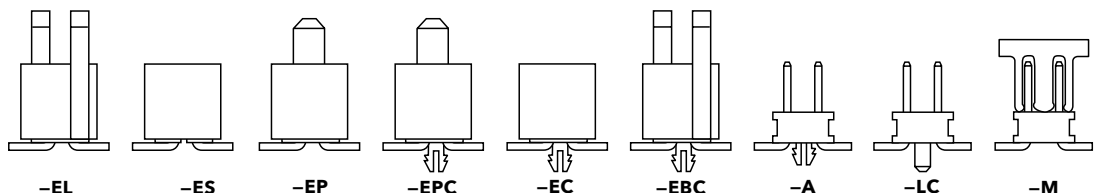


(Shrouded options removed for clarity)

LEAD STYLE	A	MATES WITH
-01	(3.20) .126	SQT, SQW, ESQT, TLE, SMM, MMS, TCSD
-04	(1.91) .075	CLT
-05	(1.65) .065	

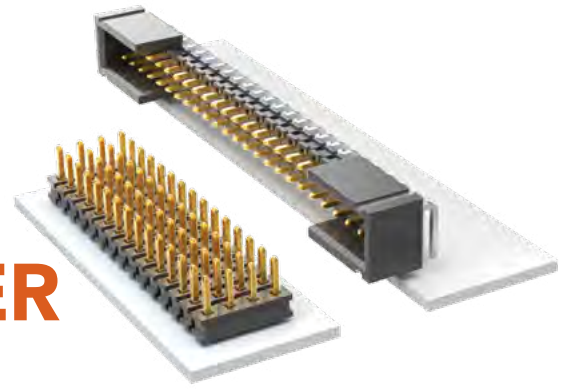
ALSO AVAILABLE

Other Platings
(MOQ Required)



Note:
Some lengths, styles and
options are non-standard,
non-returnable.

FLEXIBLE THROUGH-HOLE HEADER



(2.00 mm) .0787" PITCH • TMMH SERIES

TMMH

Board Mates:

CLT, SQT, SQW, ESQT,
TLE, SMM, MMS

Cable Mates:

TCSD

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Terminal Material:

Phosphor Bronze

Plating:

Sn or Au over 50 μ " (1.27 μ m) Ni

Current Rating (TMMH/ESQT):

4.5 A per pin

(2 pins powered)

Current Rating (TMMH/SQT):

5.1 A per pin

(2 pins powered)

Operating Temp Range:

-55 °C to +105 °C with Tin;

-55 °C to +125 °C with Gold

Voltage Rating:

281 VAC mated with SQW;

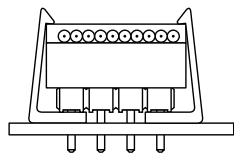
250 VAC mated with SQT

PROCESSING

Lead-Free Solderable:

Yes

APPLICATION



Retention Clip Option (-RC)

ALSO AVAILABLE

Other Platings
(MOQ Required)



Note:

Some lengths, styles and options are non-standard, non-returnable.

TMMH	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	TAIL OPTION	FLEX SHROUD OPTIONS	OTHER OPTIONS
------	---	------------------	------------	----------------	------------	-------------	---------------------	---------------

03
thru
50

Specify
LEAD
STYLE
from
chart

-F
= Gold flash
on post,
Matte Tin
on tail

-D
= Double
Row
(Required
for Flex
Shroud
option)

-RA
= Right-
angle
(Double
& Triple
Row only)
(-ES, -EP,
-EL Double
Row only)
(-EC, -EBC
and -EPC
not available)
(-06 Lead
style not
available)

Flex Shroud
requires -D row
& 9 pins/row
minimum
(For board-to-
board interfaces.
Will not mate
with TCSD)

-"XXX"
= Polarized
Position
(Specify
position of
omitted pin)

-RC
= Retention
Clip
(Mates to
TCSD)
(Double row
only, minimum
position 4 and
available only
-06 lead style)

-ES
= End Shroud

-EC
= End Shroud
with Locking Clip
(Manual
placement
required)

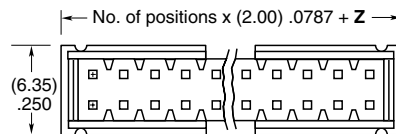
-EP
= End Shroud
with Guide Post

-EL
= End Shroud
with Board Lock
(Boards are
positively locked
and cannot be
unmated)

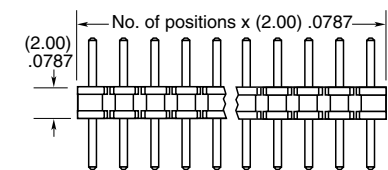
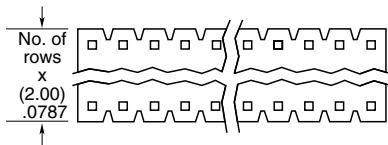
-EBC
= End Shroud
with Board Lock
and Locking Clip
(Boards are
positively locked
and cannot be
unmated)

-EPC
= End Shroud
with Guide Post
and Locking Clip
(Manual
placement
required)

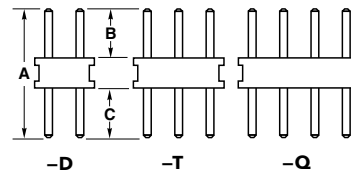
OPTION	Z
-ES	(2.92) .115
-EC	(4.70) .185
-EP & -EPC	(6.10) .240
-EL & -EBC	(4.45) .175



(Shrouded option requires -D)



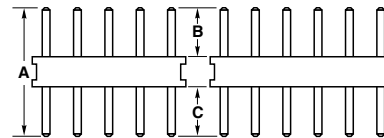
(Shrouded options removed for clarity)



-D

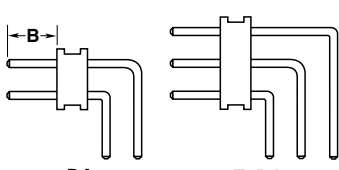
-T

-Q



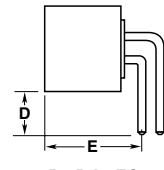
-5

-6

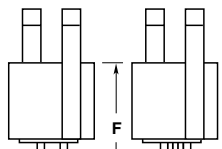


-RA

-T-RA
(Lead style -01 only)

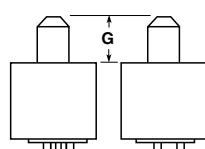


-D-RA-ES
(-RA also available with
other flex shroud options)



-D-EL

-D-EBC



-D-EPC

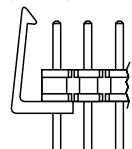
-D-EP



-D-ES



-D-EC



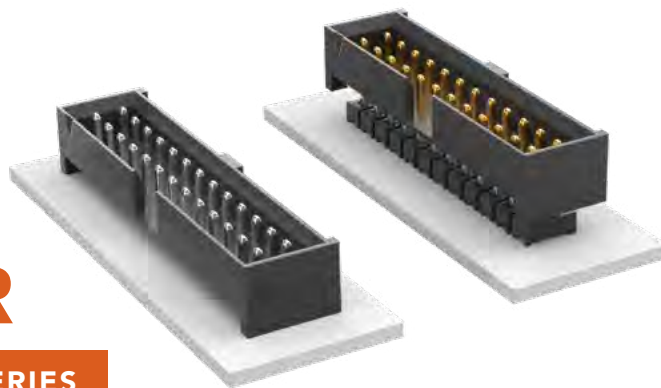
-RC

LEAD STYLE	A	B	C	D	E	F	G
-01	(7.67) .302	(3.20) .126	(2.46) .097	(2.34) .092	(6.60) .260	(5.84) .230	(4.45) .175
-04	(6.45) .254	(1.91) .075	(2.57) .101	(2.62) .103	(5.26) .207	(4.50) .177	(3.02) .119
-05	(6.45) .254	(1.65) .065	(2.29) .090	(3.12) .123	(5.26) .207		
-06	(8.74) .344	(3.20) .126	(3.53) .139	N/A	N/A	N/A	N/A

FLEX STACK

SHROUDED HEADER & STACKER

(2.00 mm) .0787" PITCH • LTMM/ZLTM SERIES



LTMM/ZLTM

Mates:

SQT, SQW, ESQT, SMM

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Terminal Material:

Phosphor Bronze

Plating:

Sn or Au over

50 μ " (1.27 μ m) Ni

Operating Temp Range:

-55 °C to +105 °C with Tin;

-55 °C to +125 °C with Gold

PROCESSING

Lead-Free Solderable:

Yes

SMT Lead Coplanarity:

(0.10 mm) .004" max

LTMM	1	NO. PINS PER ROW	02	PLATING OPTION	D	TAIL OPTION	OTHER OPTION
		04, 05, 06, 07, 08, 10, 12, 13, 15, 17, 20, 22, 25 (Standard sizes)		-F = Gold flash on post, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on post, Matte Tin on tail -T = Matte Tin		Leave blank for Through-hole -RA = Right-angle -SM = Surface Mount	- "XX" = Polarized Position -LC = Locking Clip (-SM only) (Manual placement required) -K = (7.50 mm) .295" DIA Film Pick & Place Pad (-SM only) -TR = Tape & Reel (-SM only) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (-SM only)

ZLTM	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	D	BODY HEIGHT	OTHER OPTION
		04, 05, 06, 07, 08, 10, 12, 13, 15, 17, 20, 22, 25 (Standard sizes)	Specify LEAD STYLE from chart	-F = Gold flash on post, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on post, Matte Tin on tail -T = Matte Tin		- "XXX" = Body Height	- "XX" = Polarized Position

LEAD STYLE	B (OAL)	MAX BODY HEIGHT
-75	(9.58) 0.377	(7.42) 0.292
-62	(10.08) 0.397	(7.92) 0.312
-65	(10.49) 0.413	(8.33) 0.328
-73	(12.09) 0.476	(9.93) 0.391
-63	(14.10) 0.555	(11.94) 0.470
-66	(15.09) 0.594	(12.93) 0.509
-69	(15.60) 0.614	(13.44) 0.529
-74	(17.09) 0.673	(14.94) 0.588
-70	(17.60) 0.693	(15.44) 0.608
-71	(21.08) 0.830	(18.92) 0.745
-72	(21.62) 0.851	(19.46) 0.766

Note:

This Series is non-standard, non-returnable.

Note:

For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors. Contact ipg@samtec.com for more information.

SHROUDED HEADERS

(2.00 mm) .0787" PITCH • TSH/TMMS SERIES



TSH

Mates:

CLT, SQT, SQW, ESQT,
TLE, SMM, MMS, PTF

TMMS

Mates:

SQT, SQW, ESQT

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Terminal Material:

Phosphor Bronze

Plating:

Sn or Au over
50 μ " (1.27 μ m) Ni

Operating Temp Range:

-55 °C to +105 °C with Tin;
-55 °C to +125 °C with Gold

PROCESSING

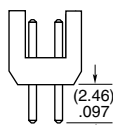
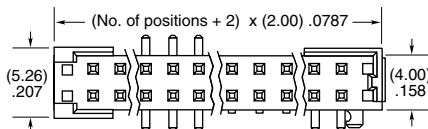
Lead-Free Solderable:

Yes

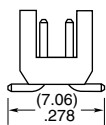
SMT Lead Coplanarity (TSH):

(0.15 mm) .006" max*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)

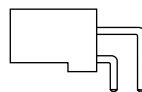
TSH	1	NO. PINS PER ROW	01	PLATING OPTION	ROW OPTION	OTHER OPTION
		05, 10, 15, 20, 25, 30, 35, 40, 45 (40 & 45 = -D & -RA only) (Standard sizes)		-F = Gold flash on post, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on post, Matte Tin on tail -T = Matte Tin	-D = Vertical Through-hole -DV = Vertical Surface Mount -RA = Right-angle Through-hole -DH = Horizontal Surface Mount	-LC = Locking Clip (-DV only) (Not available with -A) (Manual placement required) -A = Alignment Pin (-DV only) (Not available with -LC) -SL = Solder Locks (-DH only) -K = (4.50 mm) .177" DIA Polyimide Film Pick & Place Pad (-DH only) (Not available with 15 - 30 positions) -TR = Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)



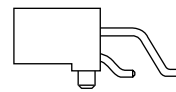
-D



-DV

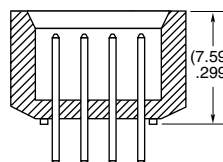
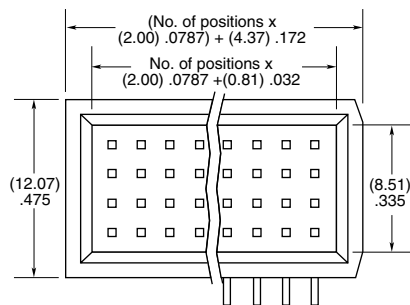


-RA

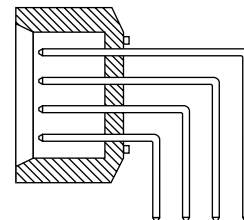


-DH

TMMS	1	NO. PINS PER ROW	01	PLATING OPTION	Q	OPTION	FS
		05, 10, 15, 20, 30, 40, 50		-F = Gold flash on post, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on post, Matte Tin on tail		-RA = Right-angle	



(7.59) .299



-RA

ALSO AVAILABLE

MOQ Required

Other sizes

Other plating

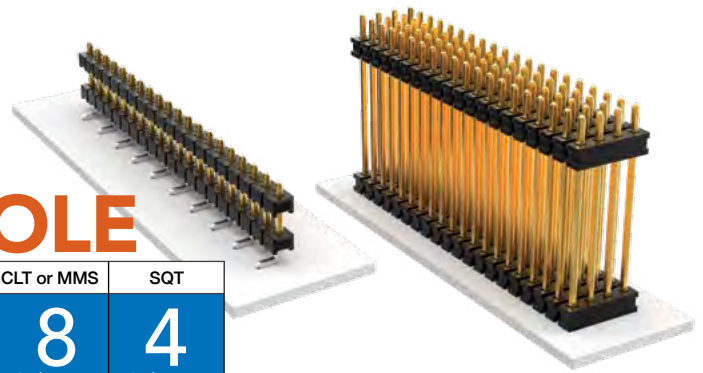
Note:

Some lengths, styles and options are non-standard, non-returnable.

SMT & THROUGH-HOLE BOARD STACKERS

(2.00 mm) .0787" PITCH • TW SERIES

CLT or MMS	SQT
8	4
G b p s	G b p s



TW

Board Mates:

CLT, SQT, SQW, ESQT,
TLE, SMM, MMS

Cable Mates:

TCSD

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer
Terminal Material:
Phosphor Bronze

Plating:

Sn or Au over
50 μ " (1.27 μ m) Ni

Current Rating:

TW-SM = 4.9 A per pin
(2 pins powered)
TW-TH = 5.2 A per pin
(2 pins powered)

Operating Temp Range:

-55 °C to +105 °C with Tin;
-55 °C to +125 °C with Gold

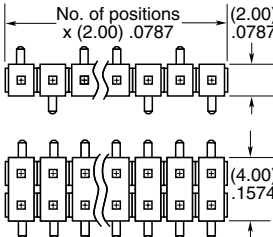
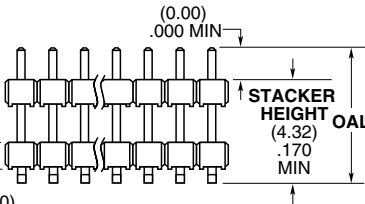
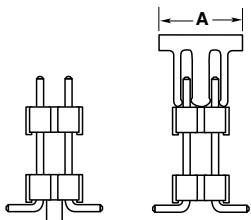
PROCESSING

Lead-Free Solderable:

Yes

SMT Lead Coplanarity:

(0.15 mm) .006" max*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)

TW	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	STACKER HEIGHT	SM	OTHER OPTION																				
	02 thru 36	Specify LEAD STYLE from chart	-F = Gold flash on post, Matte Tin on tail -L = 10 μ" (0.25 μm) Gold on post, Matte Tin on tail -T = Matte Tin	-S = Single Row -D = Double Row	- "XXX" = Stacker Height in inches (0.13 mm) .005" increments Example: -250 = (6.35 mm) .250"		- "XXX" = Polarized Position -A = Alignment Pin (Metal or plastic at Samtec discretion) (4.83 mm) .190" min. board space (-D only) -P = Pick & Place Pad (1.91 mm) .075" min. post height (04-36 only)																				
				<table border="1"><thead><tr><th>LEAD STYLE</th><th>A</th></tr></thead><tbody><tr><td>-02</td><td>(7.85) .309</td></tr><tr><td>-03</td><td>(11.86) .467</td></tr><tr><td>-04</td><td>(12.37) .487</td></tr><tr><td>-06</td><td>(15.37) .605</td></tr><tr><td>-07</td><td>(17.35) .683</td></tr><tr><td>-09</td><td>(9.86) .388</td></tr></tbody></table>		LEAD STYLE	A	-02	(7.85) .309	-03	(11.86) .467	-04	(12.37) .487	-06	(15.37) .605	-07	(17.35) .683	-09	(9.86) .388	<table border="1"><thead><tr><th>ROW OPTION</th><th>A</th></tr></thead><tbody><tr><td>-S</td><td>(5.08) .200</td></tr><tr><td>-D</td><td>(6.35) .250</td></tr></tbody></table>		ROW OPTION	A	-S	(5.08) .200	-D	(6.35) .250
LEAD STYLE	A																										
-02	(7.85) .309																										
-03	(11.86) .467																										
-04	(12.37) .487																										
-06	(15.37) .605																										
-07	(17.35) .683																										
-09	(9.86) .388																										
ROW OPTION	A																										
-S	(5.08) .200																										
-D	(6.35) .250																										
																											
				-A OPTION		-P OPTION																					

Specify "T" for Tape & Reel

Specify "F" for Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

(-07 lead style N/A)

(-06 lead style with -P option N/A as standard)

TW	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	STACKER HEIGHT	TAIL SPEC																										
	02 thru 50	Specify LEAD STYLE from chart	-F = Gold flash on post, Matte Tin on tail -L = 10 μ" (0.25 μm) Gold on post, Matte Tin on tail -T = Matte Tin	-S = Single Row -D = Double Row -T = Triple Row -Q = Four Row -5 = Five Row -6 = Six Row	- "XXX" = Stacker Height in inches (0.13 mm) .005" increments Example: -250 = (6.35 mm) .250" <table><thead><tr><th>LEAD STYLE</th><th>OAL</th></tr></thead><tbody><tr><td>-01</td><td>(8.20) .323</td></tr><tr><td>-02</td><td>(9.60) .377</td></tr><tr><td>-03</td><td>(13.60) .535</td></tr><tr><td>-04</td><td>(14.10) .555</td></tr><tr><td>-05</td><td>(15.10) .594</td></tr><tr><td>-06</td><td>(17.10) .673</td></tr><tr><td>-07</td><td>(19.10) .751</td></tr><tr><td>-08*</td><td>(21.10) .830</td></tr><tr><td>-09</td><td>(11.60) .456</td></tr><tr><td>-10</td><td>(15.60) .614</td></tr><tr><td>-11</td><td>(10.08) .397</td></tr><tr><td>-12*</td><td>(28.19) 1.110</td></tr></tbody></table>	LEAD STYLE	OAL	-01	(8.20) .323	-02	(9.60) .377	-03	(13.60) .535	-04	(14.10) .555	-05	(15.10) .594	-06	(17.10) .673	-07	(19.10) .751	-08*	(21.10) .830	-09	(11.60) .456	-10	(15.60) .614	-11	(10.08) .397	-12*	(28.19) 1.110	- "XXX" = Tail Length in inches (0.13 mm) .005" increments Example: -150 = (3.81 mm) .150" - "XXX" = Polarized Position (Specify position to be removed)
LEAD STYLE	OAL																															
-01	(8.20) .323																															
-02	(9.60) .377																															
-03	(13.60) .535																															
-04	(14.10) .555																															
-05	(15.10) .594																															
-06	(17.10) .673																															
-07	(19.10) .751																															
-08*	(21.10) .830																															
-09	(11.60) .456																															
-10	(15.60) .614																															
-11	(10.08) .397																															
-12*	(28.19) 1.110																															
-S, -D*, -Q -T, -5, -6		STACKER HEIGHT See Chart OAL <table><thead><tr><th>ROW OPTION</th><th>STACKER HEIGHT</th></tr></thead><tbody><tr><td>-S, -D*, -Q</td><td>(3.05) .120 MIN</td></tr><tr><td>-T, -5, -6</td><td>(4.06) .160 MIN</td></tr></tbody></table>		ROW OPTION	STACKER HEIGHT	-S, -D*, -Q	(3.05) .120 MIN	-T, -5, -6	(4.06) .160 MIN	*-D with stacker height greater than (4.06 mm) .160" will not have standoffs. *Style -08 & -12 = S & D only																						
ROW OPTION	STACKER HEIGHT																															
-S, -D*, -Q	(3.05) .120 MIN																															
-T, -5, -6	(4.06) .160 MIN																															

Notes:

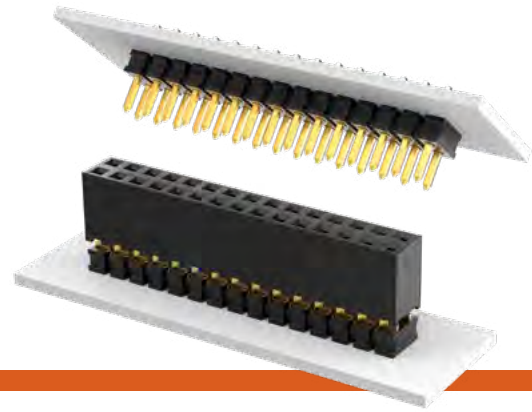
For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors. Contact ipg@samtec.com for more information.

This Series is non-standard, non-returnable.

samtec.com?TW-SM or samtec.com?TW-TH

PRESS-FIT HEADERS & SOCKETS

(2.00 mm) .0787" PITCH • PTT/PTF SERIES



PTT

Mates:

PTF, ESQT, PTHF,
SQW, SQT, SMM

PTF

Mates:

PTT, TMMH, TMM, MTMM,
MMT, TW, LTMM, ZLTMM

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Contact Material:

Phosphor Bronze

Plating:

Au or Sn over
50 μ " (1.27 μ m) Ni

Current Rating:

2.9 A per pin
(2 pins powered)

Operating Temp Range:

-55 °C to +125 °C

Insertion Depth:

(2.67 mm) .105" to
(3.56 mm) .140"

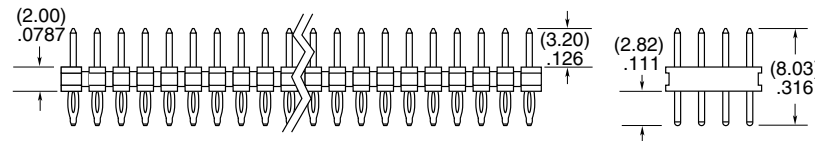
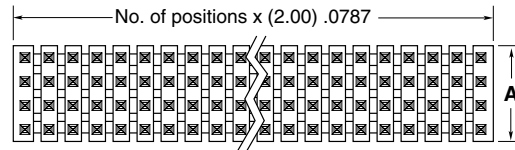
Normal Force:

60 grams (0.59 N) average

Max Cycles:

100 with 30 μ " (0.76 μ m) Au

PTT	-	1	NO. PINS PER ROW	-	01	PLATING OPTION	-	ROW OPTION	-	OPTION
02 thru 50						-L = 10 μ " (0.25 μ m) Gold contact, Matte Tin on tail		-S = Single Row -D = Double Row -T = Triple Row -Q = Four Row -5 = Five Row -6 = Six Row		- "XXX" = Polarized Position



ROW OPTION	A
-S	(2.00) .079
-D	(4.00) .158
-T	(6.00) .236
-Q	(8.00) .314
-5	(10.00) .393
-6	(12.00) .472

ALSO AVAILABLE

Other Platings
(MOQ Required)

PTF	-	1	NO. PINS PER ROW	-	LEAD STYLE	PLATING OPTION	-	D	-	OPTION
02 thru 50						-L = 10 μ " (0.25 μ m) Gold on post, Matte Tin on tail				- "XXX" = Polarized Position

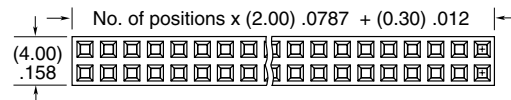
TOOLING

Press-Fit

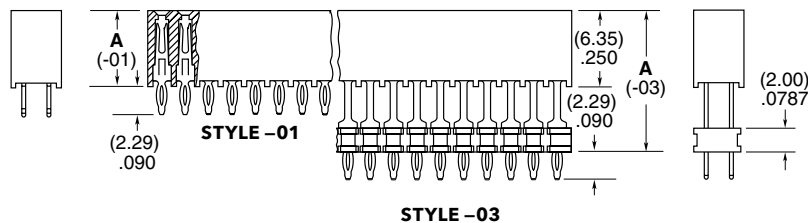
PHT: CAT-PT-PH-1XX-X-X

PHF: CAT-PT-PH-1XX-X-B

For more information,
visit www.samtec.com/tooling



LEAD STYLE	A
-01	(6.35) .250
-03	(9.14) .360

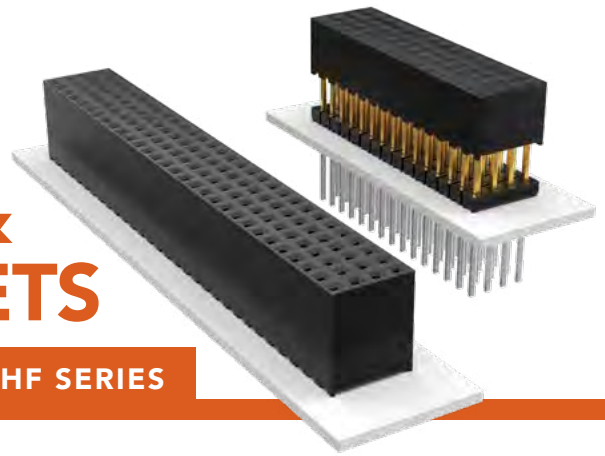


Note:

Some lengths, styles and
options are non-standard,
non-returnable.

FLEXIBLE ELEVATED & SELF-NESTING SOCKETS

(2.00 mm) .0787" PITCH • ESQT/ESQT (-368)/PTHF SERIES



ESQT

Board Mates:

TMMH, TMM, MTMM,
MMT, TW, LTMM, ZLTMM,
ESQT, PTT, TSH, TMMS

Cable Mates:

TCMD

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Contact Material:

Phosphor Bronze

Plating:

Sn or Au over

50 μ " (1.27 μ m) Ni

Current Rating (ESQT/TMMH):

4.5 A per pin

(2 pins powered)

Operating Temp Range:

-55 °C to +125 °C

Insertion Depth:

(2.62 mm) .103" to

(5.03 mm) .198" with

(0.38 mm) .015" wipe

Max Cycles:

100 with 10 μ " (0.25 μ m) Au

Lead-Free Solderable:

Yes, for -S, -D & -Q

(Wave only for -T, -5 & -6)

ESQT	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	BODY HEIGHT	OTHER OPTION												
		02 thru 50	Specify LEAD STYLE from chart	-F = Gold flash on contact, Matte Tin on tail -L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail -M = 20 μ" (0.51 μm) Gold on contact, Matte Tin on tail -GF = 15 μ" (0.38 μm) Gold on contact, Gold flash on tail (Recommended for self-nesting) (-02 lead style only)	-S = Single Row -D = Double Row -T = Triple Row -Q = Quad Row -5 = Five Row -6 = Six Row	- "XXX" = Body Height (in inches) (7.87 mm) .310" minimum for -S, -D, -Q (9.53 mm) .375" minimum for -T, -5, -6	- "XXX" = Polarized Position (Indicate position number)												
No. of positions x (2.00) .0787 + (0.30) .012 No. of rows x (2.00) .0787 (6.35) .250																			
(6.35) .250 (1.27) .050 MIN A																			
<table><tr><th>LEAD STYLE</th><th>A</th><th>MAX TAIL</th><th>MAX BODY HEIGHT</th></tr><tr><td>-02</td><td>(21.59) .850</td><td>(13.72) .540</td><td>(20.32) .800</td></tr><tr><td>-03</td><td>(11.63) .458</td><td>(3.76) .148</td><td>(10.36) .408</td></tr></table>				LEAD STYLE	A	MAX TAIL	MAX BODY HEIGHT	-02	(21.59) .850	(13.72) .540	(20.32) .800	-03	(11.63) .458	(3.76) .148	(10.36) .408	BODY HEIGHT TAIL (1.27) .050 MIN A			
LEAD STYLE	A	MAX TAIL	MAX BODY HEIGHT																
-02	(21.59) .850	(13.72) .540	(20.32) .800																
-03	(11.63) .458	(3.76) .148	(10.36) .408																

ESQT (-368)/PTHF

Mates:

ESQT, PTHF

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer (ESQT-368)

Black High Temp Nylon (PTHF)

Contact Material:

Phosphor Bronze

Plating:

Au or Sn over

50 μ " (1.27 μ m) Ni

Operating Temp Range:

-55 °C to +125 °C

Normal Force:

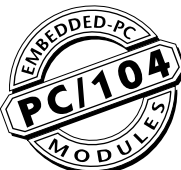
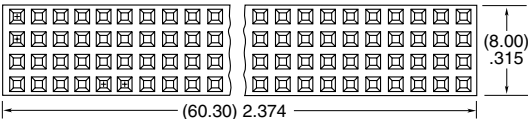
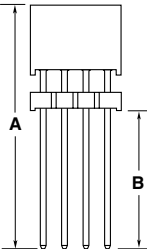
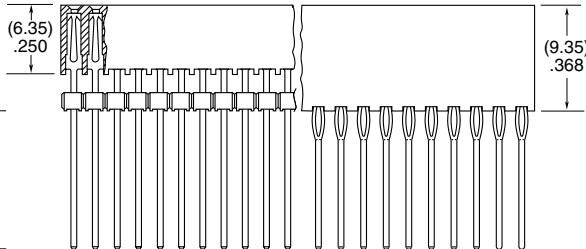
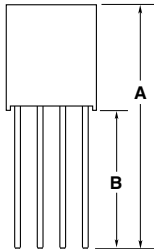
60 grams (0.59 N) average

Max Cycles:

100 with 10 μ " (0.25 μ m) Au

Lead-Free Solderable:

Yes (ESQT-368)

SERIES	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	Q	368
ESQT = Solder Tails		02 thru 50	Specify LEAD STYLE from chart	-GF = 15 μ" (0.38 μm) Gold on contact, Gold flash on tail (-02 Lead Style only)		
PTHF = Press-fit Tails				-M = 20 μ" (0.51 μm) Gold on contact, Matte Tin on tail (-03 Lead Style only)		
						
						
						
						
						
ESQT (-368) SERIES			PTHF SERIES			

TOOLING

Press-Fit
CAT-PT-130-A-4

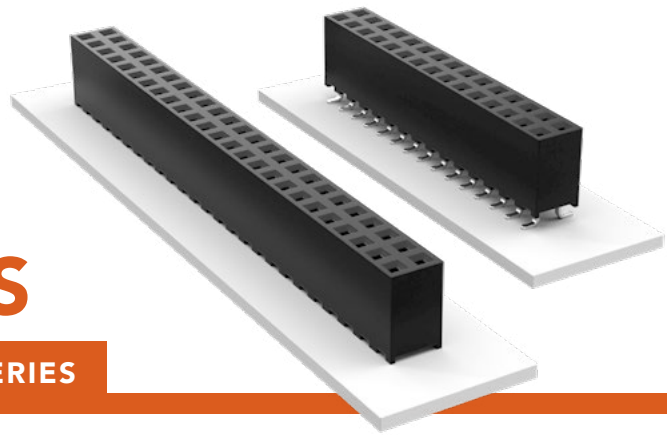
For more information, visit
www.samtec.com/tooling

Note:

This Series is non-standard, non-returnable.

COST-EFFECTIVE RUGGED SOCKETS

(2.00 mm) .0787" PITCH • SQW/SQT SERIES



SQW/SQT

Board Mates:

TMMH, TMMs, TMM,
MTMM, MMT, TW, TSH,
LTMM, ZLTMM, PTT

Cable Mates:

TCMD

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Contact Material:

Phosphor Bronze

Plating:

Sn or Au over
50 μ " (1.27 μ m) Ni

SQW Current Rating

(SQW/TMMH):
3.8 A per pin (2 pins powered)

SQT Current Rating

(TMMH/SQT):
5.1 A per pin (2 pins powered)

Voltage Rating:

281 VAC mated with TMM;
250 VAC mated with TMMH

Operating Temp Range:

-55 °C to +125 °C

SQW Insertion Depth:

(2.62 mm) .103" to
(5.03 mm) .198" with

(0.38 mm) .015" wipe

SQT Insertion Depth:

(2.62 mm) .103" to
(5.03 mm) .198"

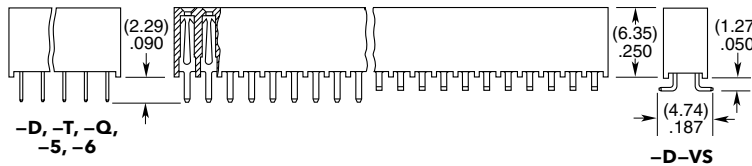
SQT Normal Force:

60 grams (0.59 N) average

Max Cycles:

100 with 10 μ " (0.25 μ m) Au

SQW	1	NO. PINS PER ROW	01	PLATING OPTION	ROW OPTION	OPTION
02 thru 50				-F = Gold flash on contact, Matte Tin on tail	-D = Double Row	-“XXX” = Polarized Position -D-VS only options:
				-L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail	-D-VS = Double Row Surface Mount	-A = Alignment Pin (5 positions minimum) Metal or plastic at Samtec discretion. (Not available with -LC)
					-T = Triple Row	-LC = Locking Clip (5 positions minimum) (Not available with -A) (Manual placement required)
					-Q = Four Row	-K = (4.25 mm) .167" DIA Polyimide Film Pick & Place Pad (4 positions minimum)
					-5 = Five Row	-P = Pick & Place Pad (4 positions minimum)
					-6 = Six Row	-TR = Tape & Reel (4-28 positions only)
						-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (4-28 positions only)



PROCESSING

SQW Lead-Free Solderable:

Yes, for -D & -D-VS

(Wave only for -T, -Q, -5 & -6)

SQT Lead-Free Solderable:

Yes

SMT LeadCoplanarity:

(0.10 mm) .004" max (02-10)

(0.15 mm) .006" max (11-50)*

*(.004" stencil solution may be available; contact

IPG@samtec.com)

SQT	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OTHER OPTION
02 thru 50				-F = Gold flash on contact, Matte Tin on tail	-S = Single Row	-RA = Right-angle (-Q, -5 & -6 Row not available) (Lead Style -01 only)
				-L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail	-D = Double Row	-“XXX” = Polarized Position (Indicate position number)
					-T = Triple Row	
					-Q = Four Row	
					-5 = Five Row	
					-6 = Six Row	

LEAD STYLE	A
-01	(2.29) .090
-02	(15.24) .600
-03	(5.28) .208

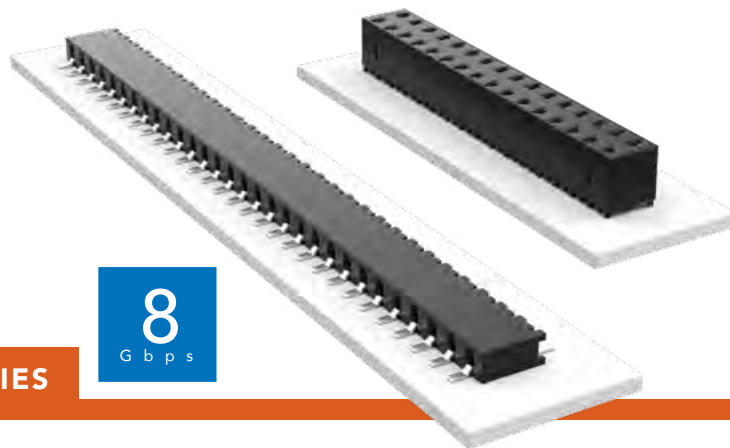
Note:

Some lengths, styles and options are non-standard, non-returnable.

TIGER CLAW™ SOCKET STRIP

(2.00 mm) .0787" PITCH • MMS SERIES

8
Gbps



MMS

Board Mates:

TMMH, TMM, MTMM, MMT,
TW, LTMM, ZLTMM, TSH

Cable Mates:

TCMD

SPECIFICATIONS

Insulator Material:

Black LCP

Contact Material:

Phosphor Bronze

Plating:

Sn or Au over
50 μ" (1.27 μm) Ni

Current Rating (MMS/TMM):

3.9 A per pin
(2 pins powered)

Operating Temp Range:

-55 °C to +125 °C with Gold

-55 °C to +105 °C with Tin

Insertion Depth:

DH = (2.13 mm) .084" to

(2.79 mm) .110",

SH = (2.13 mm) .084"

minimum or pass-through

Top Entry DV/SV =

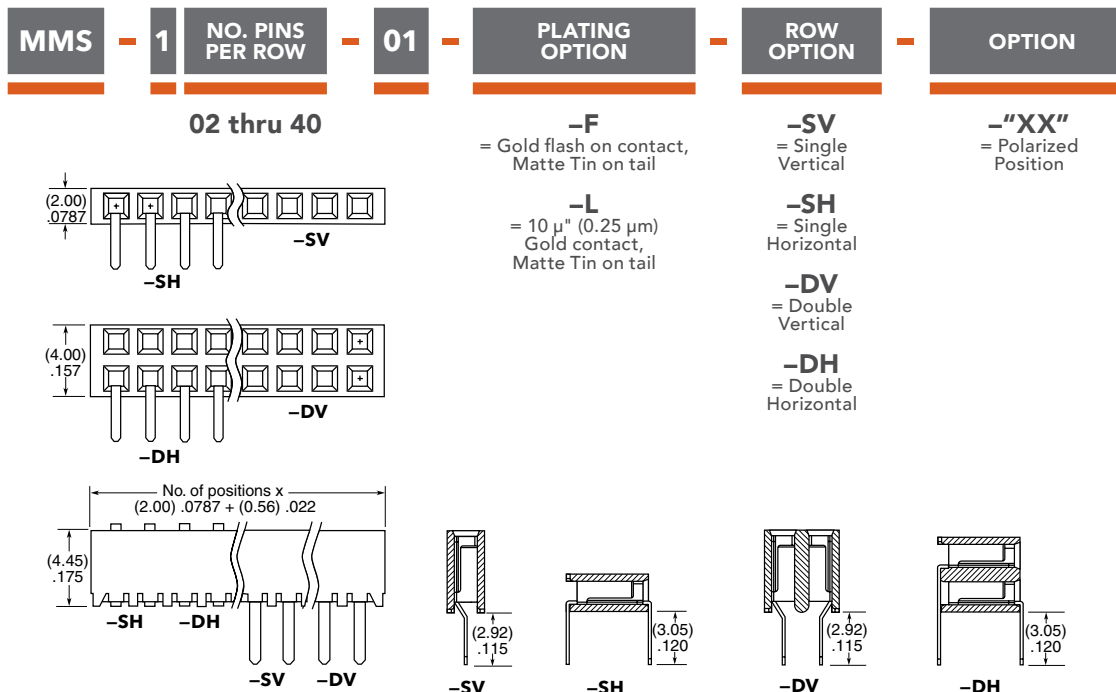
(2.13 mm) .084" to

(4.32 mm) .170"

Bottom Entry DV/SV =

(4.27 mm) .168" minimum

(Plus board)



PROCESSING

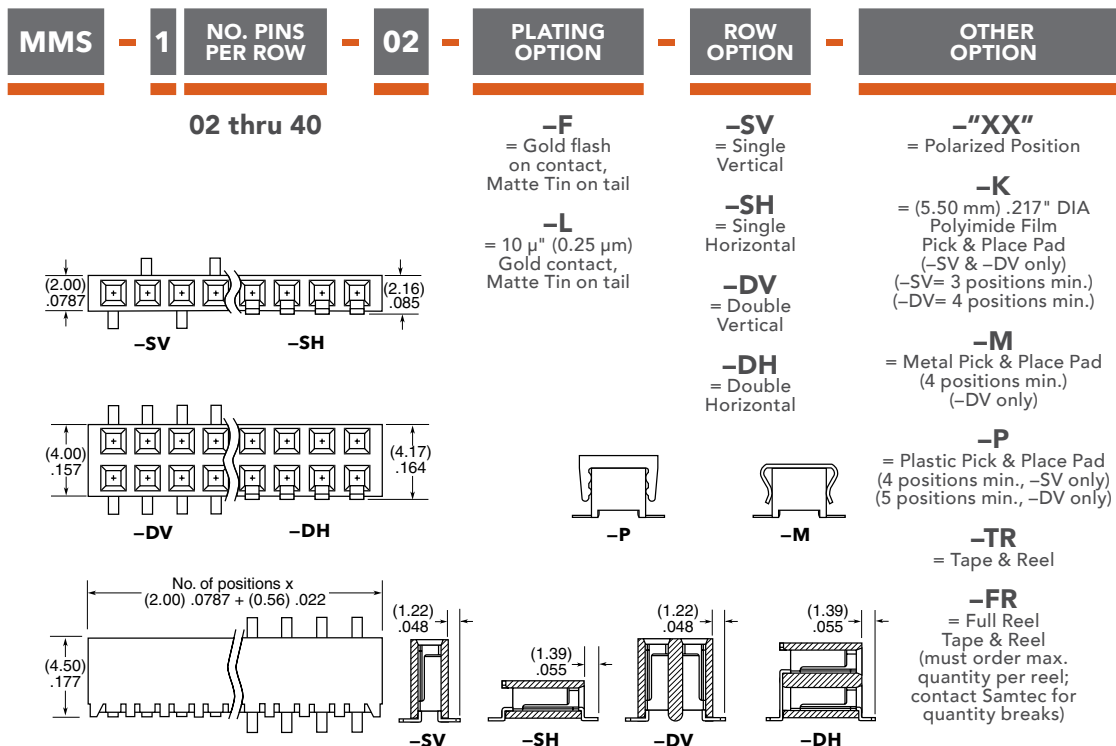
Lead-Free Solderable:

Yes

SMT Lead Coplanarity:

(0.15 mm) .006" max*

*(.004" stencil solution
may be available; contact
IPG@samtec.com)



ALSO AVAILABLE

MOQ Required

Alignment Pin (-DV only)

Locking clips and Through-hole
pass-through options

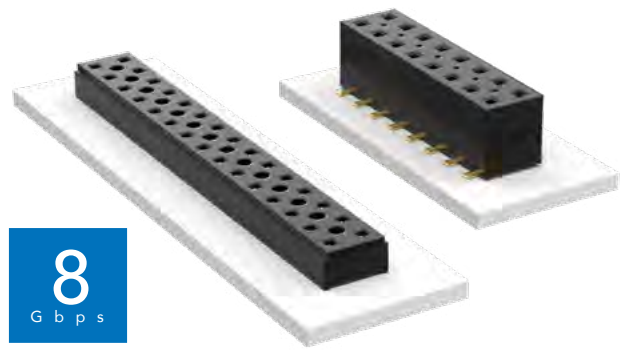
Other platings

Note:

Some lengths, styles and
options are non-standard,
non-returnable.

COST-EFFECTIVE & DUAL WIPE SOCKETS

(2.00 mm) .0787" PITCH • TLE/CLT SERIES



TLE

Mates:

TMMH, TMM, MTMM,
MMT, TW, LTMM, ZLTMM,
TCMD, TSH

CLT

Mates:

TMM, TMMH, MTMM,
MMT, TW, TSH

SPECIFICATIONS

TLE

Insulator Material:

Black Liquid Crystal Polymer

Contact Material:

Phosphor Bronze

Plating:

Au over 50 μ " (1.27 μ m) Ni

Current Rating (TLE/TMMH):

3.2 A per pin

(2 pins powered)

Operating Temp Range:

-55 °C to +125 °C

Insertion Depth:

(2.08 mm) .082" to
(4.37 mm) .172" with
(0.38 mm) .015" wipe,
pass-through, or
(3.35 mm) .132" min
for bottom entry

CLT

Same as TLE except:

Plating:

Sn or Au over 50 μ " (1.27 μ m) Ni

Current Rating (TMMH/CLT):

4.1 A per pin

(2 pins powered)

Insertion Depth:

Top Entry=
(1.40 mm) .055" minimum

Bottom Entry=
(2.57 mm) .101" minimum

(add board thickness for
correct post OAL)

Max Cycles:

100 with 10 μ " (0.25 μ m) Au

PROCESSING

TLE

Lead-Free Solderable:

Yes

SMT Lead Coplanarity:

(0.10 mm) .004" max (02-26)

(0.15 mm) .006" max (27-50)*

*(.004" stencil solution

may be available; contact

IPG@samtec.com)

CLT

Same as TLE except:

SMT Lead Coplanarity:

(0.10 mm) .004" max (02-25)

(0.15 mm) .006" max (26-34)*

(0.20 mm) .008" max (35-50)*

*(.004" stencil solution

may be available; contact

IPG@samtec.com)

Note:

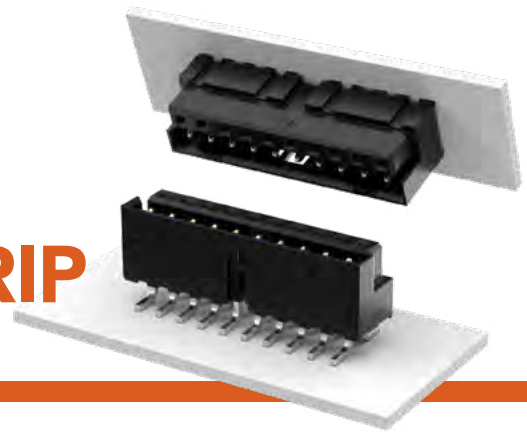
Some lengths, styles and
options are non-standard,
non-returnable.

TLE	- 1	NO. PINS PER ROW	- 01	PLATING OPTION	- DV	OPTION
TIGER BEAM CONTACT		02 thru 50		-G = 10 μ " (0.25 μ m) Gold		-A = Alignment Pin (3 positions minimum) -K = (5.00 mm) .197" DIA Polyimide Film Pick & Place Pad (3 positions minimum) -P = Metal Pick & Place Pad (4 positions minimum) -TR = Tape & Reel Packaging (2-37 positions only) -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks) (2-37 positions only)

CLT	- 1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	- D	OTHER OPTIONS
TIGER CLAW CONTACT 02 thru 50			-01 = Through-hole -02 = Surface Mount -03 = Through-hole	-F = Gold flash on contact, Matte Tin on tail -L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail -G = 10 μ" (0.25 μm) Gold on contact, Gold flash on tail		All options require Style -02 -BE = Bottom Entry (Required for bottom entry applications) -A = Alignment Pin (3 positions minimum) Metal or plastic at Samtec's discretion -K = (5.00 mm) .197" DIA Polyimide Film Pick & Place Pad (04 thru 50 only) -P = Pick & Place Pad (4 positions minimum) (Not always necessary for auto placement.) -TR = Tape & Reel (36 positions max) -FR = Full Reel Tape & Reel (must order maximum quantity per reel; contact Samtec for quantity breaks) (36 positions max)
ALSO AVAILABLE Other Platings (MOQ Required)			No. of positions x (2.00) .0787 (4.00) .157 (2.13) .084			
A (3.02) .119 -01 or -03			(2.27) .090 (5.16) .203 -02			
LEAD STYLE A			-P Option -A Option			
-01 (2.16) .085						
-03 (2.95) .116						

SELF MATING HERMAPHRODITIC STRIP

(2.00 mm) .0787" PITCH • LS2 SERIES



LS2

Mates:

LS2

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal
Polymer

Contact Material:

Phosphor Bronze

Plating:

Au or Sn over
50 μ " (1.27 μ m) Ni

Current Rating:

3.2 A per pin
(6 adjacent pins powered)

Voltage Rating:

475 VAC mated with LS2

Operating Temp Range:

-55 °C to +125 °C

PROCESSING

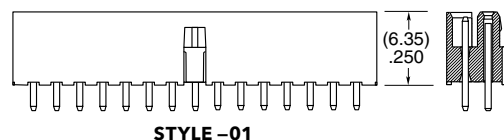
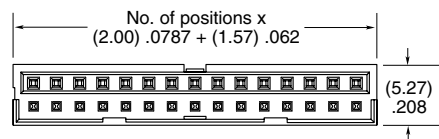
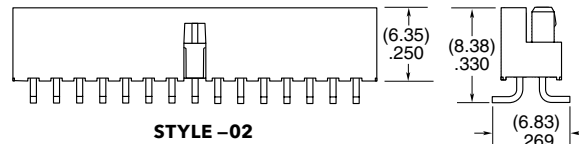
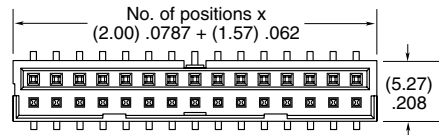
Lead-Free Solderable:

Yes

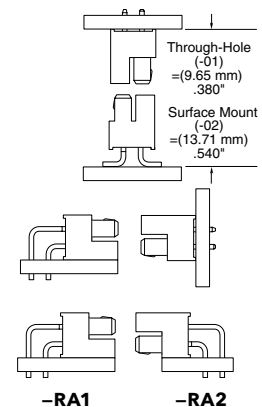
SMT Lead Coplanarity:

(0.15 mm) .006" max*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)

LS2	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	D	TAIL OPTION	OPTION
		05, 10, 15, 20, 25, 30	-01 =Through- hole -02 = Surface Mount	-F = Gold flash on contact, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail		-01 only -RA1 = Right-angle (Shroud Down) -RA2 = Right-angle (Shroud Up)	-K = (6.30 mm) .248" DIA Polyimide Film Pick & Place Pad (-02 only) -TR = Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)



APPLICATION



-RA1

-RA2

ALSO AVAILABLE

MOQ Required

Alignment pin

Other platings

Other stack heights

Note:

Some lengths, styles and
options are non-standard,
non-returnable.

PRESS-FIT HEADERS & SOCKETS

(2.54 mm) .100" PITCH • PHT/PHF SERIES



PHT

Board Mates:
SSW, SSQ, ESW,
ESQ, BCS, BSW,
CES, SLW, PHF, SSM

Cable Mates:
IDSD, IDSS

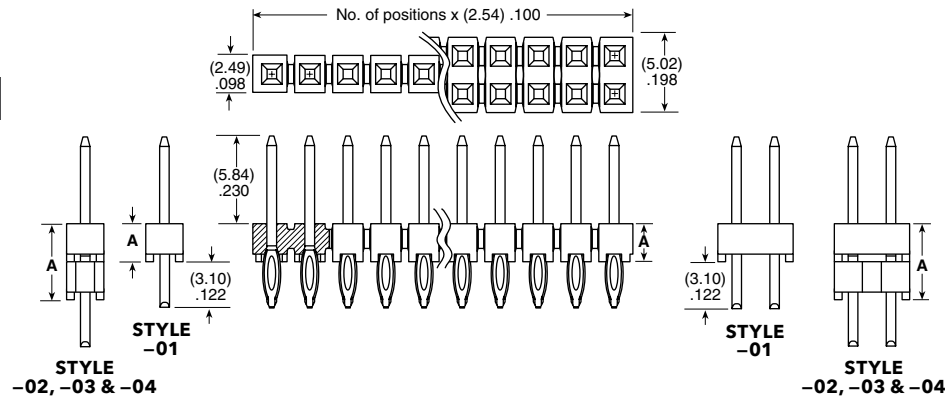
PHF

Board Mates:
TSW, MTSW, MTLW,
EW, ZW, TSS, ZSS,
TSM, TSSH, PHT, DW, HW

SPECIFICATIONS

Insulator Material:
Liquid Crystal Polymer
Contact Material:
Phosphor Bronze
Plating:
Au or Sn over
50 μ " (1.27 μ m) Ni
Current Rating (PHT/PHF):
4.8 A per pin
(2 pins powered)
Operating Temp Range:
-55 °C to +125 °C with Gold
(PHF) **Insertion Depth:**
(3.68 mm) .145" to
(6.35 mm) .250"

PHT	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OTHER OPTION
		01 = (single row only) 02 thru 50	Specify LEAD STYLE from chart	-L = 10 μ " (0.25 μ m) Gold on post, Matte Tin on tail	-S = Single Row -D = Double Row	- "XXX" = Polarized Position



LEAD STYLE	A
-01	(2.54) .100
-02	(5.08) .200
-03	(7.62) .300
-04	(10.16) .400

PROCESSING

Contact ipg@samtec.com

PHF	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OTHER OPTION
		01 = (single row only) 02 thru 50	Specify LEAD STYLE from chart	-L = 10 μ " (0.25 μ m) Gold on post, Matte Tin on tail	-S = Single Row -D = Double Row	- "XXX" = Polarized Position

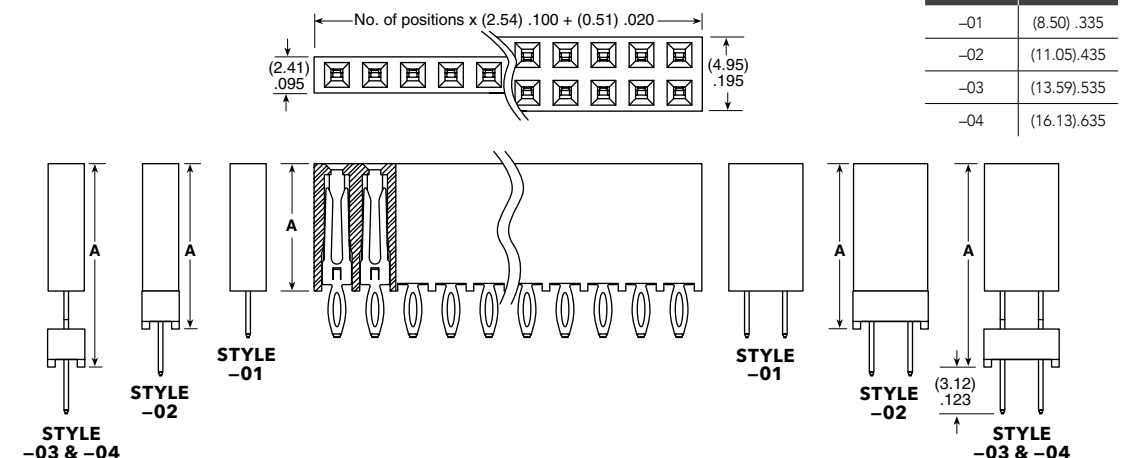
ALSO AVAILABLE

Other Platings
(MOQ Required)

TOOLING

Press-Fit
PHT: CAT-PT-PH-1XX-X-X
PHF: CAT-PT-PH-1XX-X-B
For more information, visit
www.samtec.com/tooling

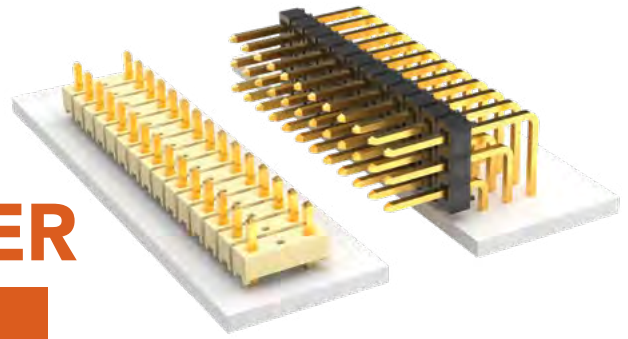
Note:
Some lengths, styles and
options are non-standard,
non-returnable.



LEAD STYLE	A
-01	(8.50) .335
-02	(11.05) .435
-03	(13.59) .535
-04	(16.13) .635

THROUGH-HOLE .025" SQ POST HEADER

(2.54 mm) .100" PITCH • TSW/HTSW SERIES



TSW/HTSW

Board Mates:

SSW, SSQ, SSM, ESW, ESQ,
BCS, BSW, CES, SLW

Cable Mates:

IDSD, IDSS

SPECIFICATIONS

Insulator Material:

TSW: PBT

HTSW: Natural LCP

Terminal Material:

Phosphor Bronze

Plating:

Au or Sn over 50 μ " (1.27 μ m) Ni

Operating Temp Range:

-55 °C to +125 °C with Gold

-55 °C to +105 °C with Tin

Voltage Rating:

550 VAC mated with SSW;

500 VAC mated with

BCS or ESQ;

450 VAC -RA/-RE mated with

BCS or SSM

400 VAC mated with CES

Lead-Free Solderable:

HTSW: Yes

TSW: No, Lead Wave Only

CURRENT RATING (PER PIN)

TSW mated with

ESW	SSW	SLW	SSQ	SSM	BCS	SNT
5.2 A	5.7 A	5.2 A	6.3 A	5.2 A	4.6 A	4.3 A

2 POSITIONS POWERED

ALSO AVAILABLE

Other Platings
(MOQ Required)

OTHER SOLUTIONS

Elevated Right-angle option
Shunts

SERIES

TSW
= Standard Strip

HTSW
= Hi-Temp Strip

PIN CENTERS

-1
= .100" (2.54 mm) Centers,
(All positions filled)

-2
= .200" (5.08 mm) Centers,
(Every other position filled)

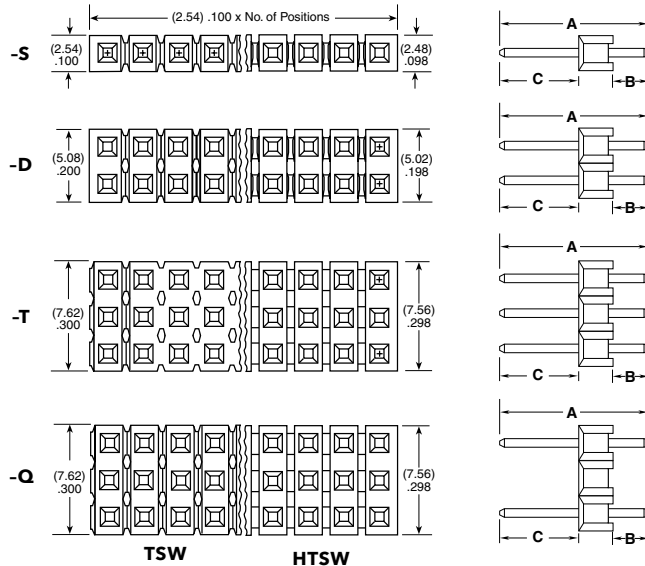
NO. PINS PER ROW

01 thru 50
= .100" (2.54 mm)
Center Version

02 thru 25
= .200" (5.08 mm)
Center Version

LEAD STYLE

Specify
LEAD STYLE
from chart



Straight Pin Versions

STRAIGHT PIN VERSIONS

LEAD STYLE	A	B	C
*-05	(8.51) .335	(3.30) .130	(2.67) .105
*-06	(7.62) .300	(2.41) .095	(2.67) .105
*-07	(10.92) .430	(2.54) .100	
*-08	(13.46) .530	(5.08) .200	
-09	(18.54) .730	(10.16) .400	
-10	(21.08) .830	(12.70) .500	(5.84) .230
-11	(23.62) .930	(15.24) .600	
-12	(26.16) 1.030	(17.78) .700	
-13	(31.24) 1.230	(22.86) .900	
-14	(13.46) .530	(2.79) .110	(8.13) .320
*-15	(18.54) .730	(7.87) .310	(8.13) .320
*-16			
*-17	(21.08) .830	(2.79) .110	(15.74) .620
*-18	(23.62) .930		(18.29) .720

* Available with -LL (Locking Lead) Option

Specify -07 for best mate with IDXX Series IDC Cable

STRAIGHT PIN VERSIONS

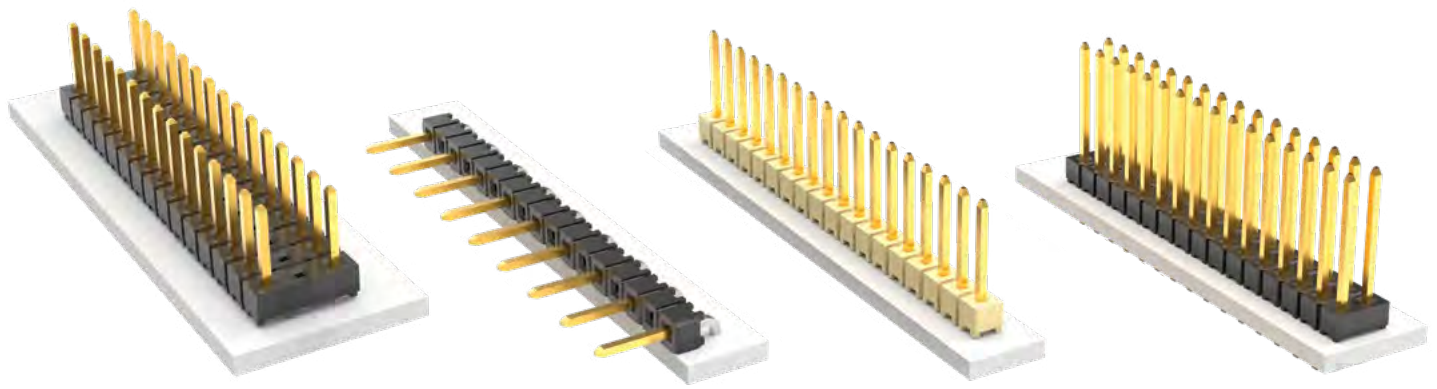
LEAD STYLE	A	B	C
*-19	(26.16) 1.030	(2.79) .110	(20.83) .820
*-20	(31.24) 1.230		(25.91) 1.020
*-21	(36.32) 1.430	(2.79) .110	(30.99) 1.220
*-22	(16.00) .630	(7.62) .300	(5.84) .230
*-23	(11.30) .445	(2.92) .115	(6.73) .265
*-24	(12.15) .480		(8.13) .320
*-25	(16.00) .630	(5.33) .210	
▲-26	(11.58) .456	(3.20) .126	(5.84) .230
-27	(33.78) 1.330	(25.40) 1.000	
-28	(28.70) 1.130	(20.32) .800	
-29	(33.78) 1.330	(23.11) .910	(8.13) .320
-30	(28.70) 1.130	(18.03) .710	
+--41	(9.27) .365	(0.89) .035	(5.84) .230
+--42	(11.94) .470	(1.27) .050	(8.13) .320

+ Style -41 & -42 available with HTSW only.

▲ Except: Style -26 (0.46) .018 DIA Tail

Note:

Some lengths, styles and options are non-standard, non-returnable.



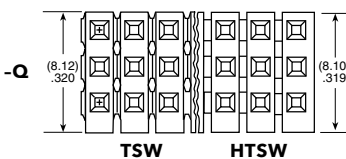
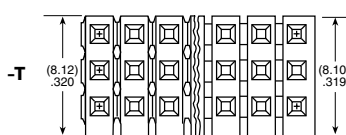
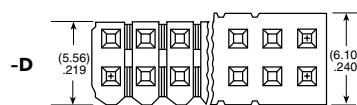
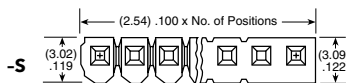
PLATING OPTION

-F
= Gold flash on post, Matte Tin on tail

-L
= 10 μ" (0.25 μm) Gold on post, Matte Tin on tail

-G
= 10 μ" (0.25 μm) Gold on post, Gold flash on balance

-T
= Matte Tin



Right-Angle Versions

LEAD STYLE	D
-RA	(1.52) .060
-RE	(4.06) .160

RIGHT-ANGLE VERSIONS		
-RE LEAD STYLE	C	SINGLE E
-09	(5.84) .230	(4.83) .190
-10		(7.37) .290
-11		(9.91) .390
-12		(12.45) .490
-13		(17.53) .690
-16	(8.13) .320	(2.54) .100
-21	(5.84) .230	(22.61) .890
-22		(2.29) .090
-27		(20.07) .790
-28		(14.99) .590

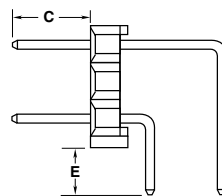
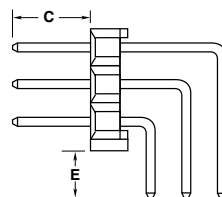
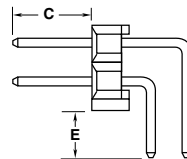
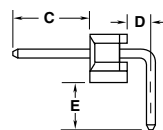
ROW OPTION

-S
= Single Row

-D
= Double Row

-T
= Triple Row

-Q
= Double Row
(5.08 mm).200"row space



OTHER OPTION

-RA or -RE
= Right-angle

-NA
= Right-angle
(Using straight body for coplanar mating with SSW-RA series)

-LL
= Locking Lead
See charts for available styles.
Not available with single row 1 or 2 positions.
Recommended hole size
(1.02 mm ± 0.03 mm) .040" ± .001

-LC
= Locking Clip
(Styles -08 thru -13 & -22 only)
(Requires 4 pin minimum)
(Not available with T, -Q, -RA or -RE)

-LA
= -RA Option with -LL Option

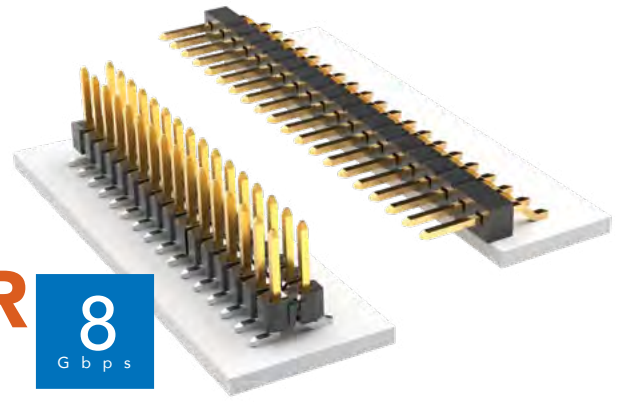
-"XXX"
= Polarized Position

-RA LEAD STYLE	RIGHT-ANGLE VERSIONS			
	SINGLE (-S)		DOUBLE (-D)	TRIPLE (-T & -Q)
	C	E	E	E
-08	(5.84) .230	(2.29) .090	(2.29) .090	(2.29) .090
-09		(7.37) .290	(7.37) .290	(7.37) .290
-10		(9.91) .390	(9.91) .390	(9.91) .390
-11		(12.45) .490	(12.45) .490	(12.45) .490
-12		(14.99) .590	(14.99) .590	(14.99) .590
-13	(8.13) .320	(20.07) .790	(20.07) .790	N/A
*-16		(5.08) .200	(5.08) .200	(5.08) .200
-21	(5.84) .230	(25.15) .990	N/A	N/A
*-22		(4.83) .190	(4.83) .190	(4.83) .190
*-25	(8.13) .320	(2.54) .100	(2.54) .100	(2.54) .100
-27	(5.84) .230	(22.61) .890	N/A	N/A
-28		(17.53) .690	(17.53) .690	
-29		(20.32) .800	N/A	
-30	(8.13) .320	(15.24) .600	(15.24) .600	

* Available with -LA (Locking Lead) Option

SURFACE MOUNT .025" SQ POST HEADER

(2.54 mm) .100" PITCH • TSM SERIES



TSM

Board Mates:

SSW, SSQ, SSM, BSW, ESW,
ESQ, BCS, SLW, CES, HLE

Cable Mates:

IDSS, IDSD

TSM

1

NO. PINS PER ROW

LEAD STYLE

02 thru 36

Specify
LEAD STYLE
from chart

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Terminal Material:

Phosphor Bronze

Plating:

Au or Sn over

50 μ " (1.27 μ m) Ni

Operating Temp Range:

-55 °C to +105 °C with Tin;

-55 °C to +125 °C with Gold

Voltage Rating:

475 VAC -SV/-DV mated with

BCS or SSM

PROCESSING

Lead-Free Solderable:

Yes

-DH/-SH Lead Coplanarity:

(0.15 mm) .006" max (02-36)*

-DV/-SV Lead Coplanarity:

(0.10 mm) .004" max (02-05)

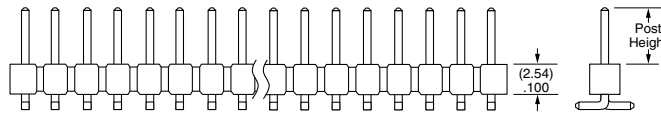
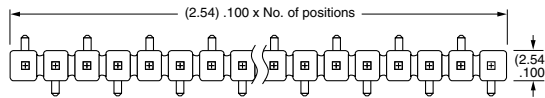
(0.13 mm) .005" max (06-10)*

(0.15 mm) .006" max (11-36)*

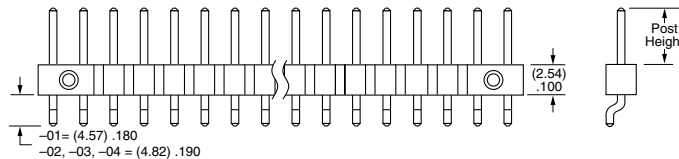
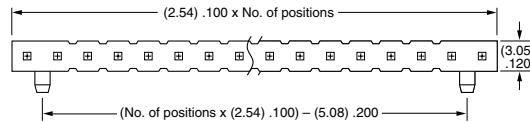
*(.004" stencil solution

may be available; contact

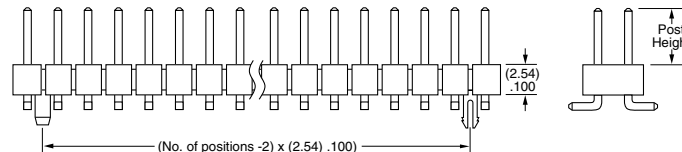
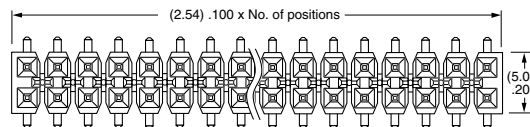
IPG@samtec.com)



-SV Row Option



-SH Row Option



-DV Row Option

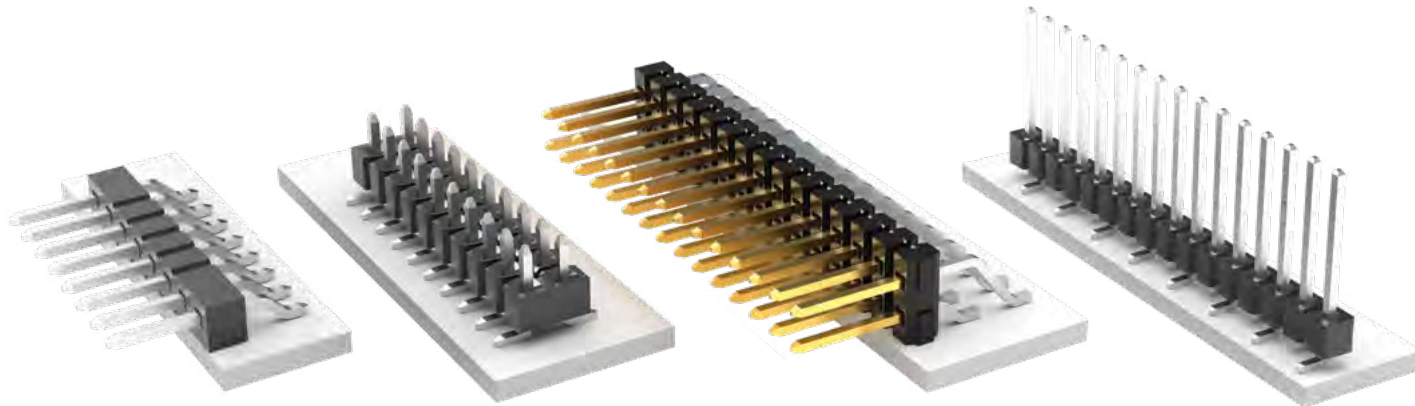
LEAD STYLE	POST HEIGHT	MATES WITH
-01	(5.84) .230	SSW, BCS, SSM, IDSS, IDSD
-02	(8.13) .320	SSM -DH
-03	(10.67) .420	Bottom Mount & Pass Through
-04	(3.05) .120	SLW, CES, HLE

MATES	CURRENT RATING (PER PIN)
TSM/SSW	4.7 A
TSM/SSM	5.4 A
TSM/HLE	4.1 A

2 POSITIONS POWERED

Note:

Some lengths, styles and options are non-standard, non-returnable.



PLATING OPTION

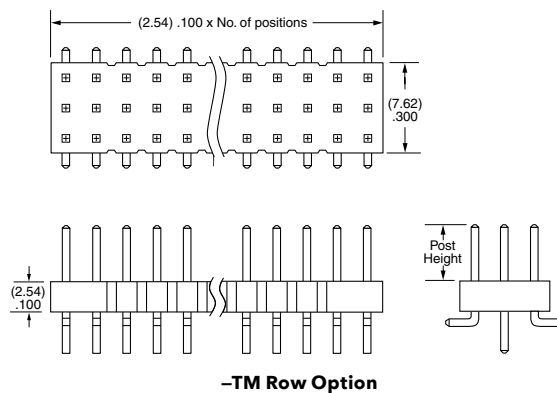
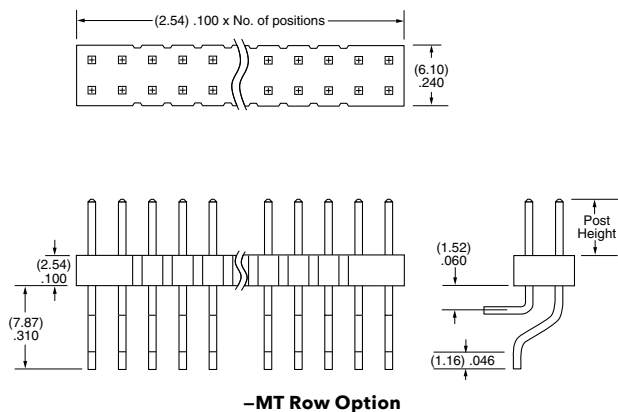
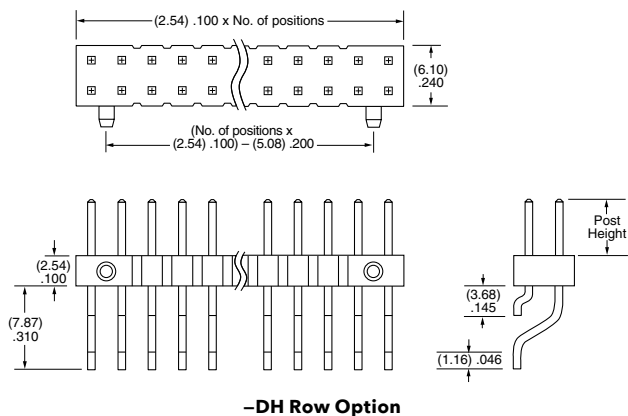
- F**
= Gold flash on post, Matte Tin on tail
- L**
= 10 μ " (0.25 μ m) Gold on post, Matte Tin on tail
- S**
= 30 μ " (0.76 μ m) Gold on post, Matte Tin on tail
- T**
= Matte Tin

ROW OPTION

- SV**
= Single Row Vertical Pin
- DV**
= Double Row Vertical Pin
- SH**
= Single Row Horizontal Pin
- DH**
= Double Row Horizontal Pin (Style -01, -02 or -03 only)
- TM**
= Triple Row Vertical Mixed Technology (Style -01 only) (02 thru 30 positions only)
- MT**
= Mixed Technology Pin (Style -01, -02 or -03 only)

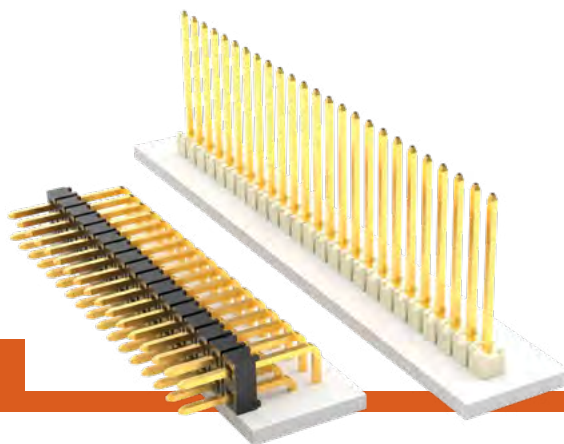
OTHER OPTIONS

- "XXX"**
= Polarized Position
- A**
= Alignment Pin
metal or plastic at Samtec discretion (Not available with -TM or -MT) (02 positions minimum) (Not available with -LC)
- LC**
= Locking Clip
(Not available with -TM) (3 positions minimum) (Not available with -A) (Manual placement required)
- K**
= (6.50 mm) .256" DIA Polyimide Film Pick & Place Pad
(-SH: 4 positions minimum without -TR; 2 & 3 positions available with -TR) (-DH: 4 positions minimum without -TR)
- P**
= Plastic Pick & Place Pad
(-DV: 4 positions minimum without -TR; 2 & 3 positions available with -TR) (-SH: 4 positions minimum without -TR; 2 & 3 positions available with -TR) (-DH: 5 positions minimum without -TR) (-SV: 4 positions minimum without -TR; 2 & 3 positions available with -TR)
- TR**
= Tape & Reel
-SV: 02-22 positions, -DV: 02-28 positions, -SH: 02-30 positions, -DH: 02-29 positions (Not available with -MT or -TM)
- FR**
= Full Reel Tape & Reel
(must order maximum quantity per reel; contact Samtec for quantity breaks)
-SV: 02-22 positions, -DV: 02-28 positions, -SH: 02-30 positions, -DH: 02-29 positions (Not available with -MT or -TM)



MODIFIED .025" SQ POST HEADERS

(2.54 mm) .100" PITCH • MTSW/HMTSW SERIES



MTSW/HMTSW

Board Mates:

SSW, SSQ, ESW,
ESQ, BCS, BSW
CES, SLW, HLE, SSM

Cable Mates:

IDSD, IDSS

SPECIFICATIONS

Insulator Material:

MTSW: Black Glass
Filled Polyester
HMTSW: Natural Liquid
Crystal Polymer

Terminal Material:

Phosphor Bronze

Plating:

Au or Sn over
50 μ " (1.27 μ m) Ni

Operating Temp Range:

-55 °C to +125 °C with Gold
-55 °C to +105 °C with Tin

PROCESSING

Lead-Free Solderable:

MTSW: No, Lead Wave Only
HMTSW: Yes

SERIES

MTSW
= Modified Strip

HMTSW
= Hi-Temp
Modified Strip

PIN CENTERS

-1
= (2.54 mm) .100" Pitch
(All positions filled)

-2
= (5.08 mm) .200" Pitch
(Every other position filled)

NO. PINS PER ROW

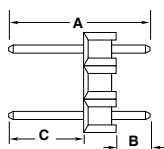
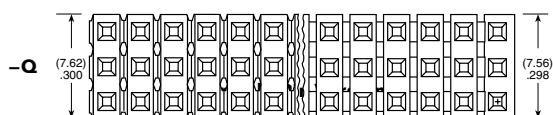
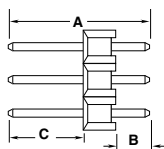
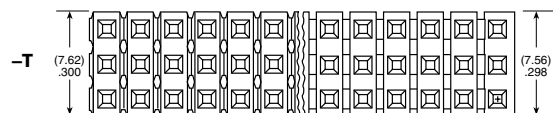
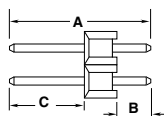
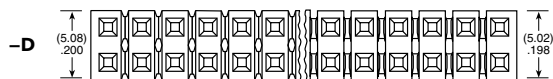
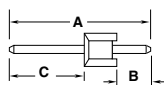
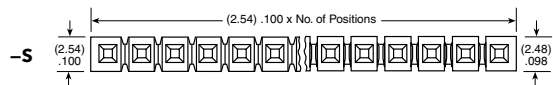
01 thru 50
= .100" (2.54 mm)
Center Version

02 thru 25
= .200" (5.08 mm)
Center Version

LEAD STYLE

Specify
LEAD STYLE
from chart

LEAD STYLE	A
-06	(7.62) .300
-07	(10.92) .430
-08	(13.46) .530
-09	(18.54) .730
-10	(21.08) .830
-11	(23.62) .930
-12	(26.16) 1.030
-13	(31.24) 1.230
-21	(36.32) 1.430
-22	(16.00) .630
-23	(11.30) .445
-24	(12.19) .480
-27	(33.78) 1.330
-28	(28.70) 1.130



MTSW

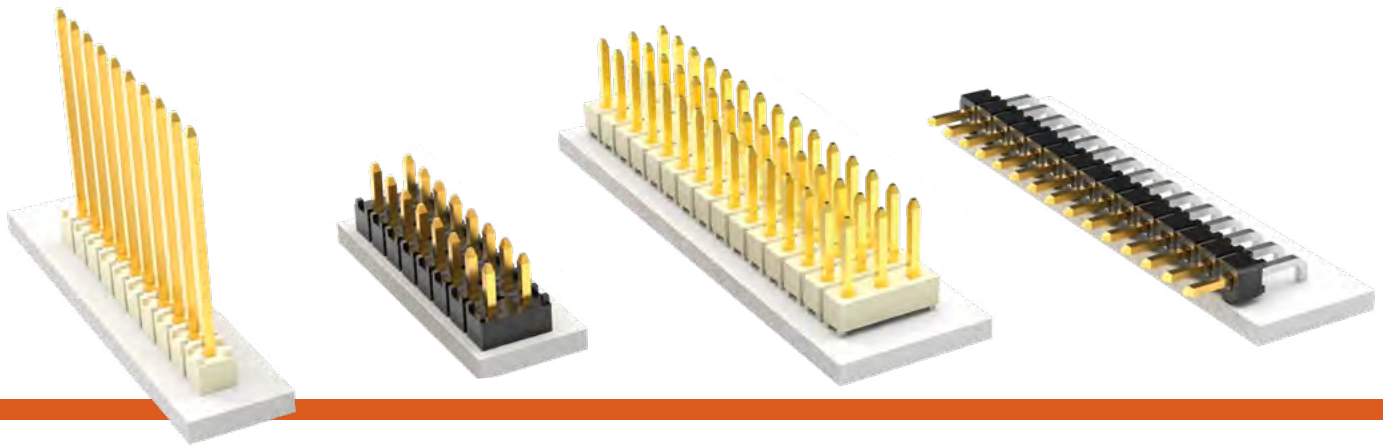
HMTSW

Straight Pin Versions

FOR "B" = (2.29) .090	
LEAD STYLE	C MAXIMUM STRAIGHT
-06	(2.79) .110
-07	(6.10) .240
-08	(8.64) .340
-09	(13.72) .540
-10	(16.26) .640
-11	(18.80) .740
-12	(21.34) .840
-13	(26.42) 1.040
-21	(31.50) 1.240
-22	(11.18) .440
-23	(6.48) .255
-24	(7.37) .290
-27	(28.96) 1.140
-28	(23.88) .940

Note:

These Series are
non-standard, non-returnable.



PLATING OPTION

-F
= Gold flash on post,
Matte Tin on tail

-L
= 10 μ " (0.25 μ m)
Gold on post,
Matte Tin on tail

-G
= 10 μ " (0.25 μ m)
Gold on post,
Gold flash on balance

-T
= Matte Tin

ROW OPTION

-S
= Single Row

-D
= Double Row

-T
= Triple Row

-Q
= Double Row
.200" (5.08 mm)
row space

POST HEIGHT

"XXXX"
= "C" Dimension
(Specify post height in
INCHES
.005" (0.13 mm) increments)

OTHER OPTION

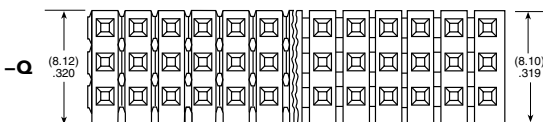
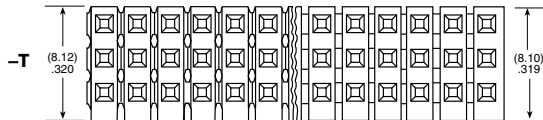
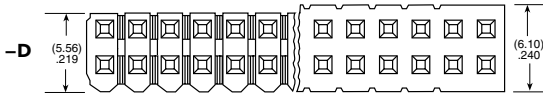
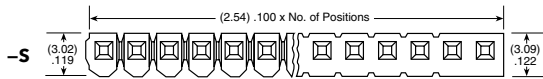
-RA or -RE
= Right-angle

-LL
= Locking Lead
(not available with -RE, not available
in single row 1 or 2 positions)
(Available on tails from (2.29 mm) .090"
to (10.16 mm) .400" only)

-LA
= -RA option with -LL Option
(Maximum "C" = (13.46 mm) .530")

POLARIZED OPTION

"XXX"
= Polarized
(Specify 'XXX' as position number)



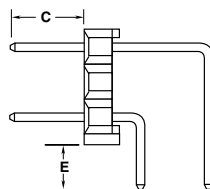
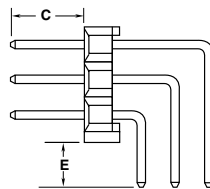
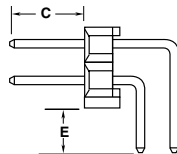
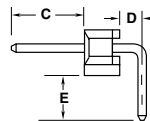
MTSW

HMTSW

Right-Angle Versions (-RA Options)

Right-Angle Versions (-RE Options) Single Row Only

(HMTSW -S & -D = 36 positions maximum)



-RX OPTION	D
-RA	(1.52) .060
-RE	(4.06) .160

FOR "E" = (2.29) .090 MIN FOR -RA & -RE

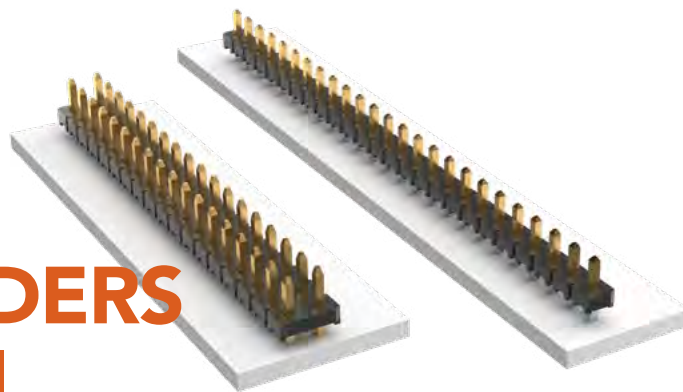
LEAD STYLE	C MAXIMUM with/-RA	C MAXIMUM with/-RE
-06	Not Available	Not Available
-07	(3.30) .130	Not Available
-08	(5.84) .230	(3.30) .130
-09	(10.92) .430	(8.38) .330
-10	(13.46) .530	(10.92) .430
-11	(16.00) .630	(13.46) .530
-12	(18.54) .730	(16.00) .630
*-13	(23.62) .930	(21.08) .830
*-21	(28.70) 1.130	(26.16) 1.030
-22	(8.38) .330	(5.84) .230
*-23	(3.68) .145	Not Available
*-24	(4.57) .180	
*-27	(26.16) 1.030	(23.62) .930
*-28	(21.08) .830	(18.54) .730

* Styles -21, -23, -24, -27 not available with -D Right-angle
Styles -13, -21, -23, -24, -27, -28 not available with -T or -Q Right-angle

FLEX STACK

LOW-PROFILE .025" SQ POST HEADERS

(2.54 mm) .100" PITCH • TLW/MTLW SERIES



TLW/MTLW

Board Mates:

BSW, CES, SLW, HLE

FEATURES

These headers provide the ultimate low-profile (0.64 mm) .025" square post board stacking system. The high quality Phosphor Bronze terminals are available with a standard short post height (TLW Series) for mating with low-profile sockets, or the post height can be Modified (MTLW Series) to accommodate IDC assemblies and other applications.

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Terminal Material:

Phosphor Bronze

Plating:

Au or Sn over

50 μ " (1.27 μ m) Ni

Current Rating (TLW/SLW):

5.2 A per pin

(2 pins powered)

Operating Temp Range:

-55 °C to +105 °C with Tin

-55 °C to +125 °C with Gold

PROCESSING

Lead-Free Solderable:

Yes

ALSO AVAILABLE

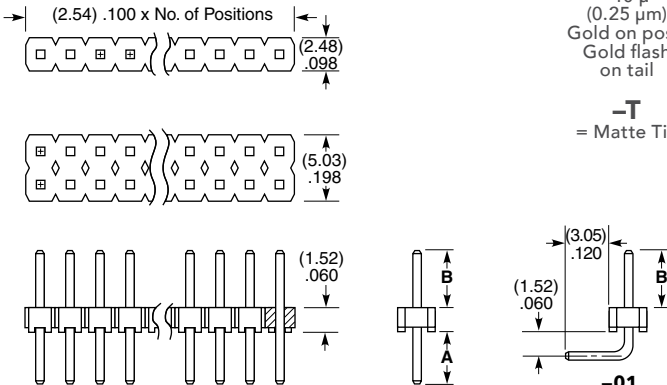
MOQ Required

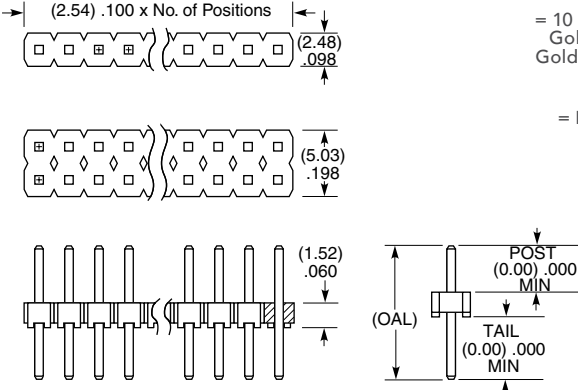
Other platings

Notch option

Note:

Some lengths, styles and options are non-standard, non-returnable. MTLW Series is non-standard, non-returnable.

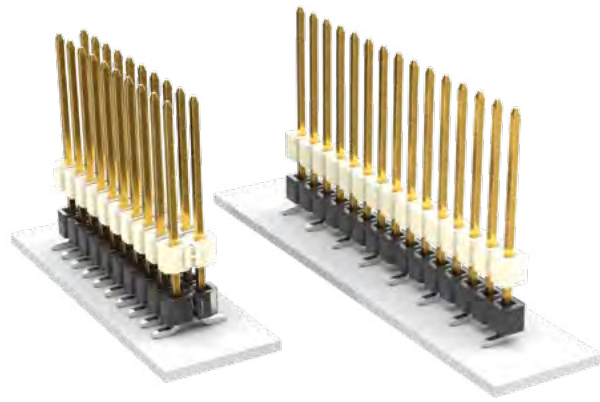
TLW	- 1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OTHER OPTION
		01 thru 40 = Single Row	Specify LEAD STYLE from chart	-F = Gold flash on post, Matte Tin on tail	-S = Single Row	-RA = Right-angle (-01 Lead Style only)
		01 thru 36 = Double Row		-G = 10 μ" (0.25 μm) Gold on post, Gold flash on tail	-D = Double Row	-“XX” = Polarized Position Specify position for omitted pin.
				-T = Matte Tin		
						
-05 & -06						
		LEAD STYLE	A	B		
		-01	N/A	(5.84) .230		
		-05	(4.32) .170	(2.67) .105		
		-06	(3.43) .135			

MTLW	- 1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	POST HEIGHT
		01 thru 40 = Single Row	Specify LEAD STYLE from chart	-F = Gold flash on post, Matte Tin on tail	- S = Single Row	- "XXX" = Post Height Dimension (In inches)
		01 thru 36 = Double Row		-L = 10 μ" (0.25 μm) Gold on post, Matte Tin on tail	- D = Double Row	
				-G = 10 μ" (0.25 μm) Gold on post, Gold flash on tail		
				-T = Matte Tin		
						
			LEAD STYLE	OAL		
			-05	(8.51) .335		
			-06	(7.62) .300		
			-07	(10.92) .430		
			-08	(13.46) .530		
			-09	(18.54) .730		
			-10	(21.08) .830		
			-22	(16.00) .630		
			-23	(11.30) .445		
			-24	(12.19) .480		

FLEX STACK

FLEXIBLE .025" SQ BOARD STACKERS

(2.54 mm) .100" PITCH • HW SERIES



HW

Board Mates:

SSW, SSQ, ESW, ESQ,
CES, SLW, BSW, BCS,
SSM, HLE, PHF

Cable Mates:

IDSS, IDSD

SPECIFICATIONS

Insulator Material:

HW-SM Top = Natural LCP
HW-SM Bottom = Black LCP
HW-TH = Natural LCP

Terminal Material:

Phosphor Bronze

Plating:

Au or Sn over
50 μ " (1.27 μ m) Ni

Operating Temp Range:

-55 °C to +125 °C with Gold
-55 °C to +105 °C with Tin

PROCESSING

Lead-Free Solderable:

Yes

SMT Lead Coplanarity:

(0.15 mm) .006" max*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)

HW	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	STACKER HEIGHT	SM	OTHER OPTION
----	---------------------	---------------	-------------------	---------------	-------------------	----	-----------------

01 thru 50
(Through-hole)

02 thru 36
(Surface
mount)

Specify
LEAD
STYLE
from
chart

-F
= Gold flash
on contact,
Matte Tin
on tail

-L
= 10 μ "
(0.25 μ m)
Gold on
contact
area of
longer tail,
Matte Tin
on tail

-G
= 10 μ "
(0.25 μ m)
Gold on
contact
area of
longer tail,
Gold flash
on balance

-T
= Matte
Tin

-S
= Single
Row

-D
= Double
Row

-T
= Triple
Row
(Through-
hole only)

-Q
= Double
Row
.200"
(5.08 mm)
row space
(Through-
hole only)

-"XXX"
= Stacker
Height
(in inches)

Through-
hole =
(5.08 mm)
.200" Min.

Surface
mount =
(6.35 mm)
.250" Min.

Leave
blank for
Through-
hole

-"XXX"

= HW-TH
Tail Length
(in inches)
(1.40 mm)
.055" min.
Example:
-250
= (6.35 mm) .250"

-LL

= Locking Lead
(Through-
hole only)
(Shortest
dimension
between the tail
and the post is
the end that will
be crimped.
Available on tails
from (2.29 mm)
.090" to (7.87 mm)
.310" only.)
Single row, 01 &
02 positions & -Q
row not available

-"XXX"
= Polarized
(Specify omitted
pin position)

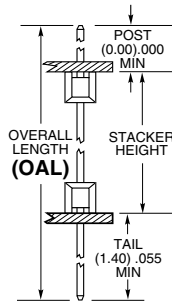
-A
= Alignment Pin
(Metal or plastic
at Samtec
discretion)
(Surface
mount only)

-TR

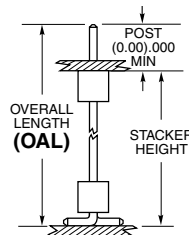
= Tape & Reel
(4-27 pins
per row only)
(Not Available
on Lead Styles
10, 11, 12 & 20)
(Surface
mount only)

-FR

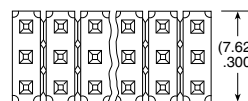
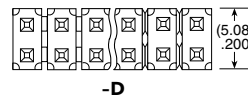
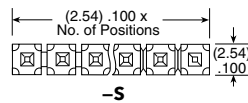
= Full Reel
Tape & Reel
(must order max.
quantity per reel;
contact Samtec
for quantity
breaks)
(4-27 pins
per row only)
(Not Available
on Lead Styles
10, 11, 12 & 20)
(Surface
mount only)



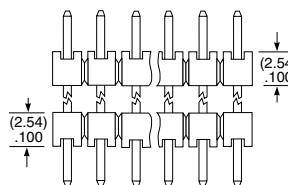
LEAD STYLE	OAL (TH)
-07	(10.92) .430
-08	(13.46) .530
-09	(18.54) .730
-10	(21.08) .830
-11	(23.62) .930
-12	(26.16) 1.030
-13	(31.24) 1.230
-14	(36.32) 1.430
-15	(16.00) .630
-16	(11.30) .445
-17	(12.19) .480
-19	(33.78) 1.330
-20	(28.70) 1.130



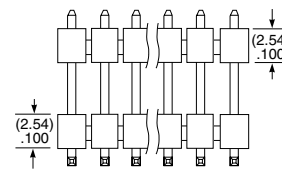
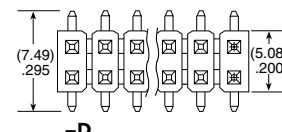
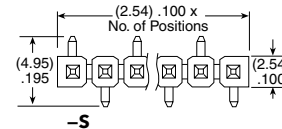
LEAD STYLE	OAL (SMT)
-08	(11.81) .465
-09	(16.89) .665
-10	(19.43) .765
-11	(21.97) .865
-12	(24.51) .965
-15	(14.35) .565
-16	(9.65) .380
-17	(10.54) .415
-20	(27.05) 1.065



-Q* same as -T except middle
row pins are removed



HW-TH



HW-SM

ALSO AVAILABLE MOQ Required

Other platings

Locking Clip available with
double row HW-SM
(Manual placement required)

Notes:

For added mechanical
stability, Samtec recommends
mechanical board spacers be
used in applications with gold or
selective gold plated connectors.
Contact ipg@samtec.com for
more information.

This Series is non-standard,
non-returnable.

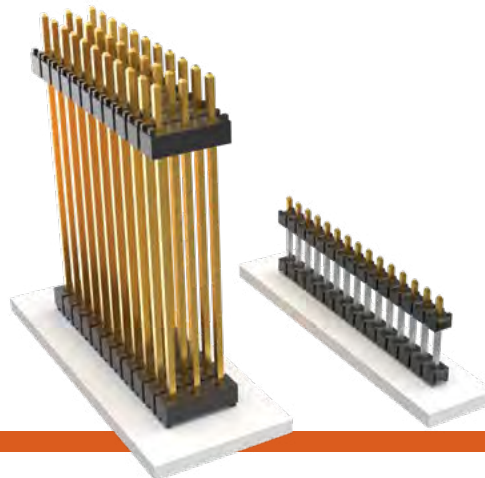
samtec.com?HW-TH or samtec.com?HW-SM

F-221

FLEX STACK

FLEXIBLE .025" SQ BOARD STACKERS

(2.54 mm) .100" PITCH • DW/EW/ZW SERIES



DW/EW/ZW

Board Mates:

SSW, SSQ, ESW, ESQ,
CES, SLW, BSW, BCS,
SSM, HLE, PHF

Cable Mates:

IDSS, IDSD

SPECIFICATIONS

Insulator Material:

Black Glass Filled Polyester

Terminal Material:

Phosphor Bronze

Plating:

Au or Sn over
50 μ " (1.27 μ m) Ni

Operating Temp Range:

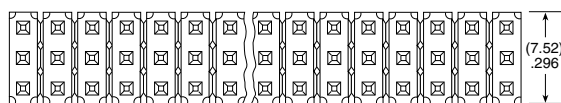
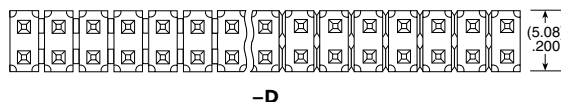
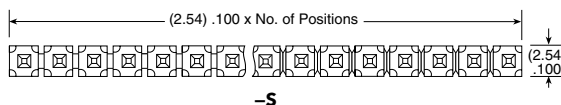
-55 °C to +125 °C with Gold
-55 °C to +105 °C with Tin

PROCESSING

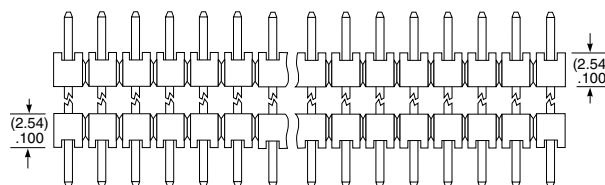
Lead-Free Solderable:

No, Lead Wave Only

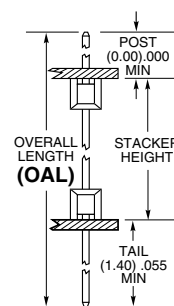
SERIES	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	STACKER HEIGHT	OTHER OPTION
DW = (2.79 mm) .110" Tail	01 thru 50	Specify LEAD STYLE from chart	-F = Gold flash on contact, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on contact area of longer tail, Matte Tin on tail -G = 10 μ " (0.25 μ m) Gold on contact area of longer tail, Gold flash on balance -T = Matte Tin	-S = Single Row -D = Double Row -T = Triple Row -Q = Double Row .200" (5.08 mm) row space	-"XXX" = Stacker Height (inches) (5.08 mm) .200" minimum Example: -250 = (6.35 mm) .250"	-"XXX" = ZW Tail Length (inches) (1.40 mm) .055" minimum Example: -250 = (6.35 mm) .250" -LL = Locking Lead (Shortest dimension between the tail and the post is the end that will be crimped. Available on tails from (2.29 mm) .090" to (7.87 mm) .310" only.) Single row, 01 & 02 positions & -Q row not available -"XXX" = Polarized (Specify omitted pin position)



-Q* same as -T except middle row pins are removed



LEAD STYLE	OAL
-07	(10.92) .430
-08	(13.46) .530
-09	(18.54) .730
-10	(21.08) .830
-11	(23.62) .930
-12	(26.16) 1.030
-13	(31.24) 1.230
-14	(36.32) 1.430
-15	(16.00) .630
-16	(11.30) .445
-17	(12.19) .480
-19	(33.78) 1.330
-20	(28.70) 1.130



Notes:

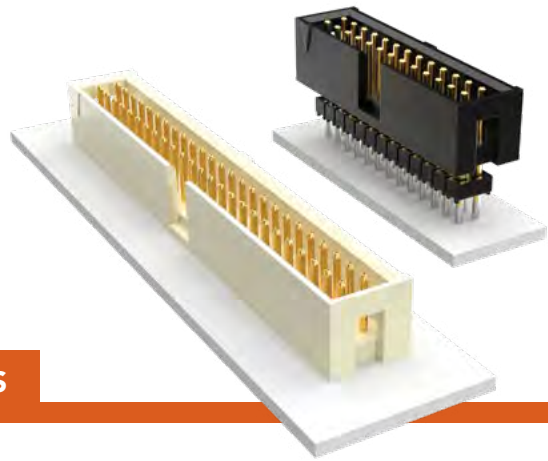
For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors. Contact jpg@samtec.com for more information.

This Series is non-standard, non-returnable.

samtec.com?DW, samtec.com?EW or samtec.com?ZW

SHROUDED .025" SQ POST HEADERS

(2.54 mm) .100" PITCH • TSS/HTSS/ZSS SERIES



TSS/HTSS/ZSS

Mates:

SSW, SSQ, ESW, ESQ,
SSM, BCS

SPECIFICATIONS

Insulator Material:

TSS, ZSS=Black Glass
Filled Polyester
HTSS=Natural PCT

Insulation Resistance:

5000 MΩ min

Terminal Material:

Phosphor Bronze
Plating: Au or Sn over
50 μ" (1.27 μm) Ni

Operating Temp Range:

-55 °C to +125 °C with Gold

-55 °C to +105 °C with Tin

Withstanding Voltage:

1000 VRMS

PROCESSING

Lead-Free Solderable:

HTSS=Yes

TSS, ZSS=No, Lead Wave only

SMT Lead Coplanarity:

(0.15 mm) .006" max*
*(.004" stencil solution
may be available; contact
ipg@samtec.com)

SERIES	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION
--------	---	------------------	------------	----------------	------------

TSS
= Connector Strip

HTSS
= High Temp
Connector Strip

03
(TSS only)
**05, 07, 08, 10,
12, 13, 15, 17,
20, 25, 32, 36**
(Standard sizes)

Specify
**LEAD
STYLE**
from
chart

-F
= Gold flash on post,
Matte Tin on tail
(Not available on -DV)

-L
= 10 μ" (0.25 μm)
Gold on post,
Matte Tin on tail

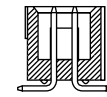
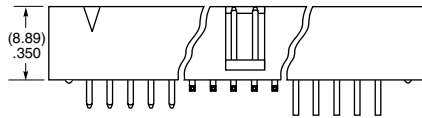
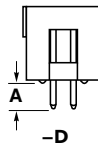
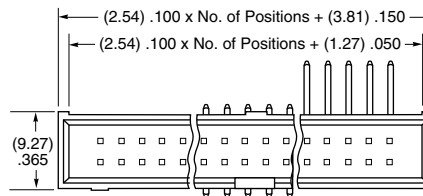
-T
= Matte Tin

-D
= Double Row
Through-hole
(lead style -01,
-02 & -03 only)

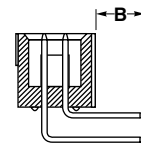
-DV
= Double Row
Surface Mount
(lead style -01 only)
(HTSS only)

-D-RA
= Double Row
Right-angle
(lead style -04
& -05 only)

LEAD STYLE	T/H (A)
-01	(2.92) .115
-02	(4.19) .165
-03	(14.35) .565



-DV
(HTSS ONLY)



-D-RA

LEAD STYLE	RIGHT ANGLE (B)
-04	(3.30) .130
-05	(5.84) .230

ZSS	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	D	BODY HEIGHT
-----	---	------------------	------------	----------------	---	-------------

**03, 05, 07, 08,
10, 12, 13, 15,
17, 20, 25, 32, 36**
(Standard sizes)

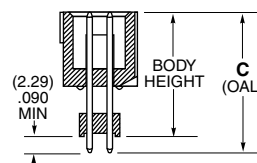
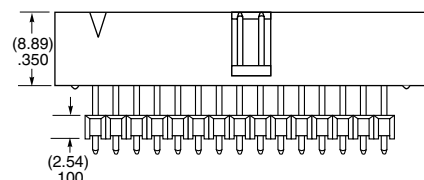
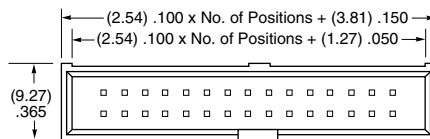
Specify
**LEAD
STYLE**
from
chart

-F
= Gold flash on post,
Matte Tin on tail

-L
= 10 μ" (0.25 μm)
Gold on post,
Matte Tin on tail

-T
= Matte Tin

-"XXXX"
= Body Height



LEAD STYLE	C (OAL)	MAX BODY HEIGHT
-01	(16.00) .630	(13.72) .540
-02	(18.54) .730	(16.26) .640
-03	(21.08) .830	(18.80) .740
-04	(23.62) .930	(21.34) .840
-05	(26.16) 1.030	(23.88) .940
-06	(28.70) 1.130	(26.42) 1.040
-07	(31.24) 1.230	(28.96) 1.140
-08	(33.78) 1.330	(31.50) 1.240
-09	(36.32) 1.430	(34.04) 1.340

Note:

Some lengths, styles and options are non-standard, non-returnable. ZSS is non-standard, non-returnable.

Note:

For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors. Contact ipg@samtec.com for more information.

THROUGH-HOLE .025" SQ POST SOCKET

(2.54 mm) .100" PITCH • SSW/SSQ SERIES

8
G b p s

SSW/SSQ

Mates:

TSW, MTSW, MTLW,
DW, EW, ZW, TSS, ZSS,
TSM, TSSH, HTSS

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer
(-S & -D) or
Black High Temperature
Thermoplastic (-T)

Contact Material:

Phosphor Bronze

Plating:

Au or Sn over

50 μ " (1.27 μ m) Ni

Current Rating (SSW/TSM):

4.7 A per pin

(2 pins powered)

Current Rating (SSQ/TSW):

6.3 A per pin

(2 pins powered)

Operating Temp Range:

-55 °C to +125 °C with Gold

-55 °C to +105 °C with Tin

Insertion Depth:

(3.68 mm) .145" to

(6.35 mm) .250"

Normal Force:

Standard= 125 grams (4.4 N)

Max Cycles:

100 with 10 μ " (0.25 μ m) Au

Voltage Rating:

465 VAC / 655 VDC

PROCESSING

Lead-Free Solderable:

Yes:

-S and -D row option

No, Lead Wave only:

-P, -T and -Q row option

SERIES	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	TAIL OPTION	OTHER OPTION
--------	---	------------------	------------	----------------	------------	-------------	--------------

SSW
= Solder
Tail

01 thru 50

Specify
LEAD
STYLE
from
chart

-F
= Gold flash
on contact,
Matte Tin on tail

-L
= 10 μ " (0.25 μ m)
Gold on contact,
Matte Tin on tail

-G
= 20 μ " (0.51 μ m)
Gold on contact,
Gold flash on tail

-T
= Matte Tin
(-T N/A on
LIF contacts)

-S
= Single Row

-P
= Single Row
(36 pins max)

-D
= Double Row

-T
= Triple Row

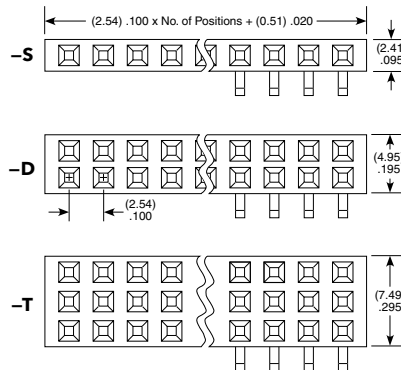
-Q
= Double Row
".200"
(5.08 mm)
row space
(outer rows
filled only)

Leave blank
for straight
pin version)

-RA
= Right-
angle

-LL
= Locking
Lead
Available
on tails from
(2.29 mm)
.090" to
(7.87 mm)
.310" only.
Not Available
with single
row 1 or 2
positions)

"XXX"
= Polarized
(Specify "XXX" as
position number)



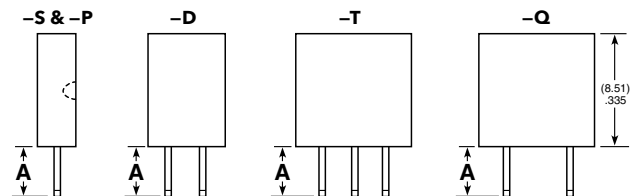
Through-hole

Right-Angle

THROUGH-HOLE		
LEAD STYLE		SINGLE DOUBLE OR TRIPLE
Standard Insertion Force	Low Insertion Force*	
-01	-21	(2.64) .104
-02	-22	(4.93) .194
-03	-24	(10.00) .394
-04	-24	(14.83) .584
-06**	N/A	(3.15) .124

* LIF not available with Tin Plating

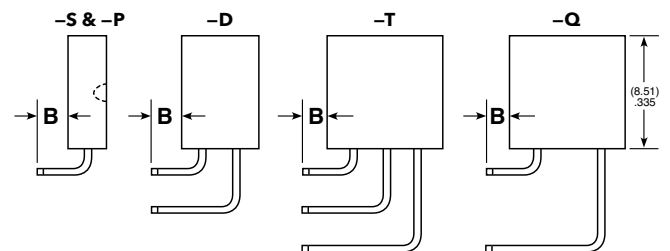
**Style -06 Not available with SSQ



Straight Pin Versions

RIGHT-ANGLE				
LEAD STYLE		SINGLE (-S) B	DOUBLE (-D) B	TRIPLE (-T & -Q) B
Standard Insertion Force	Low Insertion Force*			
-02	-22	(2.54) .100	(2.54) .100	(2.54) .100
-03	-23	(7.62) .300	(7.62) .300	N/A
-04	-24	(12.45) .490	N/A	N/A

*LIF not available with Tin Plating



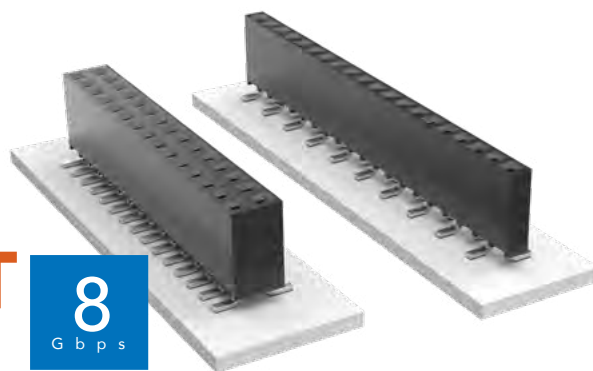
Right-Angle Versions

Note:

Some lengths, styles and
options are non-standard,
non-returnable.

SURFACE MOUNT .025" SQ POST SOCKET

(2.54 mm) .100" PITCH • SSW SERIES



8
G b p s

SSW

Mates:

TSW, MTSW, HTSW,
HMTSW, MTLW, EW, ZW,
TSS, HTSS, ZSS, TSM,
TSSH, DW, HW

SPECIFICATIONS

Insulator Material:

Black LCP

Contact Material:

Phosphor Bronze

Plating:

Au or Sn over
50 μ " (1.27 μ m) Ni

Current Rating (SSW/TSM):

4.7 A per pin
(2 pins powered)

Operating Temp Range:

-55 °C to +125 °C with Gold
-55 °C to +105 °C with Tin

Insertion Depth:

(3.68 mm) .145" to
(6.35 mm) .250"

Max Cycles:

100 with 10 μ " (0.25 μ m) Au

Voltage Rating:

465 VAC / 655 VDC

PROCESSING

Lead-Free Solderable:

Yes

SMT Lead Coplanarity:

(0.10 mm) .004" max

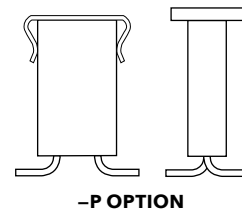
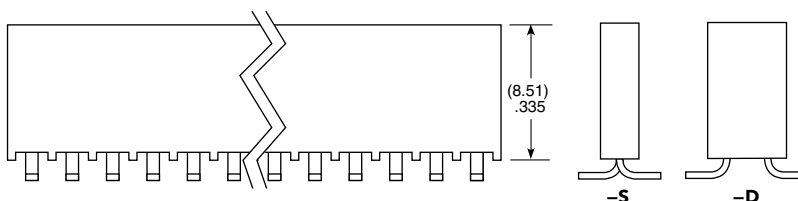
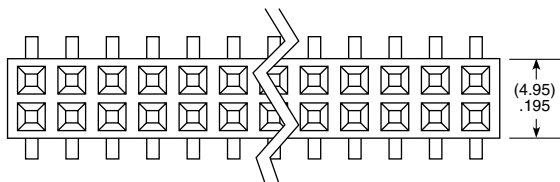
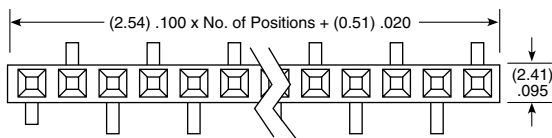
SSW	1	NO. PINS PER ROW	22	PLATING OPTION	ROW OPTION	VS	OTHER OPTION
		02 thru 36					
				-F = Gold flash on contact, Matte Tin on tail	-S = Single Row		-XX = Polarized Position
				-L = 10 μ " (0.25 μ m) Gold on contact, Matte Tin on tail	-D = Double Row		-K = -S: (3.50 mm) .138" DIA, -D: (6.50 mm) .256" DIA Polyimide film Pick & Place Pad (03 positions min.)
				-G = 20 μ " (0.51 μ m) Gold on contact, Gold flash on tail			-P = Pick & Place Pad (05 positions min.)
							-TR = Tape & Reel (-02 thru -28)
							-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (-02 thru -28)

ALSO AVAILABLE

MOQ Required

Other platings

Notch option



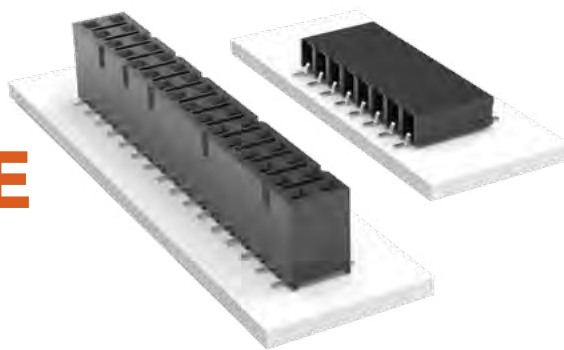
Note:

Some lengths, styles and options are non-standard, non-returnable.

TIGER CLAW™ SURFACE MOUNT SOCKET

(2.54 mm) .100" PITCH • SSM SERIES

8
G b p s



SSM

Mates:

TSW, MTSW,
TST, TSS, ZST, ZSS,
DW, EW, ZW, TSM,
HMTSW, HTSW, TSSH,
BST, HTSS, TLW, MTLW

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Contact Material:

Phosphor Bronze

Plating:

Au or Sn over
50 μ" (1.27 μm) Ni

Current Rating (SSM/TSW):

5.2 A per pin
(2 pins powered)

Voltage Rating:

405 VAC / 572 VDC

Operating Temp Range:

-55 °C to +125 °C with Gold
-55 °C to +105 °C with Tin

Insertion Depth:

SV/DV = (4.34 mm) .171" to
(7.24 mm) .285" or pass-through
from top; (5.56 mm) .219"
plus board thickness minimum
from bottom;

SH/DH = (4.34 mm) .171" to
(6.35 mm) .250"

Normal Force:

125 grams (1.21 N) average

PROCESSING

Lead-Free Solderable:

Yes

-DH Coplanarity:

Less than 28 positions
(0.15 mm) .006" max*

More than 27 positions
(0.20 mm) .008" max*

-SH, -SV, -DV Coplanarity:

(0.15 mm) .006" max*

*(.004" stencil solution
may be available; contact
IPG@samtec.com)

ALSO AVAILABLE

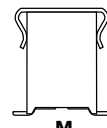
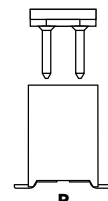
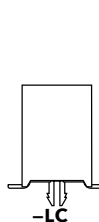
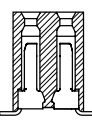
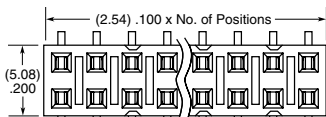
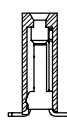
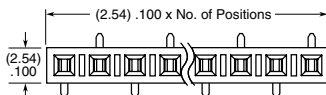
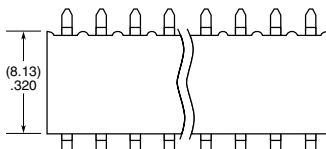
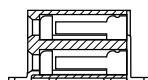
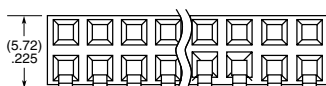
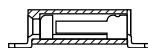
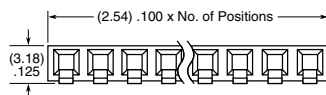
Alignment pin
(MOQ Required)



Note:

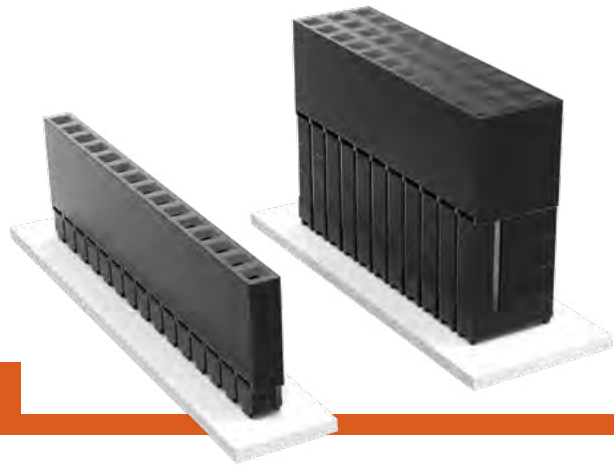
Some lengths, styles and
options are non-standard,
non-returnable.

SSM	1	NO. PINS PER ROW	PLATING OPTION	ROW OPTION	OTHER OPTION
		02 thru 36 (-SV, -SH, -DH)	-F = Gold flash on contact, Matte Tin on tail	-SV = Single Row Vertical Pin	-“XXX” = Polarized Position (-BE not available)
		02 thru 40 (-DV)	-L = 10 μ" (0.25 μm) Gold on contact, Matte Tin on tail	-DV = Double Row Vertical Pin	-BE = Bottom Entry (-DV & -SV only)
			-S = 30 μ" (0.76 μm) Gold on contact, Matte Tin on tail	-SH = Single Row Horizontal Pin	-LC = Locking Clip (-DV & -SV only) Contact Samtec for -DH & -SH
				-DH = Double Row Horizontal Pin	-K = (6.50 mm) .256" DIA Polyimide film Pick & Place Pad (2 positions min.) -DV & -SV only
					-M = Metal Pick & Place Pad (5 positions min.) -DV only
					-P = Plastic Pick & Place Pad (-DV & -SV only) (6 positions min.) Contact Samtec for availability on smaller positions)
					-TR = Tape & Reel (29 positions max.)
					-FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (29 positions max.)



ELEVATED SOCKETS

(2.54 mm) .100" PITCH • ESW/ESQ SERIES



ESW/ESQ

Mates:

TSW, MTSW, EW,
MTLW, TSS, ZSS, TSM,
DW, ZW, HW, TSSH, HTSS

SPECIFICATIONS

Insulator Material:

Black Glass Filled Polyester

Contact Material:

Phosphor Bronze

Plating:

Au or Sn over
50 μ" (1.27 μm) Ni

Current Rating (ESW/TSW):

5.2 A per pin
(2 pins powered)

Current Rating (ESQ/TSW):

5.7 A per pin
(2 pins powered)

Voltage Rating:

550 VAC mated with
TSW or ESQ

Operating Temp Range:

-55 °C to +125 °C with Gold

-55 °C to +105 °C with Tin

Insertion Depth:

(3.68 mm) .145" to

(6.35 mm) .250"

Normal Force:

Standard = 125 grams (4.4 N)

Max Cycles:

100 with 10 μ" (0.25 μm) Au

SERIES	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OTHER OPTION
--------	---	------------------	------------	----------------	------------	--------------

ESW
= Solder Tail

01 thru 36

Specify
**LEAD
STYLE**
from
chart

ESQ
= Square Tail

-L
= 10 μ" (0.25 μm)
Gold contact,
Matte Tin on tail

-S
= Single Row

-D
= Double Row

-LL
= Locking Lead
(Two leads per
strip crimped.
Not available
with single row
1 or 2 positions)

"XXX"
= Polarized

-G
= 20 μ" (0.51 μm)
Gold contact,
Gold Flash on
Balance

-T
= Triple Row
(ESQ only)

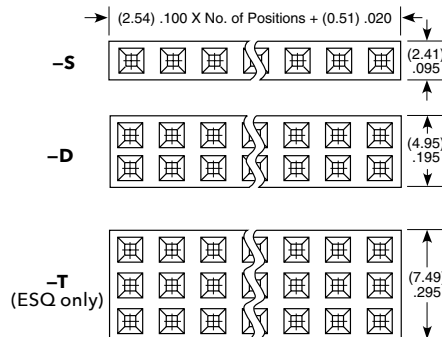
-T
= Matte Tin
(Not available
with LIF contact)

LEAD STYLE			
STANDARD INSERTION FORCE	Low INSERTION FORCE	A	B
- 12	- 37	(2.29) .090	(11.05) .435
- 13	- 38	(7.36) .290	
- 23	- 48	(4.83) .190	(13.59) .535
- 33	- 58	(2.29) .090	(16.13) .635
- 14	- 39	(12.19) .480	(11.05) .435
- 24	- 49	(9.65) .380	(13.59) .535
- 34	- 59	(7.11) .280	(16.13) .635
- 44	- 69	(4.57) .180	(18.67) .735

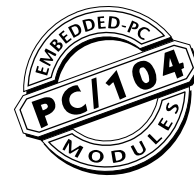
PROCESSING

Lead-Free Solderable:

No, Lead Wave only

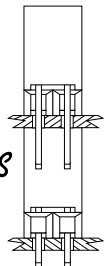


APPLICATIONS



*Self
Nesting
Sockets*

(ESQ SERIES)

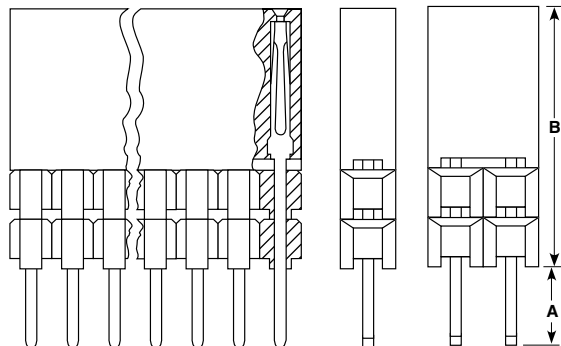


ALSO AVAILABLE

Other Plating
(MOQ Required)

Note:

Some lengths, styles and
options are non-standard,
non-returnable.

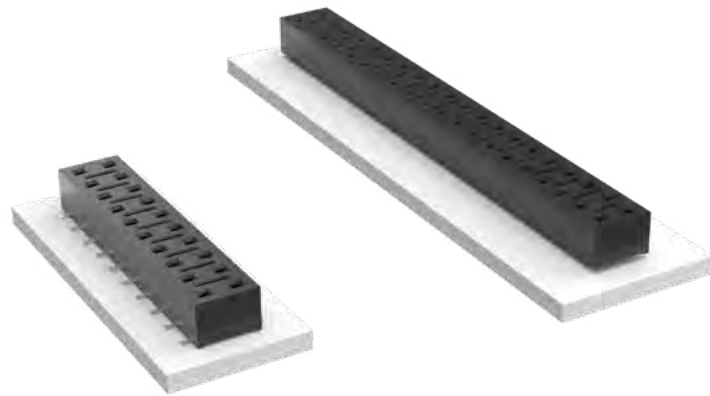


PC/104™ J1/P1 "Stackthrough" Connectors	
Standard Insertion Force	ESQ-132-14-G-D
Low Insertion Force	ESQ-132-39-G-D
PC/104™ J1 "Non-Stackthrough" Connectors	
Standard Insertion Force	ESQ-132-12-G-D
Low Insertion Force	ESQ-132-37-G-D
PC/104™ J2/P2 "Stackthrough" Connectors	
Standard Insertion Force	ESQ-120-14-G-D
Low Insertion Force	ESQ-120-39-G-D

PC/104 is a trademark of the PC/104 Consortium.

COST-EFFECTIVE RELIABLE SOCKET

(2.54 mm) .100" PITCH • HLE SERIES



HLE
Board Mates:
TSW, MTSW, DW, EW,
ZW, TLW, TSM, MTLW, HW

HLE	-	1	NO. PINS PER ROW	-	02	-	PLATING OPTION	-	DV	-	TAIL OPTION	-	OTHER OPTION
-----	---	---	---------------------	---	----	---	-------------------	---	----	---	----------------	---	-----------------

02 thru 50

SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Contact Material:
BeCu
Plating:
Au or Sn over
50 μ " (1.27 μ m) Ni
Current Rating (HLE/TSM):
4.1 A per pin
(2 pins powered)
Voltage Rating:
400 VAC
Operating Temp Range:
-55 °C to +125 °C
Insertion Depth:
(1.78 mm) .070" to
(3.43 mm) .135" pass-through,
or (2.59 mm) .102" min
plus board thickness for
bottom entry

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max (02-20)
(0.15 mm) .006" max (21-50)*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)

ALSO AVAILABLE

Other Platings
(MOQ Required)

Note:
Some lengths, styles and
options are non-standard,
non-returnable.

-F
= Gold flash on
contact,
Matte Tin on tail

-L
= 10 μ " (0.25 μ m)
Gold on contact,
Matte Tin on tail

Leave blank for
Surface Mount
(Requires -BE for
Bottom Entry)

-TE
= Through-hole
Top Entry

-PE
= Through-hole
Pass-through
Entry
(Requires -BE for
Bottom Entry)

-BE
= Bottom Entry
(Not available
with -TE)

-A
= Alignment Pin
(4 positions min.)
Metal or plastic at
Samtec discretion
(Not available with
-TE, -PE & -LC)

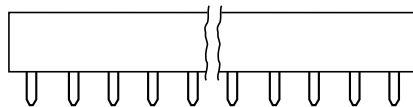
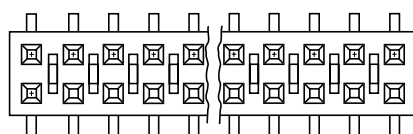
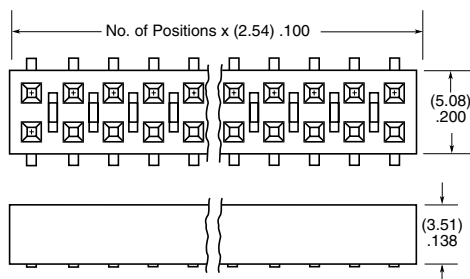
-LC
= Locking Clip
(2 positions min.)
(Not available with -A)
(Manual placement
required)

-K
= (6.50 mm)
.256" DIA
Polyimide Film
Pick & Place Pad
(3 positions min.)
Not available
with -TE or
-PE tail option

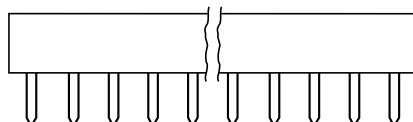
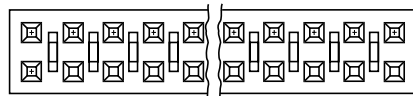
-P
= Metal Pick
& Place Pad
(3 positions min.)

-TR
= Tape & Reel
(29 positions max.)

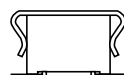
-FR
= Full Reel
Tape & Reel
(must order max.
quantity per reel;
contact Samtec for
quantity breaks)



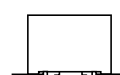
-PE



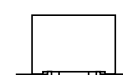
-TE



-P



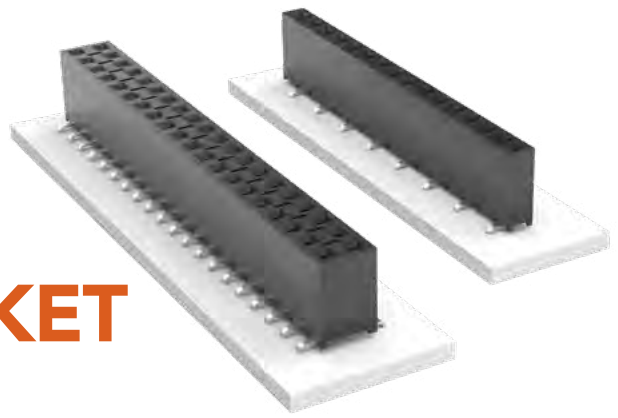
-LC



-A

TIGER CLAWTM PASS-THROUGH SOCKET

(2.54 mm) .100" PITCH • BCS SERIES



BCS

Mates:

TSW, MTSW, HTSW,
HMTSW, TSS, ZSS, DW, EW,
ZW, HW, TSM, MTLW, PHT

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Contact Material:

Phosphor Bronze

Plating:

Au or Sn over
50 μ " (1.27 μ m) Ni

Current Rating (BCS/TSW):

4.6 A per pin
(2 pins powered)

Voltage Rating:

475 VAC
(-TE/-DE/-PE mated with TSM)
450 VAC
(-HE mated with TSW)

Operating Temp Range:

-55 °C to +125 °C

Insertion Depth:

(4.34 mm) .171" to
(7.24 mm) .285" from top,
(5.64 mm) .222" plus board
thickness minimum from bottom.
-HE is (4.34 mm) .171"
to (6.35 mm) .250"

PROCESSING

Lead-Free Solderable:

Yes

ALSO AVAILABLE

Other Platings
(MOQ Required)

BCS	1	NO. PINS PER ROW	PLATING OPTION	ROW OPTION	ENTRY OPTION	OTHER OPTION
-----	---	------------------	----------------	------------	--------------	--------------

01 thru 50

-F
= Gold flash
on contact,
Matte Tin on tail

-L
= 10 μ " (0.25 μ m)
Gold on contact,
Matte Tin on tail

-S
= Single

-D
= Double

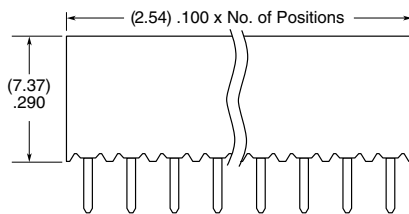
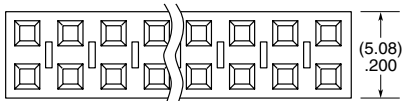
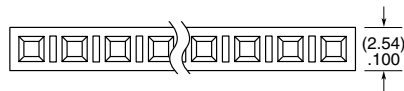
-TE
= Top Entry

-DE
= Top Entry
(For Bottom Entry
specify -DE-BE)
Cannot be used with
plated through-holes

-PE
= Pass-through Entry
(For Bottom Entry
specify -PE-BE)

-HE
= Horizontal Entry

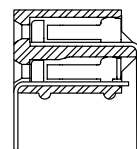
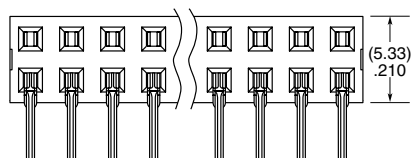
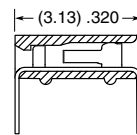
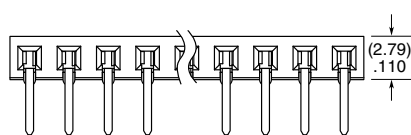
-"XXX"
= Polarized Position
(-BE not available)



-TE

-DE

-PE



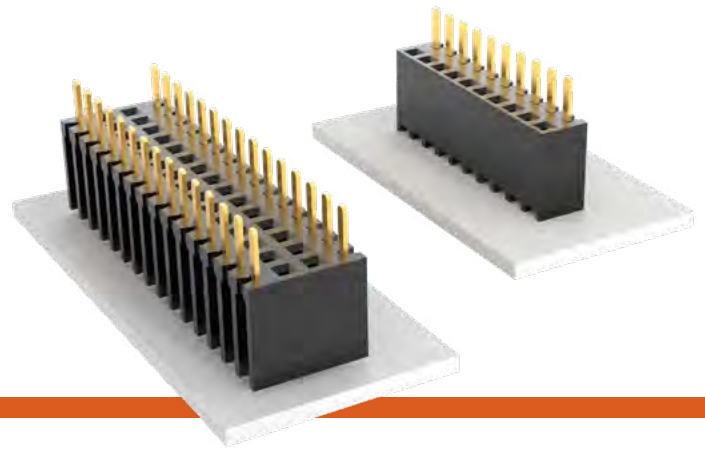
-HE

Note:

Some lengths, styles and
options are non-standard,
non-returnable.

BOTTOM MOUNT SOCKET STRIPS

(2.54 mm) .100" PITCH • BSW SERIES



BSW

Mates:

TSW, MTSW, HTSW,
MTLW, TSM, EW, ZW,
HW, DW, PHT

FEATURES

- Bottom mount socket strips accept .025" SQ terminals.
- Ideal for soldering and plugging from the same side of the board.
- For low-profile connections and high temperature soldering.

SPECIFICATIONS

Insulator Material:

Black Thermoplastic

Insulation Resistance:

5000 MW min

Contact Material:

Phosphor Bronze

Plating:

Au or Sn over

50 μ" (1.27 μm) Ni

Operating Temp Range:

-55 °C to +125 °C with Gold

-55 °C to +105 °C with Tin

Withstanding Voltage:

1000 VRMS @ 60 Hz

Insertion Depth:

(3.68 mm) .145" to

(6.35 mm) .250"

PROCESSING

Lead-Free Solderable:

Wave only

ALSO AVAILABLE

Other Plating
(MOQ Required)

Note:

Some lengths, styles and options are non-standard, non-returnable.

BSW	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OTHER OPTION
-----	---	------------------	------------	----------------	------------	--------------

02 thru 36

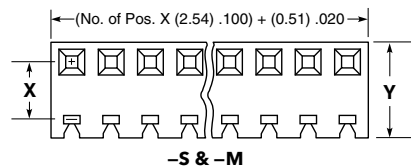
-04
= Standard Lead
-24
= Low Insertion Force

-L
= 10 μ" (0.25 μm)
Gold contact,
Matte Tin on tail
-G
= 20 μ" (0.51 μm)
Gold contact,
Gold Flash on tail

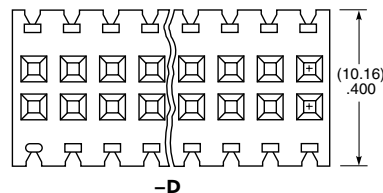
-T
= Matte Tin
(Not available with
Low Insertion Force)

-S
= Single Row
-M
= Single Row
More Plug Space
-D
= Double Row

-S
= Standoffs
for single
and double
rows only
(-S & -D only)

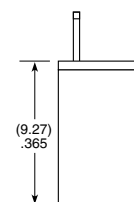
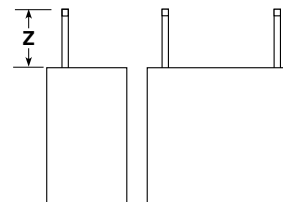
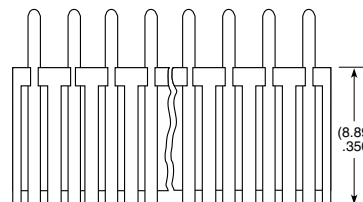


ROW OPTION	X	Y
-S	(2.54) .100	(5.08) .200
-M	(3.81) .150	(6.35) .250



ROW OPTION	Z
-S*	(4.31) .170
-M	(3.43) .135
-D*	(4.32) .170

*Less (0.38 mm) .015" with standoffs

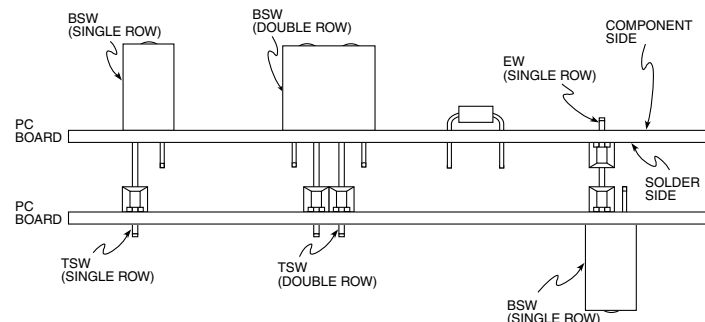


-S & -M

-D

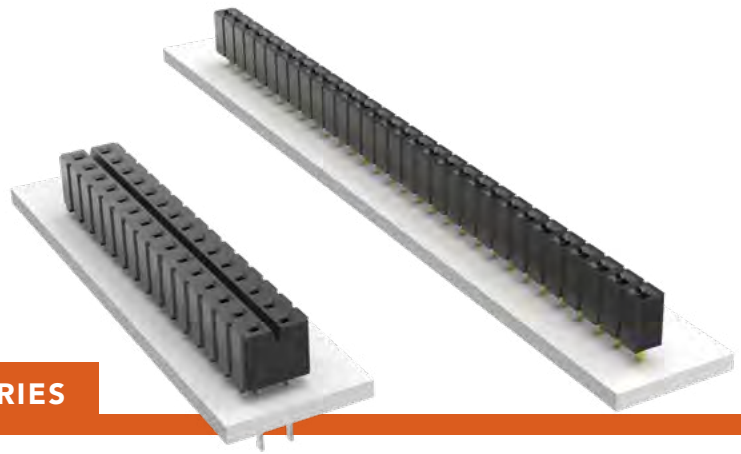
-S
STANDOFF

APPLICATIONS



LOW-PROFILE SOCKET STRIPS

(2.54 mm) .100" PITCH • SLW/CES SERIES



SLW

Mates:

TLW, TSW, MTLW, MTSW,
HW, EW, ZW, HTSW,
HMTSW, TSM

CES

Mates:

TLW, TSW, MTLW,
MTSW, HW, EW, ZW,
DW, HTSW, PHT, HMTSW



SPECIFICATIONS

Insulator Material:

Black G.F. Polyester

Contact Material:

Phosphor Bronze

Plating:

Au or Sn over
50 μ " (1.27 μ m) Ni

SLW Current Rating (SLW/TSW):

5.2 A per pin
(2 pins powered)

CES Current Rating (TSW/CES):

5.5 A per pin
(2 pins powered)

Voltage Rating:

SLW: 406 VAC
CES: 400 VAC

Operating Temp Range:

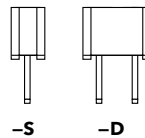
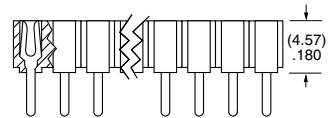
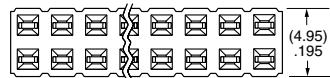
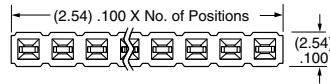
-55 °C to +125 °C with Gold
-55 °C to +105 °C with Tin

Insertion Depth:

SLW: (2.16 mm) .085" to
(2.92 mm) .115"
CES: (2.62 mm) .103" to
(4.06 mm) .160"

Lead-Free Solderable:

No, Lead Wave only



-S -D

SLW

- 1

NO. PINS
PER ROW

- 01

PLATING
OPTION

ROW
OPTION

01 thru 50

-F

= Gold flash on contact,
Matte Tin on tail

-S

= Single Row

-L

= 10 μ " (0.25 μ m) Gold on contact,
Matte Tin on tail

-D

= Double Row

-G

= 20 μ " (0.51 μ m) Gold on contact,
Gold flash on balance

-T

= Matte Tin

PROCESSING

Lead-Free Solderable:

No, Lead Wave only

CES

- 1

NO. PINS
PER ROW

LEAD
STYLE

PLATING
OPTION

ROW
OPTION

RA
OPTION

01 thru 50

Specify
LEAD
STYLE
from
chart

-L

= 10 μ " (0.25 μ m)
Gold contact,
Matte Tin on tail

-S

= Single Row

-D

= Double Row

-RA

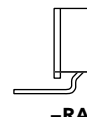
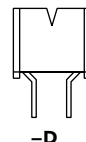
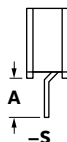
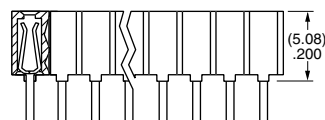
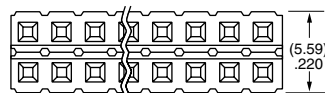
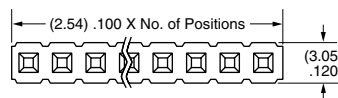
= Right-angle
version
(Style -02 only
Single Row only)

-T

= Matte Tin

ALSO AVAILABLE

Other Plating
(MOQ Required)



-S

-D

-RA

Note:

Some lengths, styles and
options are non-standard,
non-returnable.

SHUNTS & JUMPERS

(2.54 mm) .100" PITCH • SNT/MNT/2SN/SNM/PK/JL SERIES



SNT/MNT

Mates:

TSW, HTSW, MTSW,
HMTSW, TLW, DW, EW,
ZW, HW, TSM, BST, PHT

2SN

Mates:

TMMH, TMM,
MTMM, MMT, TW,
LTMM, ZLTMM, TSH, EHT

SNM

Mates:

TMS, MTMS, DWM

SPECIFICATIONS

SNT

Insulator Material:

Glass Filled Polyester

Contact Material:

Phosphor Bronze

Current Rating (SNT/TSW):

4.3 A per pin

(1 pin powered per row)

Operating Temp Range:

-55 °C to +125 °C

Insertion Depth:

(4.32 mm) .170" minimum

Lead Size accepted:

(0.64 mm) .025" SQ

MNT

Same as SNT except:

Current Rating (MNT/TSM):

3.9 A per pin

(1 pin powered per row)

Working Voltage:

450 VAC

2SN

Same as SNT except:

Insertion Depth:

(2.29 mm) .090" minimum

Lead Size accepted:

(0.51 mm) .020" SQ

SNM

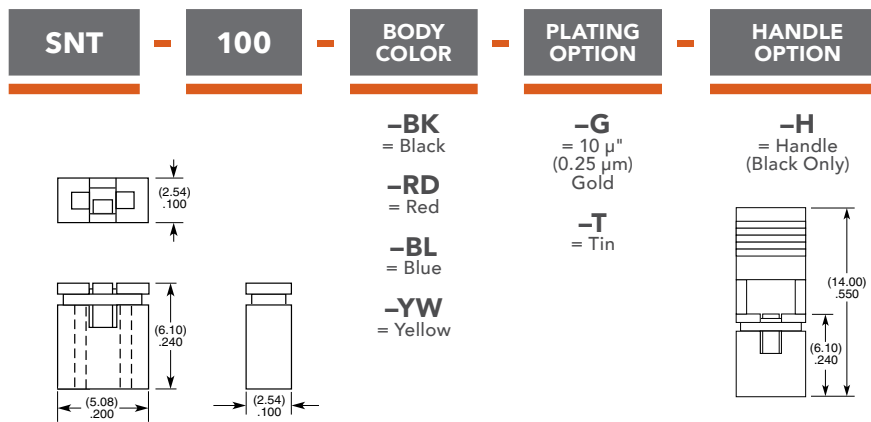
Same as SNT except:

Insertion Depth:

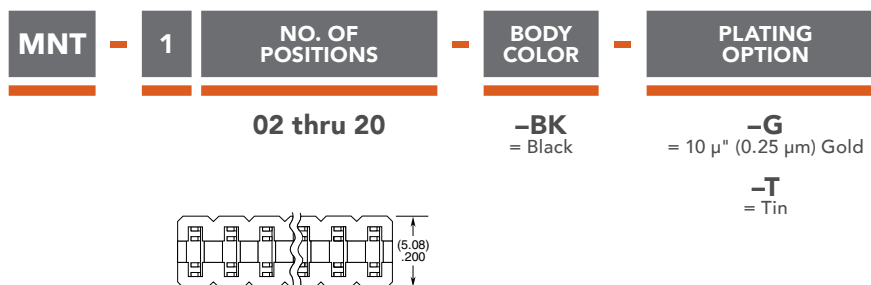
(3.43 mm) .135" minimum

Max Processing Temp:

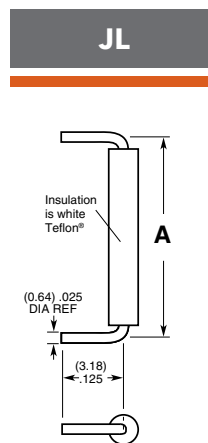
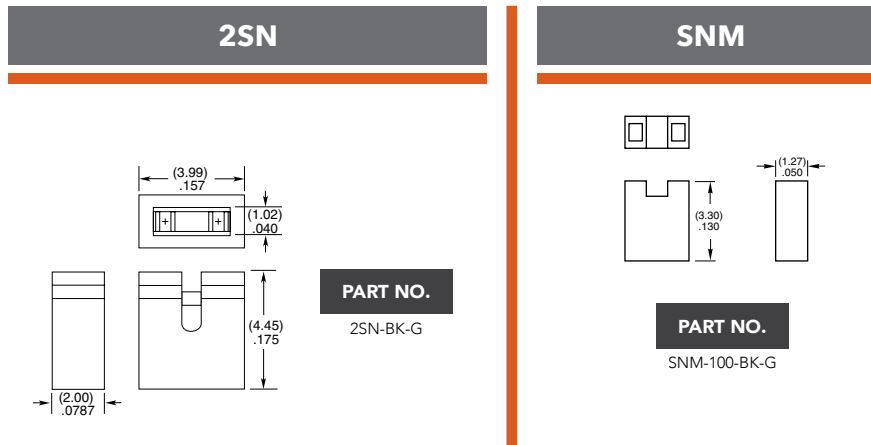
Not recommended for IR/VIP



Note:
Other Gold plating options available.



Note:
Some lengths, styles and options
are non-standard, non-returnable.



PART NO.	A
JL-100-25-T	(2.54) .100
JL-250-25-T	(6.35) .250
JL-400-25-T	(10.16) .400

Note:
For complete
specifications see
www.samtec.com?JL



PART NO.	A	B
PK-01-06	(0.64) .025 SQ	(5.84) .230
PK-01-07	(0.51) .020 SQ	(3.18) .125

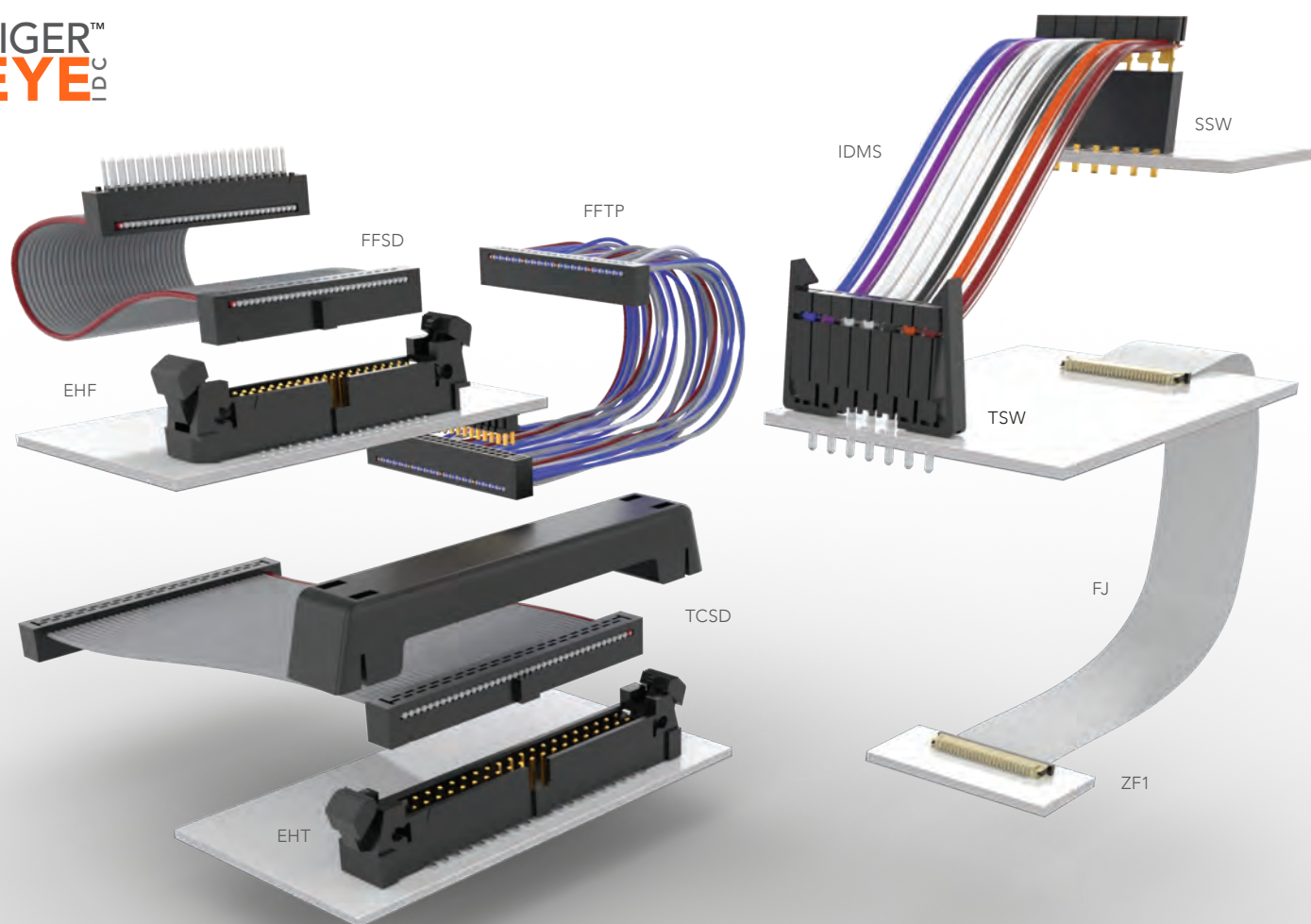
Insulator Material:
Natural Thermoplastic

Note:
Order per wheel.
6 pins per wheel.

IDC/FLAT FLEXIBLE CABLE SYSTEMS

TIGER EYE™ CONTACTS • MULTIPLE PITCHES • LOW PROFILE • SHROUDED EJECTOR TERMINALS

TIGER
EYE
IDC



294-295

FLEX JUMPERS

0.50 mm (.0197") Pitch FFC Jumper & Sockets (FJH, ZF5S)	294
1.00 mm (.0394") Pitch FFC Jumper & Sockets (FJ, ZF1, FC1)	295

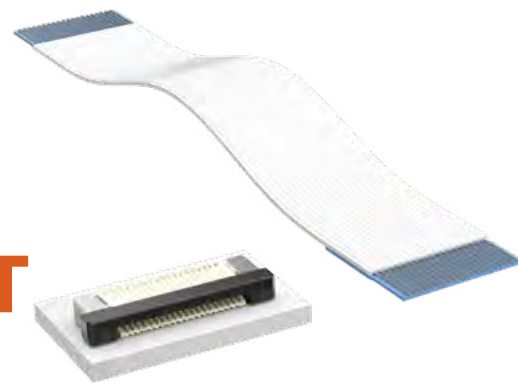
296-307

IDC ASSEMBLIES AND HEADERS

.100" (2.54 mm) Pitch (IDSX, IDMX, EJH, TST, HTST, ZST)	296-299
2.00 mm (.0787") Pitch (TCSD, TCMD, EHT, EC2, STMM, ZSTMM, ETMM)	300-303
.050" (1.27 mm) Pitch (FFSD, FFMD, FFTP, FMTP, EHF, SHF, ESHF)	304-307

FLAT FLEXIBLE CABLE (FFC) JUMPER & SOCKET

(0.50 mm) .0197" PITCH • FJH/ZF5S SERIES



FJH

Mates:
ZF5S

SPECIFICATIONS

Conductor:
Tin Plated Copper
Conductor Resistance:
1000 Ω /km max
Insulation Resistance:
10 M Ω /km min
(conductor-to-conductor)
Dielectric Test:
400 VAC during 1 minute
(conductor-to-conductor)
Temperature Rating:
-30 °C to +80 °C
Voltage Rating:
60 VAC

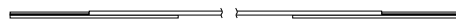
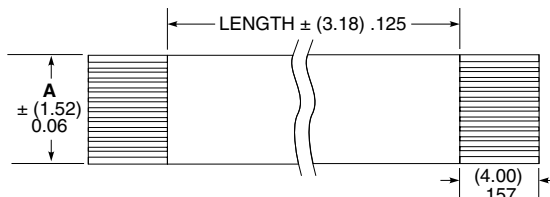
ALSO AVAILABLE

Other Platings
(MOQ Required)

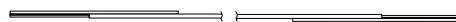
Notes:
Stiffener color will be blue or black at Samtec's discretion.
Some sizes, styles and options are non-standard, non-returnable.

FJH	NO. OF POSITIONS	STYLE	LENGTH	STRIP LENGTH
	-10, -15, -20, -25, -30, -40, -43, -50 (Standard sizes)	-D = Double End -R = Reversed End	Length in inches -03.00 = (76.2 mm) 3.00" -06.00 = (152.4 mm) 6.00" -12.00 = (304.8 mm) 12.00" -24.00 = (609.6 mm) 24.00" (Standard Lengths)	-4 = (4.00 mm) .157"

NO. OF POSITIONS	A
-10	(5.50) .217
-15	(8.00) .315
-20	(10.50) .413
-25	(13.00) .512
-30	(15.50) .610
-40	(20.50) .807
-43	(22.00) .866
-50	(25.50) 1.00



-D STYLE



-R STYLE

ZF5S

Mates:
FJH

SPECIFICATIONS

Insulator Material:
Natural LCP
Contact Material:
Phosphor Bronze
Plating:
Sn over 50 μ " (1.27 μ m) Ni
Weld Tab:
Phosphor Bronze
Operating Temp Range:
-55 °C to +105 °C
Current Rating:
1.8 A per pin
(1 pin powered)

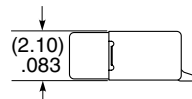
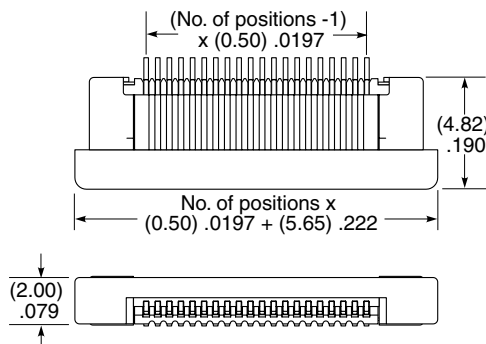
PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max (10-30)
(0.15 mm) .006" max (40-50)*
*(.004" stencil solution may be available; contact IPG@samtec.com)

Note:
Some sizes, styles and options are non-standard, non-returnable.

ZF5S	NO. OF POSITIONS	LEAD STYLE	PLATING OPTION	WT	OPTION
	-10, -15, -20, -25, -30, -40, -43, -50 (Standard sizes)	-01 = Contact Bottom	-T = Matte Tin	-WT = Weld Tab	-K = (3.00 mm) .118" DIA Polyimide Film Pick & Place Pad -TR = Tape & Reel -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks)

NO. OF POSITIONS	A
-10	(5.50) .217
-15	(8.00) .315
-20	(10.50) .413
-25	(13.00) .512
-30	(15.50) .610
-40	(20.50) .807
-43	(22.00) .866
-50	(25.50) 1.00



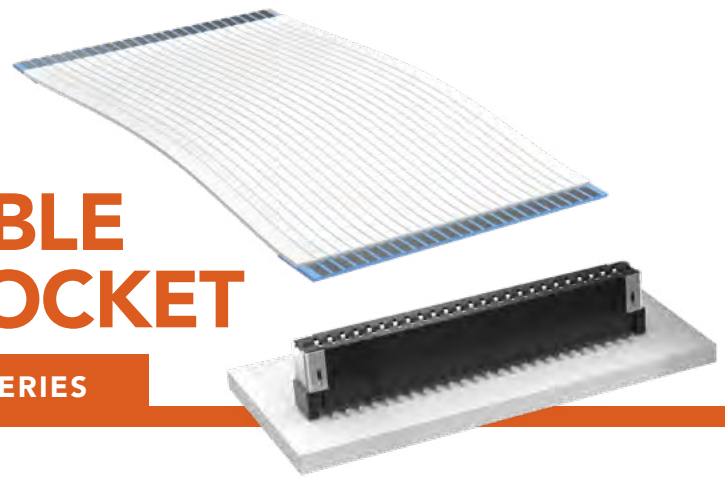
ALSO AVAILABLE

MOQ Required

Vertical
Contact top
Other positions

FLAT FLEXIBLE CABLE (FCC) JUMPER & SOCKET

(1.00 mm) .0394" PITCH • FJ/ZF1/FC1 SERIES



FJ

Mates:
FC1, ZF1

ZF1/FC1

Mates:
FJ

SPECIFICATIONS

FJ

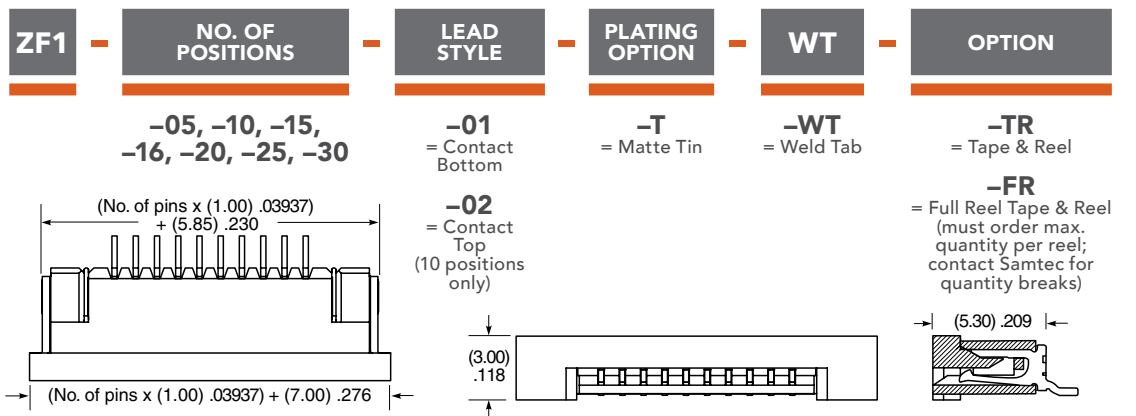
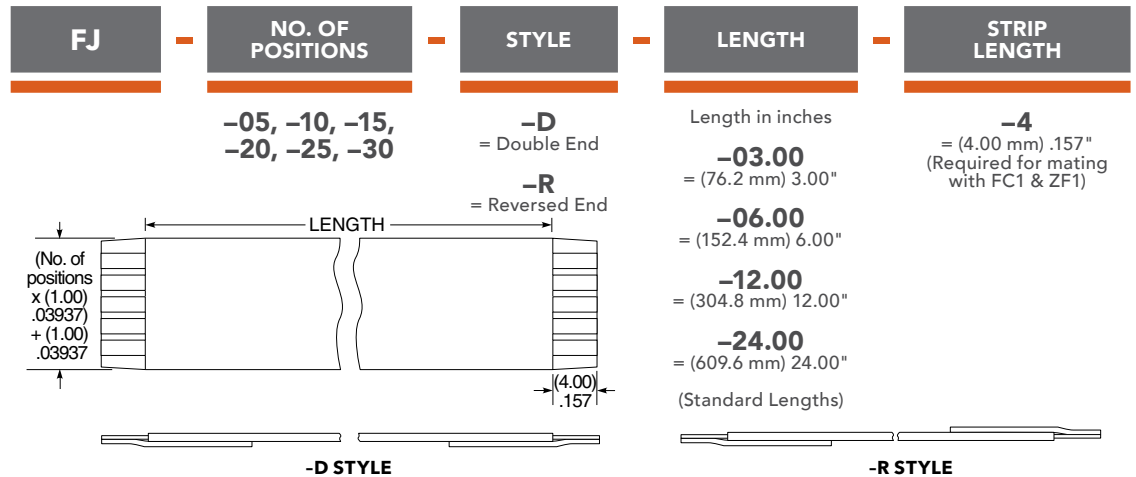
Conductor:
Tin Plated Copper
Conductor Resistance:
300 Ω /km max
Insulation Resistance:
10 M Ω /km min
(conductor-to-conductor)
Dielectric Test:
400 VAC during 1 minute
(conductor-to-conductor)
Temperature Rating:
-30 °C to +80 °C
Voltage Rating:
300 VAC

ZF1

Insulator Material:
Liquid Crystal Polymer
Contact Material:
Phosphor Bronze
Plating:
Sn over 40 μ " (1.02 μ m) Ni
Weld Tab: Phosphor Bronze
Operating Temp Range:
-55 °C to +105 °C

FC1

Insulator Material:
Liquid Crystal Polymer
Contact Material:
Phosphor Bronze
Plating:
Sn over 50 μ " (1.27 μ m) Ni
Operating Temp Range:
-55 °C to +105 °C
Max Cycles:
25 with FJ



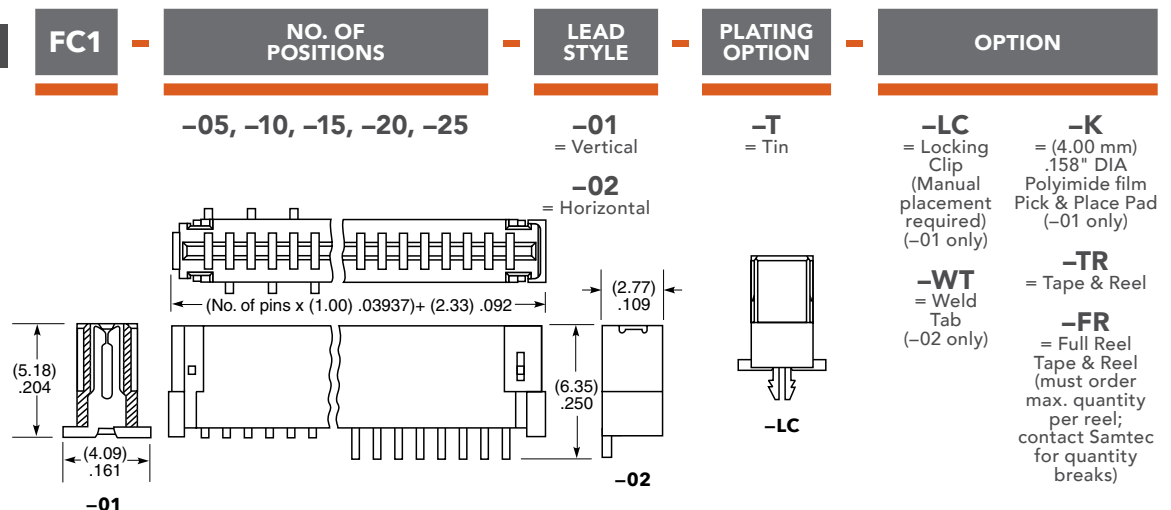
PROCESSING

ZF1/FC1

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max

Notes:
FJ Stiffener color will be blue or black at Samtec's discretion.

Some sizes, styles and options are non-standard, non-returnable.



samtec.com?FJ, samtec.com?ZF1 or samtec.com?FC1

F-221

SLIM BODY FLAT RIBBON IDC CABLES

(2.54 mm) .100" PITCH • IDSS/IDSD/IDMS/IDMD SERIES



IDSS/IDMS/IDMD

Mates:

TSW, MTSW, TSM, EJH,
PHT, HMTSW, HTSW,
HW, DW, EW, ZW, MTLW

IDSD

Mates:

TST, HTST, ZST, BST, EJH

SERIES	ROW OPTION	NO. PINS PER ROW
IDM = Standard Tail Male Plug	S = Single	-02 thru -32 = IDMS/IDMD
IDS = Socket	D = Double (Color coded cable Not available for 31 thru 36 pins/row. See -G option.)	-02 thru -36 = IDSS/IDSD

SPECIFICATIONS

Insulator Material:

Black Glass Filled Polyester

Contact (IDSS/IDSD):

BeCu

Terminal (IDMS/IDMD):

Phosphor Bronze

Plating:

Au over 50 μ " (1.27 μ m) Ni or
Sn over 100 μ " (2.54 μ m) Cu or
50 μ " (1.27 μ m) Ni

Wire:

28 AWG 7/36 stranded

Tinned Copper

Current Rating (IDSD/TST):

3.4 A per pin
(2 pins powered)

Current Rating (IDMD):

3 A per pin
(2 pins powered)

Temperature Range:

-20 °C to +105 °C

(Rainbow Cable)

-40 °C to +105 °C

(Gray Cable)

Voltage Rating:

425 VAC/600 VDC

Lead Size Range:

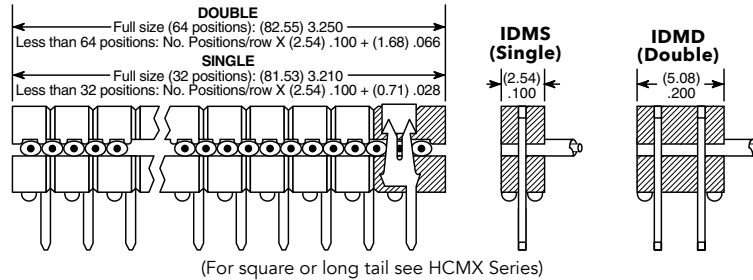
(0.56 mm) .022" SQ to

(0.71 mm) .028" SQ

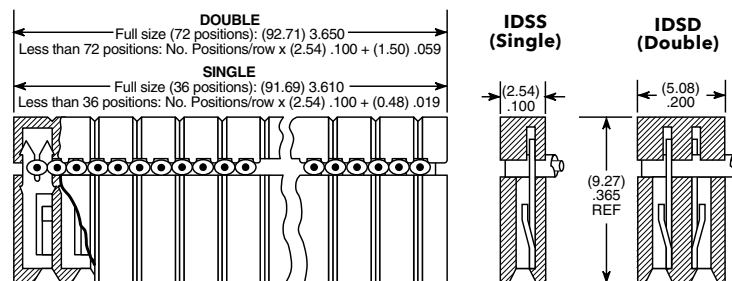
Lead Insertion Depth:

(5.59 mm) .220" to

(6.22 mm) .245"



IDMX shown



IDSX shown

ALSO AVAILABLE

Molded-To-Position IDC Assemblies

Low Profile

Skinny side locks

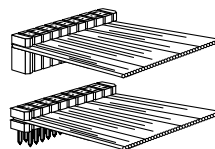
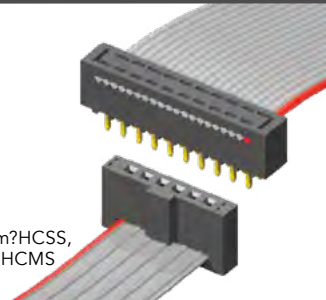
Dual beam contacts

Single and double row

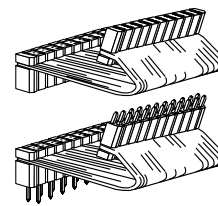
(6.35mm) .025" square and

(5.84mm) .230" length tail available

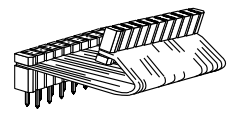
Visit samtec.com?HCSD, samtec.com?HCSS,
samtec.com?HCMCD or samtec.com?HCMS
for more detailed information.



Single End (-S)



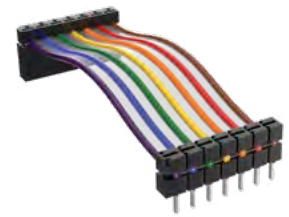
Double End (-D)



Transfer End (-T)

Note:

This Series is non-standard,
non-returnable.

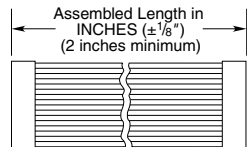


END ASSEMBLY

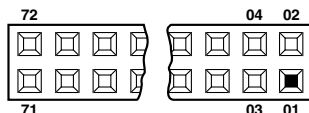
-S
= Single End
(Socket or Male Plug on one end)

-D
= Double End
(Socket or Male Plug on each end)

-T
= Transfer End
(Male Plug on one end with socket on other.
Begin part number with IDM)



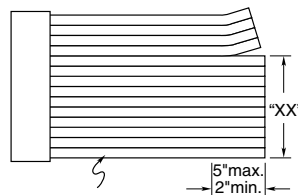
Assembled Length ("XX.XX")



Polarized (-P "XX")

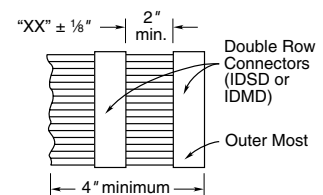
-ST8	1/8" (3.18)
-ST4	1/4" (6.35)
-ST2	1/2" (12.70)
-ST3	3/8" (9.53)

Stripped & Tinned (-ST "X")

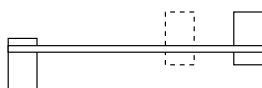


Breakout starts with
Number 1 lead indicated
by brown wire or red stripe.
Shown on top side.

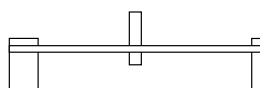
Breakout (-B "X")



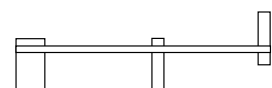
Daisy Chain Single (-S "XX")



Reverse (-R)



Middle Reverse (-M)



Outside Reverse (-O)

ASSEMBLED LENGTH

-"XX.XX"
= Assembled Length

OPTION

-T
= Tin Plating
(Both Ends)

-C
= Tin IDS,
10 μ " (0.25 μ m) Gold IDS
(-T End Assembly Required)

-A
= Tin IDS,
10 μ " (0.25 μ m) Gold IDM
(-T End Assembly Required)

-P "XX"
= Polarized
Specify "XX" as position.
For Double the same position
will be polarized on both ends.
(Not available on IDM unless transfer,
then only the socket is polarized.)

-G
= Gray Cable
Specify -G for Gray cable.
Gray cable has one red edge.
IDS and IDMS uses
(2.54 mm) .100" centerline cable.
IDSD and IDMD uses
(1.27 mm) .050" centerline cable.
Cable is 28 AWG 7/36 copper wire.
Standard cable is same as
above except color

-ST "X"
= Stripped & Tinned
(Specify Suffix from table)
(All dimensions are $\pm 1/16$ " (1.59 mm))
(Not available in 28 positions and higher)

-B "XX"
= Breakout
(Specify "XX" as number of
conductors to be broken out)
(Breakout starts with Number 1 lead
indicated by brown wire or red stripe.
Shown on top side)

-RW
= Reversed Wiring
(#1 wire opposite position #1)

-S "XX"
= Daisy Chain, Single
(When mating double row
connector with two single row
connectors, the outer most single will
be connected to Conductor #1 and
the inside single to Conductor #2)

-D "XX"
= Daisy Chain, Double

-W "XX"
= Wiring Reverse Daisy Chain, Single
(Same as -S "XX" except outer strip
connected to Conductor #2 and inside
strip connected to Conductor #1)

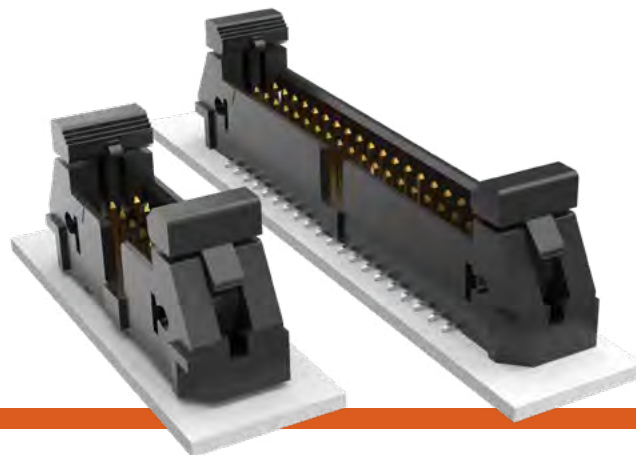
-R
= Reverse

-M
= Middle Reverse
(Requires -SXX, -WXX or -DXX)

-O
= Outside Reverse
(Requires -SXX, -WXX or -DXX)

SHROUDED IDC EJECTOR HEADERS

(2.54 mm) .100" PITCH • EJH SERIES



EJH

Mates:

IDSD (EJH-01 Required),
HCSD (EJH-02 Required)

SPECIFICATIONS

Insulator Material:

-01=Black LCP

-02=Natural LCP

Terminal Material:

Phosphor Bronze

Plating:

Sn or Au over 50 μ " (1.27 μ m) Ni

Operating Temp Range:

-55 °C to +125 °C

PROCESSING

Lead-Free Solderable:

Yes

SMT Lead Coplanarity:

(0.10 mm) .004" max

ALSO AVAILABLE

MOQ Required

Other sizes

Other platings

EJH	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	D	TAIL OPTION	OTHER OPTION
-----	---	---------------------	---------------	-------------------	---	----------------	-----------------

05, 07,
08, 10,
13, 15,
17, 20, 25
(Standard sizes)

-01
= Standard
(Mates to IDSD)

-02
= Extended
(Mates to HCSD)

-F
= Gold flash
on post,
Matte Tin on
tail

-L
= 10 μ "
(0.25 μ m)
Gold on post,
Matte Tin on
tail

-SM
= Surface
Mount

-TH
= Through-hole

-RA
= Right-angle

- "XX"
= Polarized
Position

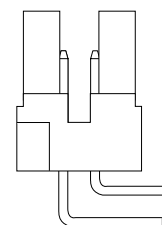
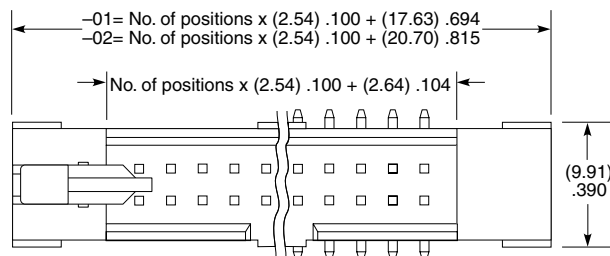
-LC
= Locking Clip
(-SM only)
(Manual
placement
required)

-K
= .475"
(12.00 mm)
DIA
Polyimide
Film Pick &
Place Pad
(-SM only)

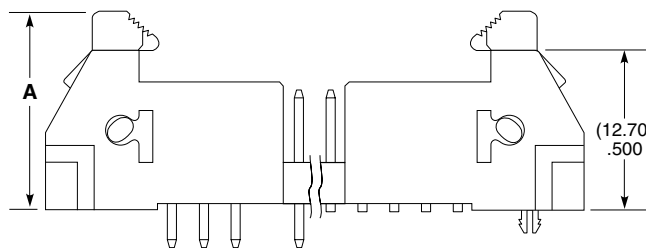
-P
= Pick &
Place Pad
(-SM only)

-TR
= Tape &
Reel
(-SM only)
(25 position
not available)

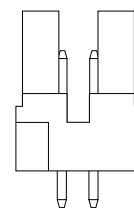
-FR
= Full Reel
Tape & Reel
(must order
max. quantity
per reel;
contact
Samtec for
quantity
breaks)
(-SM only)
(25 position
not available)



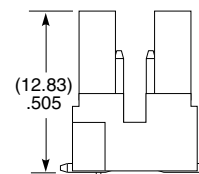
-RA OPTION



-LC OPTION



-SM OPTION
(Latch removed for clarity)



-SM OPTION

LEAD STYLE	A
-01	(16.88) .665
-02	(17.39) .685

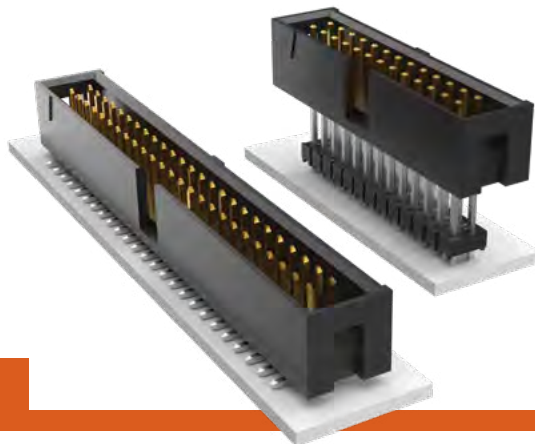
Note:

Some lengths, styles and
options are non-standard,
non-returnable.

FLEX STACK

SHROUDED .025" SQ POST IDC HEADERS

(2.54 mm) .100" PITCH • TST/HTST/ZST SERIES



TST/HTST/ZST

Mates:
IDSD, HCSD

SPECIFICATIONS

Insulator Material:

TST, ZST=Black Glass
Filled Polyester
HTST=Natural LCP

Insulation Resistance:

5000 MΩ min

Terminal Material:

Phosphor Bronze

Plating:

Au or Sn over
50 μ" (1.27 μm) Ni

Current Rating (IDSD/TST):

3.4 A per pin

(2 pins powered)

Operating Temp Range:

-55 °C to +125 °C with Gold
-55 °C to +105 °C with Tin

Voltage Rating:

425 VAC/600 VDC

PROCESSING

Lead-Free Solderable:

HTST=Yes

TST, ZST= No, Lead Wave only

SMT Lead Coplanarity:

(0.10 mm) .004" max (05-15)
(0.15 mm) .006" max (17-36)*

*(.004" stencil solution
may be available; contact
ipg@samtec.com)

SERIES	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	ROW OPTION	OTHER OPTION
--------	---	------------------	------------	----------------	------------	--------------

TST
= Cable Strip

HTST
= High Temp
Cable Strip

**05, 07, 08, 10,
12, 13, 15, 17,
20, 25, 32, 36**
(Standard sizes)

**Specify
LEAD
STYLE
from
chart**

-F
= Gold flash
on post,
Matte Tin
on tail
(Not available
on -DV)

-L
= 10 μ" (0.25 μm)
Gold on post,
Matte Tin
on tail

-T
= Matte Tin

-D
= Double Row
Through-hole
(lead style -01,
-02 & -03 only)

-DV
= Double Row
Surface Mount
(lead style
-01 only)
(HTST only)

-D-RA
= Double Row
Right-angle
(lead style -04
& -05 only)

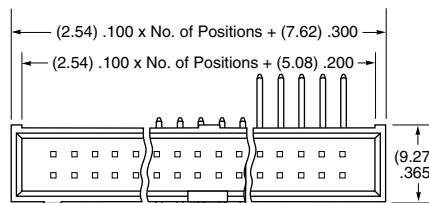
Surface Mount
(lead style
-01 only)
(HTST only)

-P
= Pick &
Place Pad

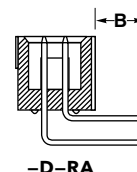
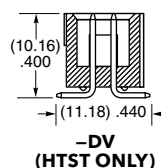
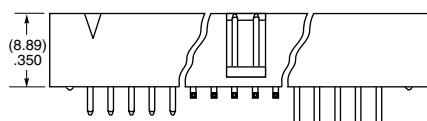
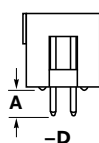
-TR
= Tape & Reel

-FR
= Full Reel
Tape & Reel
(must order max.
quantity per reel;
contact Samtec
for quantity
breaks)

LEAD STYLE	THROUGH-HOLE (A)
-01	(2.92) .115
-02	(4.19) .165
-03	(14.35) .565



-D -DV -D-RA



LEAD STYLE	RIGHT-ANGLE (B)
-04	(3.30) .130
-05	(5.84) .230

ZST	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	D	BODY HEIGHT
-----	---	------------------	------------	----------------	---	-------------

ALSO AVAILABLE
MOQ Required

Other platings & sizes

Alignment Pins

Single Row

Locking Leads

Polarized

**05, 07, 08, 10,
12, 13, 15, 17,
20, 25, 32, 36**
(Standard sizes)

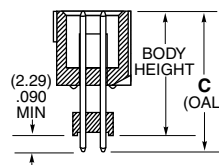
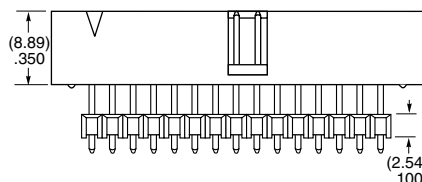
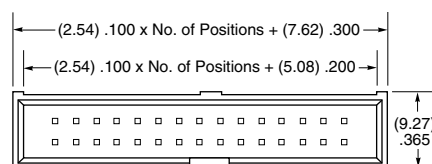
**Specify
LEAD
STYLE
from
chart**

-F
= Gold flash on post,
Matte Tin on tail

-L
= 10 μ" (0.25 μm)
Gold on post,
Matte Tin on tail

-T
= Matte Tin

-"XXXX"
= Body Height



LEAD STYLE	C (OAL)	MAX BODY HEIGHT
-01	(16.00) .630	(13.72) .540
-02	(18.54) .730	(16.26) .640
-03	(21.08) .830	(18.80) .740
-04	(23.62) .930	(21.34) .840
-05	(26.16) 1.030	(23.88) .940
-06	(28.70) 1.130	(26.42) 1.040
-07	(31.24) 1.230	(28.96) 1.140
-08	(33.78) 1.330	(31.50) 1.240
-09	(36.32) 1.430	(34.04) 1.340

Note:

For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors. Contact ipg@samtec.com for more information.

Note:
Some lengths, styles and
options are non-standard,
non-returnable. ZST is
non-standard, non-returnable.

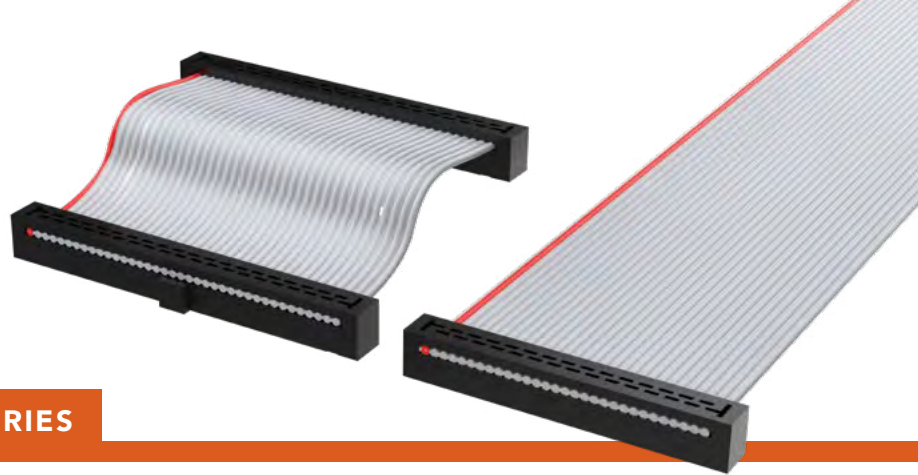
samtec.com?TST, samtec.com?HTST or samtec.com?ZST

F-221 (Rev 01Mar21)

Unless otherwise approved in writing by Samtec, all parts and components are designed and built according to Samtec's specifications which are subject to change without notice.

TIGER EYE™ IDC SOCKET CABLE

(2.00 mm) .0787" PITCH • TCSD SERIES



TCSD

Mates:

TMM, TMMH, STMM,
MMT, TW, MTMM, EHT,
ETMM (-SR), ZSTMM

SPECIFICATIONS

Insulator Material:

Black Glass Filled Polyester

Contact:

BeCu

Plating:

Au or Sn over
50 μ" (1.27 μm) Ni

Wire:

28 AWG 7/36 Stranded,
Tinned, Copper with
Gray PVC Insulator

Current Rating

(TCSD/STMM):
2.8 A per pin
(2 pins powered)

Operating Temp Range:

-40 °C to +105 °C

Lead Size Accepted:

(0.48 mm) .019" to

(0.53 mm) .021"

Insertion Depth:

(2.87 mm) .113" to
(3.17 mm) .125"

SERIES	NO. PINS PER ROW	END OPTION	OVERALL LENGTH	01	PLATING OPTION	N	OTHER OPTION
--------	------------------	------------	----------------	----	----------------	---	--------------

TCSD
= Socket
Strip

-04, -05,
-07, -08,
-10, -12,
-13, -15,
-17, -20,
-22, -25
(Standard
sizes)

-S
= Single
End

-D
= Double
End

-"XX.XX"
= Assembled
Length

Leave blank
for standard
plating 30 μ"
(0.76 μm)
Gold on
contact area

-F
= Gold flash
on contact

-N
= Notch
Polarization

-P "XX"
= Position
Polarization
(Specify "XX" as
position number.
Same position
will be polarized
on both ends)

-B "XX"
= Breakout
(Specify "XX"
as number of
conductors to
be broken out)

-RW
= Reverse Wiring
(Blue or black
wire opposite
position #1)

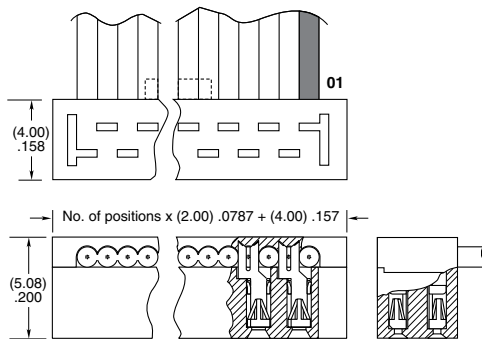
-D "XX"
= Daisy Chain

-SR
= Strain Relief
(Not available
with -O, -M, -R,
-DXX or -BXX)

-R
= Reverse

-M
= Middle Reverse
(Requires -DXX)

-O
= Outside
Reverse
(Requires -DXX)



No. of positions x (2.00) .0787 + (4.00) .157

ALSO AVAILABLE

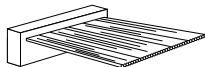
MOQ Required

Other sizes

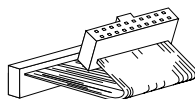
Other platings

POLARIZING KEY

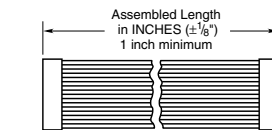
Specify PK-01-07 for polarizing key
(Available in wheels of six each).
Also polarizes SMM Series
socket strips.



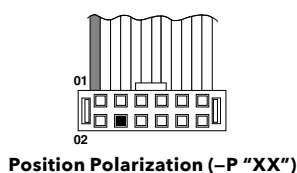
Single End (-S)



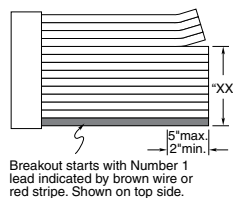
Double End (-D)



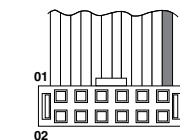
Assembled Length (-"XX.XX")



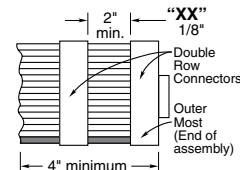
Position Polarization (-P "XX")



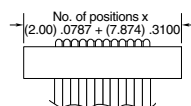
Breakout (-B "XX")



Reverse Wiring (-RW)



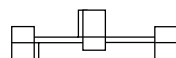
Daisy Chain (-D "XX")



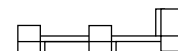
Strain Relief (-SR)



Reverse -R)



Middle Reverse (-M)



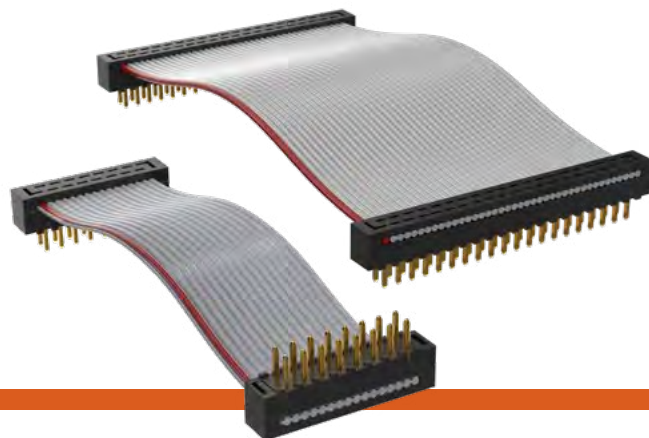
Outside Reverse (-O)

Note:

TCSD Series assemblies are
non-standard, non-returnable.

HIGH-RELIABILITY IDC HEADER CABLE

(2.00 mm) .0787" PITCH • TCMD SERIES



TCMD

Mates:

SMM*, MMS*, ESQT,
PTF, SQT, SQW, TLE

SPECIFICATIONS

Insulator Material:

Black Glass Filled Polyester

Terminal:

Phosphor Bronze

Plating:

Au or Sn over
50 μ" (1.27 μm) Ni

Wire:

28 AWG 7/36 Stranded, Tinned,
Copper with
Gray PVC Insulator

Current Rating:

2.6 A per pin
(2 pins powered)

Operating Temp Range:

-40 °C to +105 °C

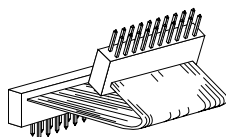
ALSO AVAILABLE

Other sizes

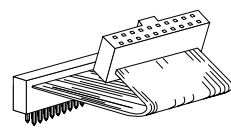
(MOQ Required)



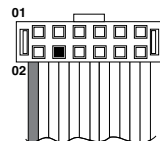
Single End (-S)



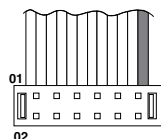
Double End (-D)



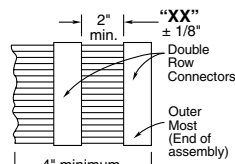
Transfer End (-T)



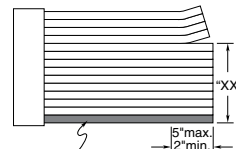
Position Polarization (-P "XX")



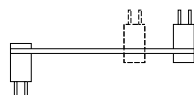
Reverse Wiring (-RW)



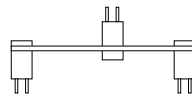
Daisy Chain (-D "XX")



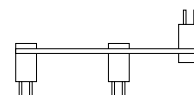
Breakout (-B "XX")



Reverse (-R)



Middle Reverse (-M)



Outside Reverse (-O)

*Note:

Standard TCMD callout
will not mate with SMM, MMS.
Must use gold plated callouts.
(See drawing on web.)
When mated with a socket,
Wire 1 mates with Pin 2;
Wire 2 mates with Pin 1, etc.

Note:

TCMD Series assemblies are
non-standard, non-returnable.

SERIES	NO. PINS PER ROW	END OPTION	OVERALL LENGTH	01	TRANSFER OPTION	OTHER OPTION
--------	------------------	------------	----------------	----	-----------------	--------------

TCMD
= Terminal
Strip

-04, -05, -07
-08, -10, -12,
-13, -15, -17,
-20, -22, -25
(Standard sizes)

-S
= Single End

-D
= Double End

-T
= Transfer End

- "XX.XX"
= Assembled
Length

Leave blank for
-S and -D
End Options.
For -T End
Option Specify
"-N"
(Socket has notch
polarization)

-P "XX"
= Position
Polarization
(Specify "XX" as
position number.
Requires Transfer
End. Only Socket
is polarized.)

-B "XX"
= Breakout
(Specify "XX"
as number of
conductors to
be broken out)

-RW
= Reverse Wiring
(Blue or black
wire opposite
position #1)

-D "XX"
= Daisy Chain

-SR
= Strain Relief
(Not available
with -O, -M, -R,
-DXX or -BXX)

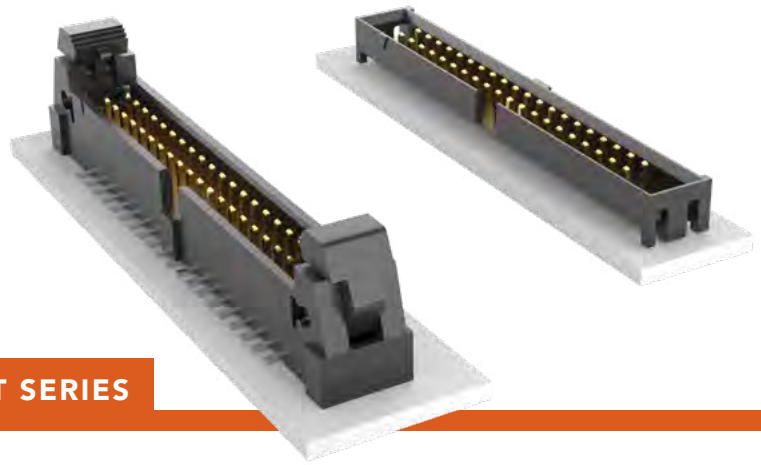
-R
= Reverse

-M
= Middle Reverse
(Requires -DXX)

-O
= Outside Reverse
(Requires -DXX)

SHROUDED IDC HEADERS

(2.00 mm) .0787" PITCH • ETMM/EHT SERIES



ETMM

Mates:
TCSD, TCMD

EHT

Mates:
TCSD

SPECIFICATIONS

Insulator Material:
Black Liquid Crystal Polymer
Terminal Material:
Phosphor Bronze
Plating:
Sn or Au over
50 μ " (1.27 μ m) Ni
Operating Temp Range:
-55 °C to +125 °C

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
EHT = (0.10 mm) .004" max
ETMM = (0.13 mm) .005" max*
*(.004" stencil solution
may be available; contact
IPG@samtec.com)

TYPE STRIP	1	NO. PINS PER ROW	02	PLATING OPTION	D	TAIL OPTION	OTHER OPTION
ETMM = Mates with TCSD and TCMD with Strain Relief		05, 08, 10, 12, 13, 15, 17, 20, 22, 25 (Standard sizes)		-F = Gold Flash on post, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on post, Matte Tin on tail		-TH = Through-hole -RA = Right-angle -SM = Surface Mount	- "XX" = Polarized Position -LC = Locking Clip (N/A with -RA) (Manual placement required) -K = (7.50 mm) .295" DIA Polyimide Film Pick & Place Pad (-SM only) -TR = Tape & Reel (-SM only) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (-SM only)

EHT	1	NO. PINS PER ROW	01	PLATING OPTION	D	TAIL OPTION	OTHER OPTION
		05, 08, 10, 12, 13, 15, 17, 20, 22, 25		-F = Gold flash on post, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on post, Matte Tin on tail		Leave blank for Through-hole -RA = Right-angle -SM = Surface Mount	- "XX" = Polarized Position -SR = Strain Relief (Leave Blank for no strain relief) -LC = Locking Clip (-SM only) (Manual placement required) -K = (7.50 mm) .295" DIA Polyimide Film Pick & Place Pad (-SM only) -P = Pick & Place Pad (-SM only) -TR = Tape & Reel (-SM only) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (-SM only)

EJECTOR HEADER CAP

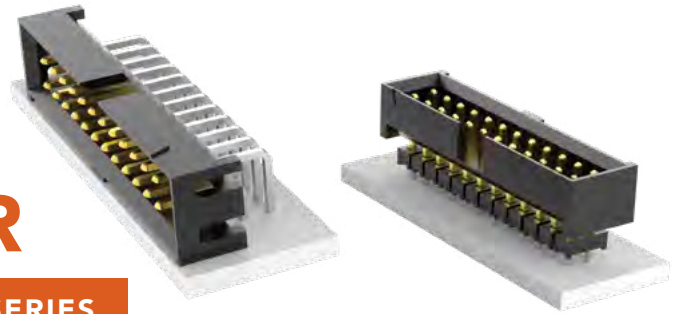
The EC2 locks TCSD cable to EHT header.
See samtec.com?EC2 for information about the header cap.

Note:
Some lengths, styles and options are non-standard, non-returnable.

FLEX STACK

SHROUDED IDC HEADER & STACKER

(2.00 mm) .0787" PITCH • STMM/ZSTMM SERIES



STMM/ZSTMM

Mates:

TCSD (except -SR)

SPECIFICATIONS

Insulator Material:

Black Liquid Crystal Polymer

Terminal Material:

Phosphor Bronze

Plating:

Sn or Au over

50 μ " (1.27 μ m) Ni

Operating Temp Range:

-55 °C to +105 °C with Tin;

-55 °C to +125 °C with Gold

PROCESSING

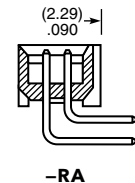
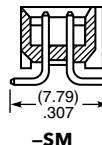
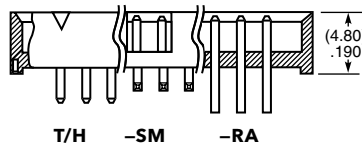
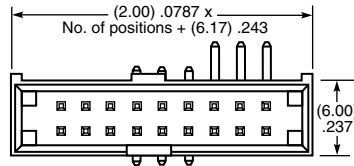
Lead-Free Solderable:

Yes

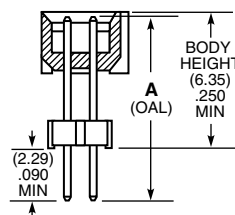
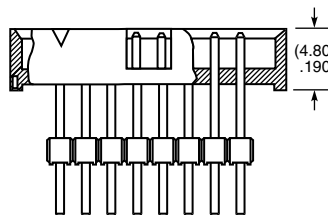
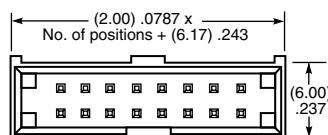
SMT Lead Coplanarity:

(0.10 mm) .004" max

STMM	1	NO. PINS PER ROW	02	PLATING OPTION	D	TAIL OPTION	OTHER OPTION
		04, 05, 06, 07, 08, 10, 12, 13, 14, 15, 17, 20, 22, 25 (Standard sizes)		-F = Gold flash on post, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on post, Matte Tin on tail -T = Matte Tin		Leave blank for Through-hole -RA = Right-angle -SM = Surface Mount	-“XX” = Polarized Position -LC = Locking Clip (-SM only) (Manual placement required) -K = (7.50 mm) .295" DIA Film Pick & Place Pad (-SM only) -TR = Tape & Reel (-SM only) -FR = Full Reel Tape & Reel (must order max. quantity per reel; contact Samtec for quantity breaks) (-SM only)



ZSTMM	1	NO. PINS PER ROW	LEAD STYLE	PLATING OPTION	D	BODY HEIGHT	OTHER OPTION
		04, 05, 06, 07, 08, 10, 12, 13, 14, 15, 17, 20, 22, 25 (Standard sizes)	Specify LEAD STYLE from chart	-F = Gold flash on post, Matte Tin on tail -L = 10 μ " (0.25 μ m) Gold on post, Matte Tin on tail -T = Matte Tin		-“XXX” = Body Height	-“XX” = Polarized Position



LEAD STYLE	A (OAL)	MAX BODY HEIGHT
-75	(9.58) 0.377	(7.42) 0.292
-62	(10.08) 0.397	(7.92) 0.312
-65	(10.49) 0.413	(8.33) 0.328
-73	(12.09) 0.476	(9.93) 0.391
-63	(14.10) 0.555	(11.94) 0.470
-66	(15.09) 0.594	(12.93) 0.509
-69	(15.60) 0.614	(13.44) 0.529
-74	(17.09) 0.673	(14.94) 0.588
-70	(17.60) 0.693	(15.44) 0.608
-71	(21.08) 0.830	(18.92) 0.745
-72	(21.62) 0.851	(19.46) 0.766

ALSO AVAILABLE

MOQ Required

Other sizes

Other platings

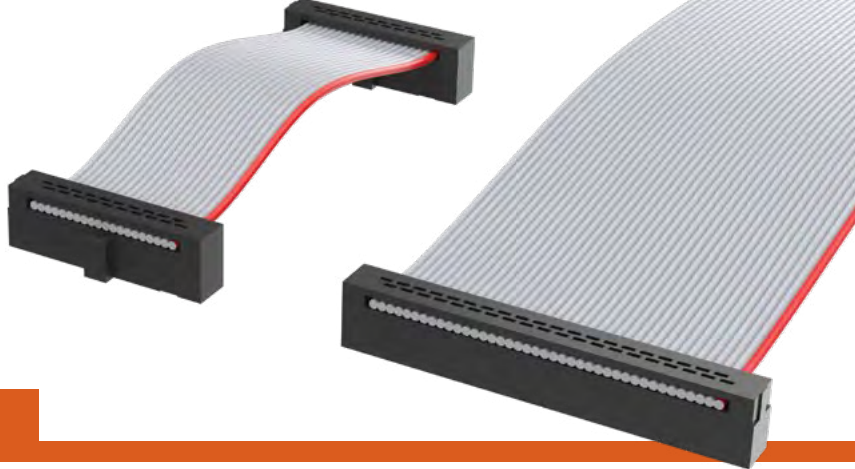
Notes:

For added mechanical stability, Samtec recommends mechanical board spacers be used in applications with gold or selective gold plated connectors. Contact ipg@samtec.com for more information.

This Series is non-standard, non-returnable.

TIGER EYE™ FLAT IDC WIRE CABLES

(1.27 mm) .050" PITCH • FFSD SERIES



FFSD

Mates:

FTS, FTSH, EHF,
SHF, ESHF

SPECIFICATIONS

Insulator Material:

PBT

Contact:

BeCu

Plating:

10 μ " (0.25 μ m) Au over 50 μ "
(1.27 μ m) Ni on contact area;
Sn over 50 μ " (1.27 μ m) Ni
on balance

Wire:

30 AWG

Current Rating (FFSD/FTSH):

2.3 A per pin
(2 pins powered)

Operating Temp Range:

-40 °C to +105 °C

Lead Size Accepted:

(0.41 mm) .016" SQ

Insertion Depth:

(2.64 mm) .104" to
(3.17 mm) .125"

ALSO AVAILABLE

Other Sizes
(MOQ Required)

SERIES	NO. PINS PER ROW	END OPTION	OVERALL LENGTH	01	N	OTHER OPTION
--------	---------------------	---------------	-------------------	----	---	-----------------

FFSD
= Socket
Strip

**-04, -05, -06,
-08, -10, -11,
-12, -13, -15,
-17, -20, -25**
(Standard sizes)

-S
= Single End

-D
= Double End

-"XX.XX"
= Assembled
Length

-N
= Notch
Polarization
(Notch option
not available
with -04 position)

-RW
= Reverse Wiring
(Red wire opposite
position #1)

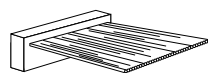
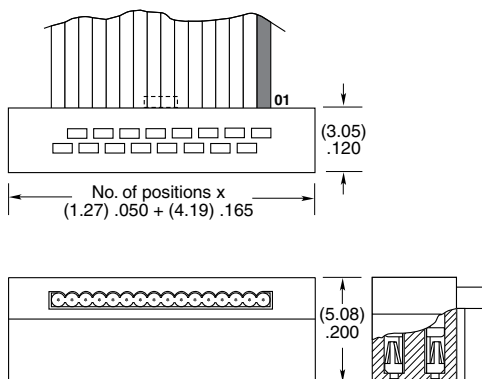
-D "XX"
= Daisy Chain

-SR
= Strain Relief
(Mates only with
ESHF Series)
(Not available with
-O, -M, -R or -DXX)

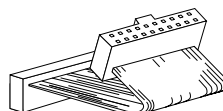
-R
= Reverse

-M
= Middle Reverse
(Requires -DXX)

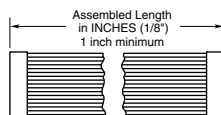
-O
= Outside Reverse
(Requires -DXX)



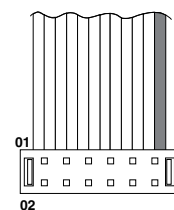
Single End (-S)



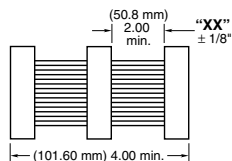
Double End (-D)



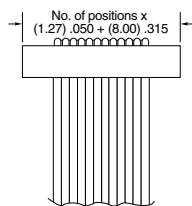
Assembled Length (-"XX.XX")



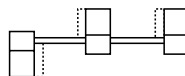
Reverse Wiring (-RW)



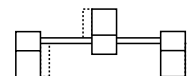
Daisy Chain (-D "XX")



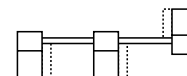
Strain Relief (-SR)



Reverse (-R)



Middle Reverse (-M)



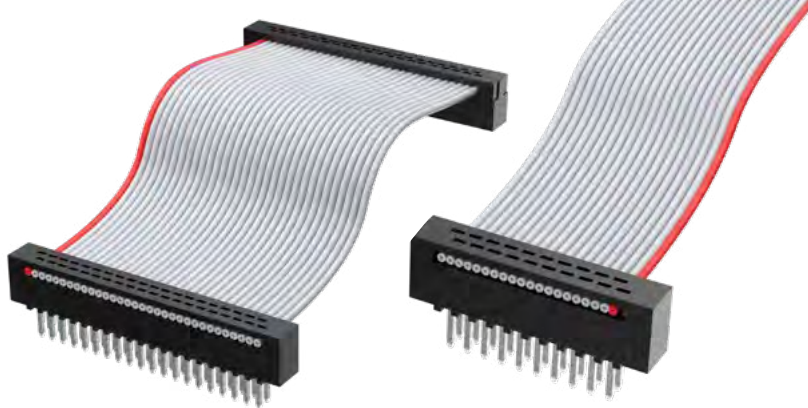
Outside Reverse (-O)

Note:

This Series is non-standard,
non-returnable.

TIGER EYE™ FLAT IDC WIRE CABLES

(1.27 mm) .050" PITCH • FFMD SERIES



FFMD

Mates:
FLE*, SFMC*

TRANSFER END

Mates:
FTS, FTSH, EHF,
SHF, ESHF

SPECIFICATIONS

Insulator Material:

PBT

Terminal:

Phosphor Bronze

Contact:

BeCu (-T)

Plating:

Sn over 50 μ" (1.27 μm) Ni

Wire:

30 AWG

Current Rating:

2.5 A per pin

(2 pins powered)

Operating Temp Range:

-40 °C to +105 °C

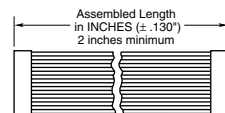
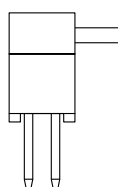
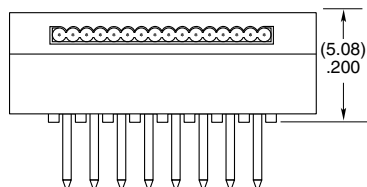
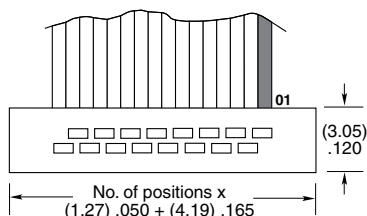
Voltage Rating:

215 VAC / 304 VDC

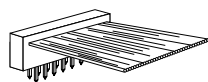
ALSO AVAILABLE

Other sizes
(MOQ Required)

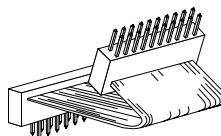
SERIES	NO. PINS PER ROW	END OPTION	OVERALL LENGTH	01	TRANSFER OPTION	OTHER OPTION
FFMD = Terminal Strip	-04, -05, -08, -10, -13, -17, -20, -25 (Standard sizes)	-S = Single End -D = Double End -T = Transfer End	-“XX.XX” = Assembled Length		Leave blank for -S and -D End Options. -N = Notch Polarization on socket (-T end only) (Not available with -04 position)	-RW = Reverse Wiring (Red wire opposite position #1) -D “XX” = Daisy Chain -SR = Strain Relief (Mates only with ESHF Series) (Not available with -O, -M, -R or -DXX) -R = Reverse -M = Middle Reverse (Requires -DXX) -O = Outside Reverse (Requires -DXX)



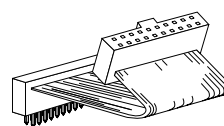
Assembled Length (-“XX.XX”)



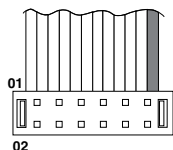
Single End (-S)



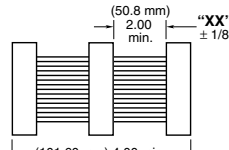
Double End (-D)



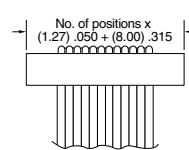
Transfer End (-T)



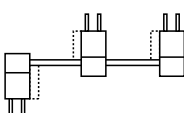
Reverse Wiring (-RW)



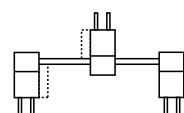
Daisy Chain (-D “XX”)



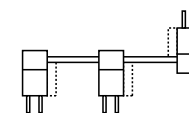
Strain Relief (-SR)



Reverse (-R)



Middle Reverse (-M)



Outside Reverse (-O)

*Note:

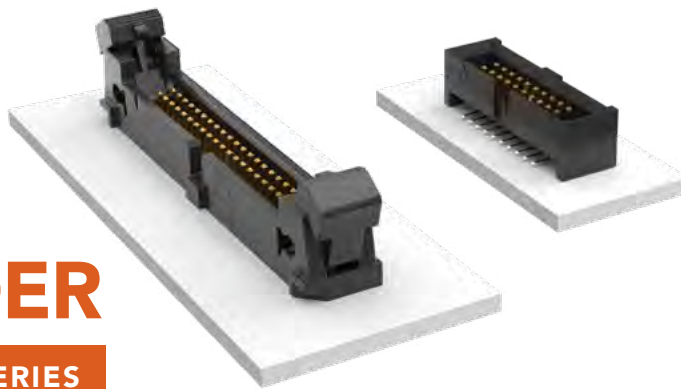
Standard FFMD callout will not mate with FLE, SFMC. Must use gold plated callouts. (See drawing on web.) When mated with a socket, Wire 1 mates with Pin 2; Wire 2 mates with Pin 1, etc.

Note:

This Series is non-standard, non-returnable.

SHROUDED AND EJECTOR IDC HEADER

(1.27 mm) .050" PITCH • SHF/ESHF/EHF SERIES



SHF/ESHF

Mates:
FFSD, FFTP (SHF)

EHF

Mates:
FFSD*, FFTP

***Important Note:**
EHF will not mate to FFSD with strain relief (-SR option), see ESHF series.

SERIES	1	NO. PINS PER ROW	01	PLATING OPTION	D	TAIL OPTION	OTHER OPTION
--------	---	------------------	----	----------------	---	-------------	--------------

SHF
= Mates with FFSD without Strain Relief

ESHF
= Mates with FFSD with Strain Relief

04, 05, 06,
08, 10, 11,
12, 13, 15,
17, 20, 25
(Standard sizes)

-L
= 10 μ "
(0.25 μ m)
Gold on post,
Matte Tin on tail

-TH
= Through-hole

-RA
= Right-angle

-SM
= Surface Mount

-LC
= Locking Clip
(Not available with -RA)
(Manual placement required)

-K
= (6.50 mm) .256" DIA
Polyimide Film
Pick & Place Pad
(-SM only)

-TR
= Tape & Reel

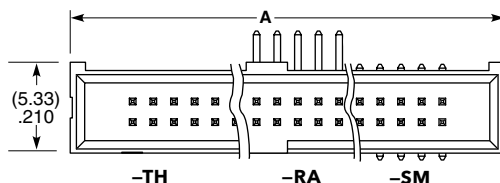
-FR
= Full Reel Tape & Reel
(must order max.
quantity per reel;
contact Samtec for
quantity breaks)

SPECIFICATIONS

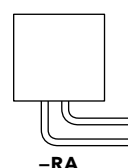
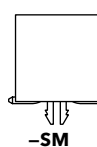
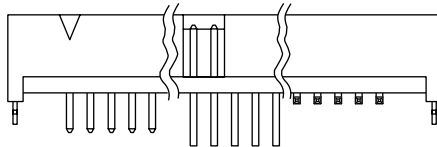
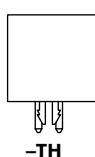
Insulator Material:
Black Liquid Crystal Polymer
Terminal Material:
Phosphor Bronze
Plating:
Sn or Au over
50 μ " (1.27 μ m) Ni
Operating Temp Range:
-55 °C to +125 °C

PROCESSING

Lead-Free Solderable:
Yes
SMT Lead Coplanarity:
(0.10 mm) .004" max



TYPE STRIP	A
SHF	No. of pins x (1.27) .050 + (6.35) .250
ESHF	No. of pins x (1.27) .050 + (10.16) .400



EHF	1	NO. PINS PER ROW	01	PLATING OPTION	D	TAIL OPTION	OTHER OPTION
-----	---	------------------	----	----------------	---	-------------	--------------

04, 05, 08, 10,
13, 17, 20, 25
(Standard sizes)

-F
= Gold flash
on post,
Matte Tin on tail

-L
= 10 μ "
(0.25 μ m)
Gold on post,
Matte Tin on tail

Leave blank for
Through-hole
version

-SM
= Surface Mount

-RA
= Right-angle

"XX"
= Polarized Position
(-RA not available)

-LC
= Locking Clip
(-SM only)
(Manual placement required)

-K
= (7.50 mm)
.295" DIA
Polyimide Film
Pick & Place Pad

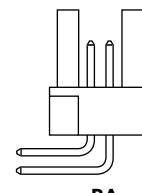
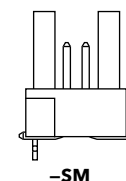
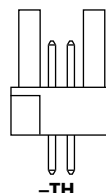
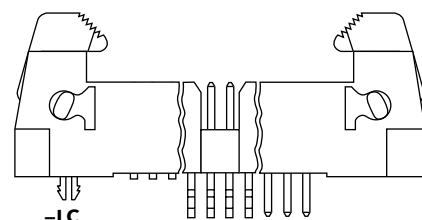
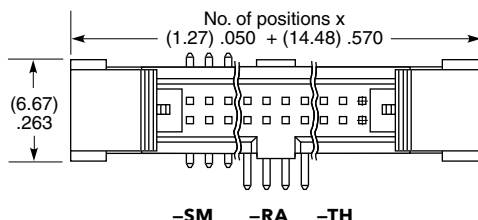
-P
= Pick & Place Pad
(-SM only)

-TR
= Tape & Reel
(-LC not available)

-FR
= Full Reel
Tape & Reel
(must order max.
quantity per reel;
contact Samtec for
quantity breaks)
(-LC not available)

EJECTOR HEADER CAP

See samtec.com?ECF for
Header cap.
(Locks FFSD cable to
EHF header)

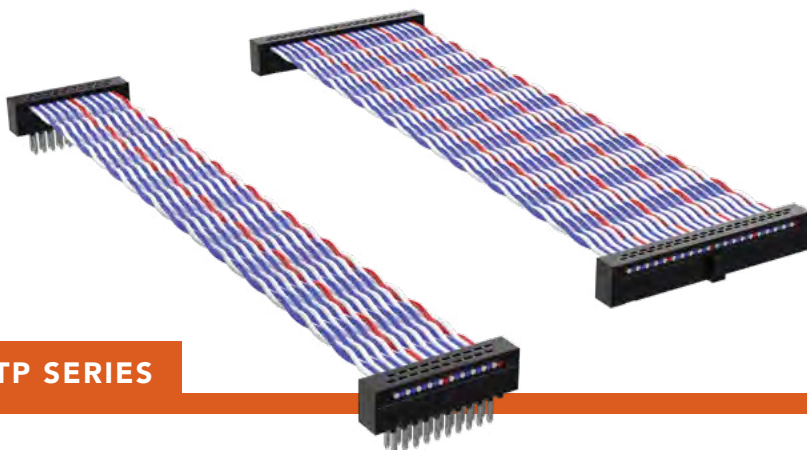


Note:
Some lengths, styles and
options are non-standard,
non-returnable.

samtec.com?SHF, samtec.com?ESHF or samtec.com?EHF

TWISTED PAIR IDC CABLES

(1.27 mm) .050" PITCH • FFTP/FMTP SERIES



FFTP

Mates:
FTS, FTSH, EHF, SHF

FMTP

Mates:
FLE*, SFMC*

SPECIFICATIONS

Insulator Material:

PBT

Contact:

FFTP=BeCu

Terminal:

FMTP=Phosphor Bronze

Plating (FFTP):

FFTP=10 μ" (0.25 μm)

Au over 50 μ" (1.27 μm)

Ni on contact area; Sn over

50 μ" (1.27 μm) Ni

FMTP=Sn over 50 μ"

(1.27 μm) Ni on balance

Wire:

30 AWG 7/38, Tinned,

Twisted Pair with PVC insulator

Operating Temp Range:

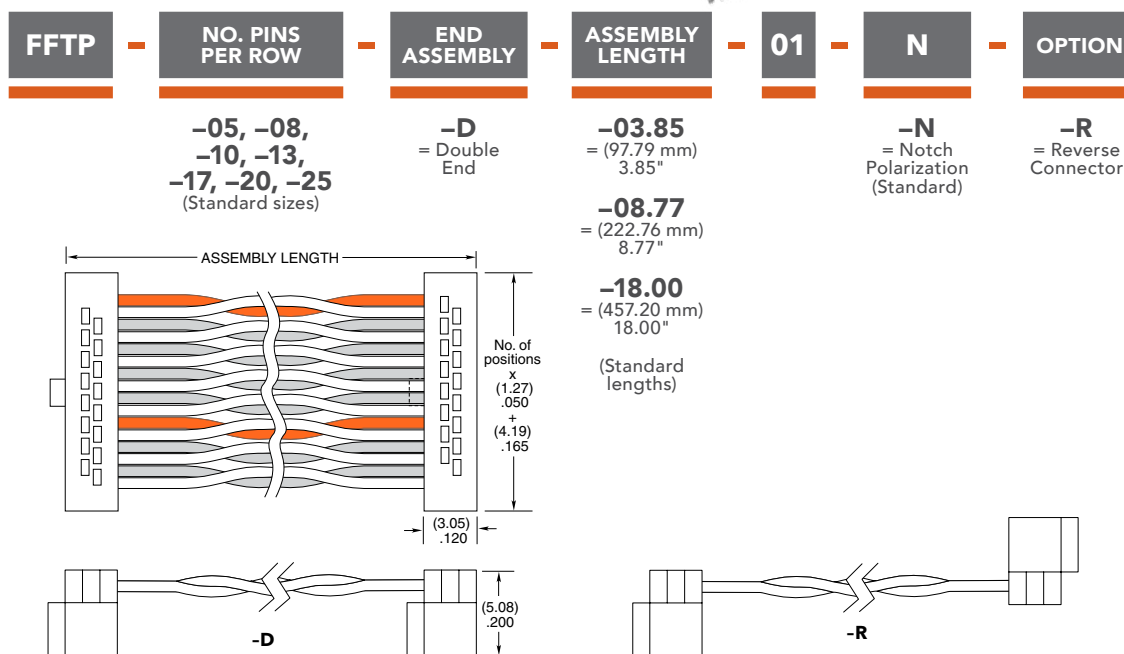
-40 °C to +105 °C

Lead Size Accepted:

(0.41 mm) .016" SQ

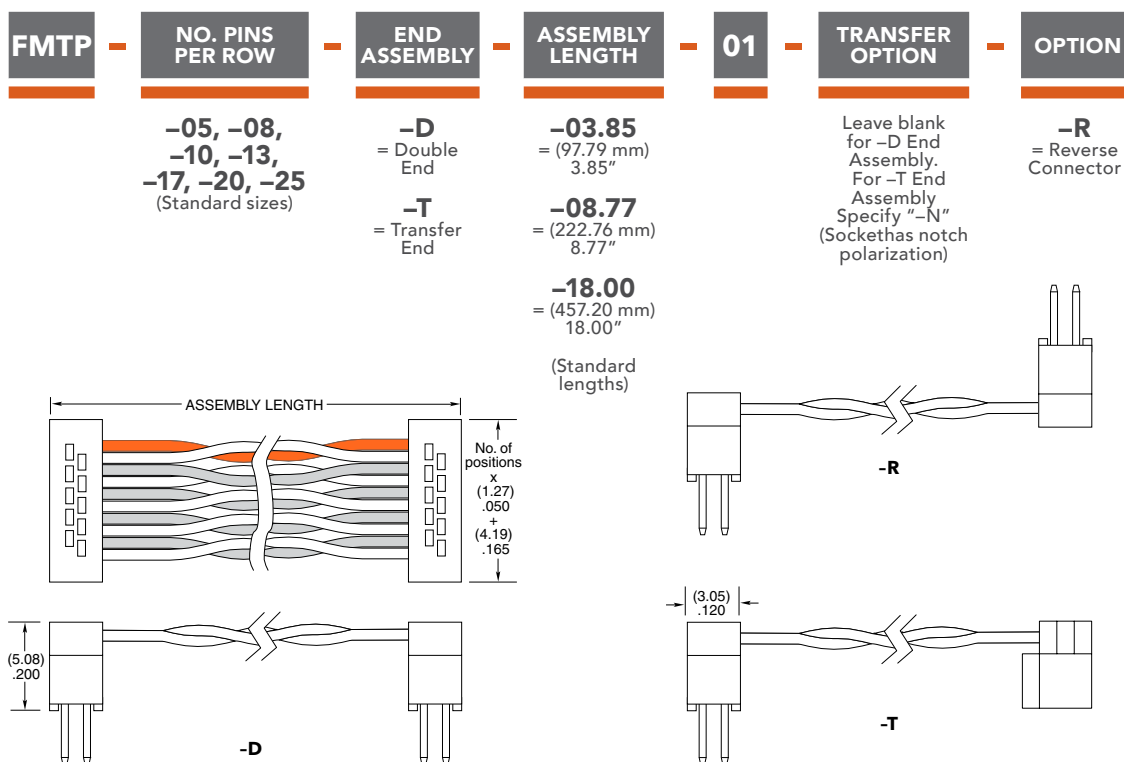
Insertion Depth (FFTP):

FFTP=(2.64 mm) .104" to
(3.17 mm) .125"



ALSO AVAILABLE

Other sizes
(MOQ Required)



***Note:** Standard FMTP callout will not mate with FLE, SFMC. Must use gold plated callouts. (See drawing on web.) When mated with a socket, Wire 1 mates with Pin 2; Wire 2 mates with Pin 1, etc.

Note:
This Series is non-standard, non-returnable.

INDUSTRY STANDARDS

PRODUCT SUPPORT & EXPERTISE

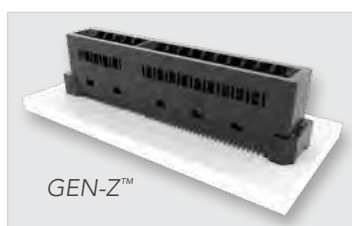
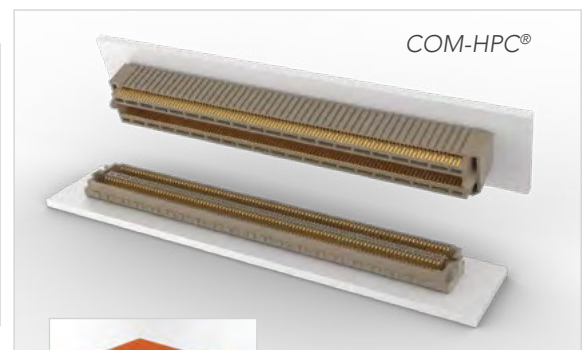
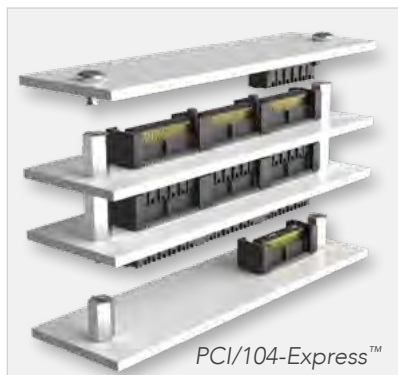
Samtec provides products that interact with many types of hardware and software. This drives our need to adhere to a variety of Industry Standards. The majority of Industry Standards we engage with address the following:

- Interconnection (cables & connectors)
- Sub-systems (typically daughter or carrier cards, which include functional compliance specifications defining electro-mechanicals and mechanicals)
- Transmission protocols (primarily software and firmware defining machine language to allow communication)
- Hardware (physical electro-mechanical devices)

Visit [samtec.com/standards](https://www.samtec.com/standards) to learn more or contact standards@samtec.com to discuss your application.

STANDARD	PRODUCT	SERIES	PAGE
VITA 42 XMC	SamArray®	YFS/YFT, JSOM	Contact Samtec.
VITA 57.1 FMC	SEARAY™	SEAM/SEAF, JSOM	23
VITA 57.4 FMC+	SEARAY™	SEAM/SEAF, JSOM	23
VITA 74 VNX	SEARAY™	SEAM/SEAF, JSOM	23
COM-HPC®	AcceleRate® HP	APM6/APF6	19
MICROSAM™	1.00 mm Pitch Discrete Wire	T1M	173
PCI/104-EXPRESS™ & PCI/104-EXPRESS™ ONEBANK	Q2™	QMS/QFS	42
COAXPRESS®	HD-BNC™/FireFly™	HDBNC-TH, HDBNC-BH, HDBNC-EM, ECUO-B04	129, 166
QSFP	QSFP	FQSFP/QSFPC	99
USB/USBR	USB/AccliMate™	USB/USBR/MUSB/MUSBS/SPM, RCU/SCRU/SCPU/RPCU/RPBU/SCRUS	125-126, 225, 227
GEN-Z™	Edge Rate®	HSEC6	65

For more industry standards and products that meet them, visit [samtec.com/standards](https://www.samtec.com/standards).



V42 XMC

Rugged Mezzanine System for High-Performance VPX Card Cages

- 3.125 Gbps performance rating
- 10 mm & 12 mm stack heights
- 96 total pins (6 x 16 configuration) with multiple points of contact
- Drop-in ready JSOM ejector jackscrews and mating high-density array cable assemblies available
- SOSA™ aligned connectors

V57.1 FMC

Leading VPX Mezzanine System for Advanced FPGA Integration

- FPGA Industry Standard connector for development applications
- 10 Gbps performance
- HPC & LPC versions (400 & 160 selectively loaded pins)
- 8.5 mm & 10 mm stack heights
- Many high-speed cable & loopback card options available
- Optional JSOM ejector jackscrews available
- SOSA™ aligned connectors

V57.4 FMC+

Advanced State-of-the-Art FPGA Mezzanine Integration

- HSPC Main Connector has 560 pins (14 x 40 configuration), 24 multi-gigabit interfaces, up to 28 Gbps
- HSPCe Extension Connector has 80 pins (4 x 20 configuration) adding 8 multi-gigabit interfaces, 32 in total
- 8.5 mm & 10 mm stack heights; 15.5 mm stack height in development
- SOSA™ aligned connectors

V57.5 FMC+

Development Tools Aid with FMC+ Applications

- Board connectors for increased stack heights to 15.5 mm
- Standoffs, loopback cards and connector extender cards
- User friendly JSOM ejector jackscrews and mating high-density array cable assemblies available

V74 VNX

Small Form Factor Nano VPX-Based Module Technology

- Rugged, high-performance, scalable, low power consumption embedded controllers
- 200 & 400 pin connector choices (Right-angle SEARAY™)
- 12.5 mm & 19 mm stack heights
- Mating high-density array cable assemblies available
- VITA 74.5 VNX in development for Optical and RF solutions

V88 XMC+

Improved Mezzanine Connectors for XMC Applications

- Compatible with VITA 42 footprints
- Improved mating/unmating forces
- PCIe® 5.0 speeds

COM-HPC®

Next-Gen Embedded System Design Scalability & Performance

- Supports edge server & robust embedded computing design applications
- System based on Samtec's AcceleRate® HP high-performance arrays
- 5 mm and 10 mm stack heights
- 400 pin count connectors
- Supports interfaces such as PCIe® 5.0 (32 GT/s) & up to 100 Gb Ethernet

MicroSAM™

Compact Computing Module Developed for Industrial IoT Sensor-Domain Control

- Utilizes PICMG sensor domain network architecture and data model for plug-and-play interoperability
- Micro 1.00 mm pitch discrete wire terminal
- 4, 6 and 18 pin configurations

PCI/104-Express™ & PCI/104-Express™ OneBank

Rugged, Stackable & Scalable Embedded Computer Applications

- Q2™ connectors with ground planes
- 3-banks have 156 signal pins, OneBank has 52 pins
- 2.5 Gbps performance
- 15.24 mm & 22 mm stack heights
- Mating high-speed, high density cable assemblies available

COAXPRESS®

Industrial/Professional Application High-Speed Imaging Standard

- Coaxial cable combined with high-speed serial data technology
- Up to 12.5 Gbps data rate per cable
- HD-BNC™ 75 Ω connectors and components
- Supports 12G-SDI protocol

QSFP

Compact, Hot-Pluggable Transceiver I/O Connector

- Flyover® solution for optimized signal integrity
- Cage and 38-pin connector
- 30 AWG 100 ohm twinax cable
- 4 high-speed Tx pairs, 4 high-speed Rx pairs
- 28 Gbps NRZ/56 Gbps PAM4 performance per channel
- Meets high-speed protocols including 40/200/400 Gb Ethernet, PCIe®, OIF-CEI-28G, SAS and SATA

GEN-Z™

Open Systems Interconnect Offering Memory-Semantic Access to Data and Devices Via Multiple Network Topologies

- High-speed, low-latency access to memory across the data center
- 0.60 mm pitch Edge Rate® high-speed edge card connectors

USB/USBR

Standardized Connection, Communication & Power Supply

- Type A, Type B, Mini, high retention and sealed versions
- IP68 sealed circular and rectangular cable systems

EVALUATION & DEVELOPMENT KITS

From concept and prototype to development and production, Samtec-designed Evaluation and Development Kits simplify the design process and reduce time to market. Kits are available for many of our high-performance connector sets, standard high-speed cable assembly, and optical configurations. Custom kits are also available via our “mix-and-match” design approach. Visit samtec.com/kits or contact kitsandboards@samtec.com for a current list of kit availability.

OPTICS/FPGA DEVELOPMENT KITS

Visit samtec.com/kits for more information.



VITA 57.4 FMC+
HSPC Loopback Card
(Extender Card Available)



VITA 57.4 FMC+
HSPC / HSPCe Loopback Card
(Extender Card Available)



ExaMAX® Loopback Card
for Xilinx® Virtex® UltraScale™
VCU110 Development Kit



FMC+ HSPC Loopback Card
Supporting Xilinx® Virtex®
UltraScale™+ VCU118 Kit



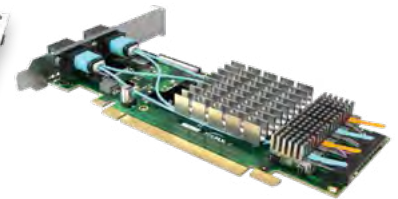
25/28 Gbps FireFly™ FMC+ Kit



14 Gbps FireFly™ FMC Kit



28 Gbps FireFly™ Kit



PCI Express®-Over-Fiber
Adaptor Card (PCUO/PCOA)

CUSTOM KITS FOR APPLICATION-SPECIFIC EVALUATION

Samtec's Custom Kits make it easy to quickly obtain a robust, high-quality kit for evaluating Samtec interconnect systems. A vast library of high-performance connector and cable options is available for designing a custom solution to meet your specific evaluation needs. Contact kitsandboards@samtec.com.

END 1/END 2 OPTIONS

Twinax Flyover®

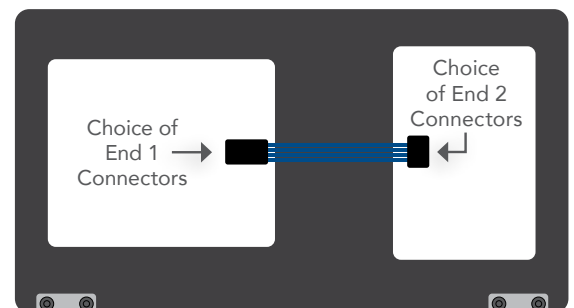
FQSFP-DD
FQSFP
DCH
ECUE

High-Speed Backplane

EBTF/EBTM
EBCF/EBCM
EBDM/EBCF-RA
HDTF/HDTM

High-Speed Mezzanine

NVAM/NVAF
ARF6/ARC6
ADF6/ADM6
LPAM/LPAF
ZRDP/ZCI



SI EVALUATION KITS: BOARD-TO-BOARD

Visit samtec.com/kits for more information.



ExaMAX® High-Speed Backplane
Traditional Connectors (EBTF/EBTM)



Edge Rate® 0.60 mm Pitch
High-Speed Edge Card (HSEC6-DV)



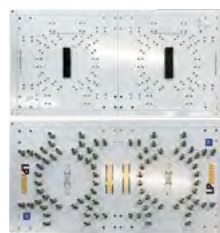
NovaRay™ Extreme Density Arrays
(NVAM/NVAF)



Edge Rate® Differential Pair
Edge Card (HSEC8-DP)



AcceleRate® HD High-Density
Arrays (ADM6/ADF6)



LP Array™ Low-Profile Arrays
(LPAM/LPAF)



FireFly™ 20+ Gbps Edge Card
Socket (UEC5-2)

SI EVALUATION KITS: CABLE

Visit samtec.com/kits for more information.



AcceleRate® Flyover® Slim
Cable Assembly (ARC6/ARF6)



NovaRay® Flyover® Extreme
Performance Cable Assembly
(NVAC/NVAM-C)



Flyover® QSFP28 Cable
System (FQSFP to ARC6/DCH)



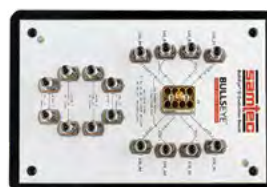
Flyover® QSFP
Double-Density Cable System
(FQSFP-DD to NVAC/ARC6)



ExaMAX® Backplane
Cable System
(EBCM/EBTF-RA)



FireFly™ Copper
Micro Flyover System™
(ECUE/UEC5-2/UCC8)



Bulls Eye® 50 GHz
High-Performance Test System
(BE40A)



Flyover® Direct Connect
Horizontal Cable System
(DCH)

TESTING

Samtec interconnects are subject to a wide variety of standard test procedures that push the industry limits to help ensure quality and durability in any application.

SEVERE ENVIRONMENT TESTING

Visit samtec.com/SET for additional information.



Severe Environment Testing (SET) is a Samtec initiative to test products beyond typical industry standards and specifications, many set forth by common requirements for rugged / harsh environment industries. These products undergo additional testing to ensure they are more than suitable for military, space, automotive, industrial and other extreme applications.

Samtec's SET products are approved for NASA Class D missions that require high-reliability, quick-turn and cost-effective solutions for LEO and GEO satellites, SmallSats, CubeSats and other space exploration applications. Visit samtec.com/SET or [contact set@samtec.com](mailto:set@samtec.com) for additional information and current available test results.

Additional Testing Includes:

MATING/UNMATING/DURABILITY

Measures the change in LLCR and mating/unmating after products have been cycled and exposed to various environmental conditions (100% relative humidity, 250 cycles).

MECHANICAL SHOCK/RANDOM VIBRATION/LLCR AND NANOSECOND EVENT DETECTION:

Measures the product's ability to withstand a series of mechanical shocks and random vibration. LLCR is a before and after check for damage. Event detection monitors continuity during testing (40G Peak, 11 ms, Half Sine & 12gRMS, 5 – 2,000 Hz, 1 Hour/Axis).

TEMPERATURE CYCLING

Evaluates the product's reliability through thermal fatigue by cycling through two temperature extremes (-65 °C to 125 °C, 30 minute dwell time at each extreme; 500 cycles).

NON-OPERATING CLASS TEMPERATURE

Determines the temperature range at which the product operates at peak level (-55 °C to 125 °C at 100 cycles and -65 °C to 125 °C at 100 cycles; 200 total cycles).

DWV AT ALTITUDE

Measures the peak voltage that a product can withstand before dielectric breakdown at high altitudes (70,000 ft).

ELECTROSTATIC DISCHARGE (ESD)

Measures the level of electrostatic voltage the product can withstand (exposure to 5k, 10k and 15k Volts, repeated 10 times).

OUTGASSING

Measures the level of gases and vapors released from non-metallic materials when exposed to extreme heat and/or a vacuum. Visit outgassing.nasa.gov for data.



EXTENDED LIFE PRODUCT™

Visit [samtec.com/ELP](https://www.samtec.com/ELP) for additional information.

E.L.P.™ products are tested to rigorous standards, which evaluate contact resistance in simulated storage and field conditions.

- 10 year Mixed Flowing Gas (MFG)
- High Mating Cycles (250 to 2,500)
- Certain plating and/or contact options will apply

For complete details about Samtec's E.L.P.™ program, a list of qualifying products and test results, please visit [samtec.com/ELP](https://www.samtec.com/ELP) or email the Customer Engineering Support Group at ASG@samtec.com.



DESIGN QUALIFICATION TESTING

All Samtec series undergo Design Qualification Testing (DQT), which includes:

- Gas Tight
- Normal Force
- Thermal Aging
- Mating/Unmating/Durability
- IR/DWV
- Current Carrying Capacity (CCC)
- Mechanical Shock/Random Vibration/LLCR
- Mechanical Shock/Random Vibration/Event Detection



TESTING REFERENCE GUIDE

TEST	SET	E.L.P.™	DQT
GAS TIGHT	X*	X*	X
NORMAL FORCE	X*	X*	X
THERMAL AGING	X*	X*	X
MATING/UNMATING/DURABILITY (240 HRS)	X (100% RH, 250 Cycles)	X* (90-98% RH, 100 Cycles)	X (90-98% RH, 100 Cycles)
IR/DWV	X (At Altitude of 70,000 Feet)	X*	X
CCC	X*	X*	X
MECHANICAL SHOCK/RANDOM VIBRATION/LLCR & NANOSECOND EVENT DETECTION	X (40 G Peak, 11 ms, Half Sine & 12gRMS, 5 - 2,000 Hz, 1 Hr / Axis)	X* (100 G Peak, 6 ms, Half Sine & 7.56gRMS Avg, 2 Hr / Axis)	X (100 G Peak, 6 ms, Half Sine & 7.56gRMS Avg, 2 Hr / Axis)
TEMPERATURE CYCLING (500 CYCLES)	X	N/A	N/A
NON-OPERATING CLASS TEMPERATURE	X	N/A	N/A
ELECTROSTATIC DISCHARGE (ESD)	X	N/A	N/A
10 YEAR MFG (MIXED FLOWING GAS)	N/A	X	N/A
MATING CYCLES (250 TO 2,500)	N/A	X	N/A

*Completed as part of initial Design Qualification Testing (DQT). E.L.P.™ and SET testing are performed in addition to DQT.

Samtec is committed to the continuous evolution of our award-winning website, providing customers with innovative design tools, technical resources and support needed to make **finding, designing and ordering** the right product as easy and streamlined as possible.



Online Tools

FIND, DESIGN & VALIDATE YOUR SOLUTION

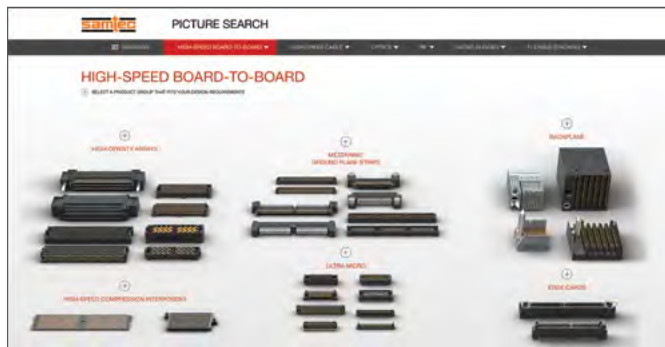
Samtec has developed innovative search, design, and validation tools to help customers quickly and easily find the right solution. Whether you prefer to search by product name or characteristics, browse through pictures, or build an assembly by entering physical specifications, Samtec offers a tool to make your search easier than ever.



Picture Search

VISUALLY FIND YOUR SOLUTION

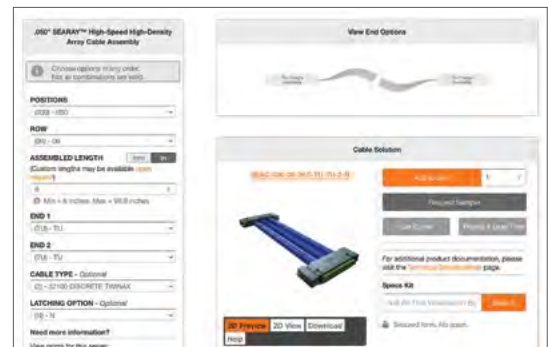
Browse through a highlight reel of Samtec's most popular products to find the ideal solution for your application, view specifications, check availability, order samples and more. To find your solution, visit samtec.com/picturesearch.



Cable Builder

HIGH-SPEED ASSEMBLIES DESIGNED IN MINUTES

Input specific options to quickly build a complete high-speed cable assembly, view specs, prints, 3D models, and instantly request samples and quotes. Visit samtec.com/cablebuilder.



Solutionator

DESIGN IN A MINUTE

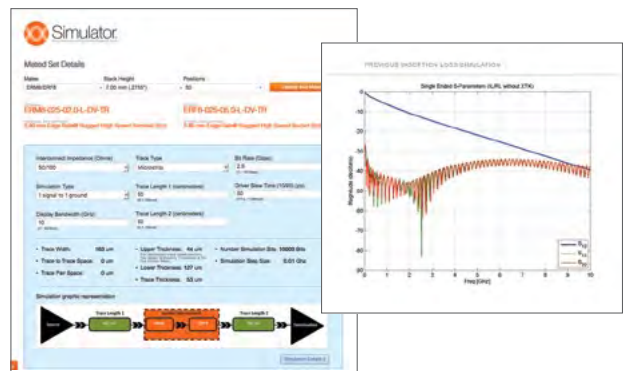
Quickly build mated connector sets using a wide variety of user-defined search parameters and filters, view specs and order samples all with one online design tool. Visit samtec.com/solutionator to start building.



Simulator

SIMULATE IN A MINUTE

Innovative design tool blends data to project performance in a user-defined system, providing insertion loss, crosstalk, eye diagrams, sample requests and more. Visit samtec.com/simulator.





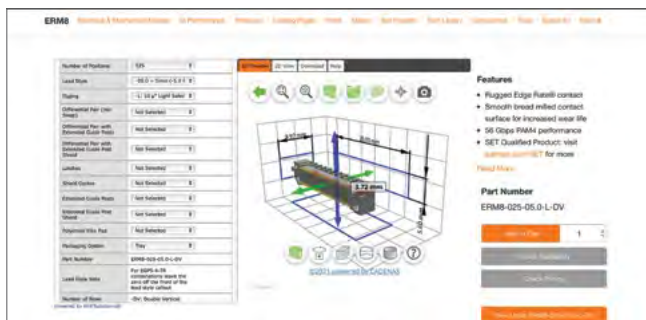
Downloads

3D MODELS, SPECS, PRINTS & MORE

Samtec's extensive library of downloadable resources is unmatched in the industry. From 3D Models and Test Reports, Interconnect Symbols and Footprints, Product Videos, Design Guides, Specifications and so much more – Samtec offers immediate and unlimited access to all the documentation you need to select the right solution for your application. Visit samtec.com to start exploring.

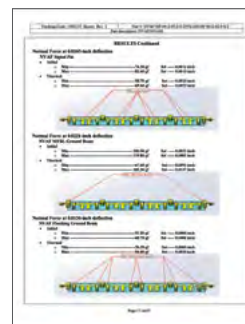
3D Models

Quickly configure, preview and download models in more than 150 different formats, including AutoCad, Solid Edge, Inventor and many more.



Test Reports

Samtec provides immediate access to a variety of testing and qualification reports for our products, including high-speed characterization, thermal, frequency and time domain, Extended Life Product™, Severe Environment Testing, and others.



PCB Footprint / eCAD Models

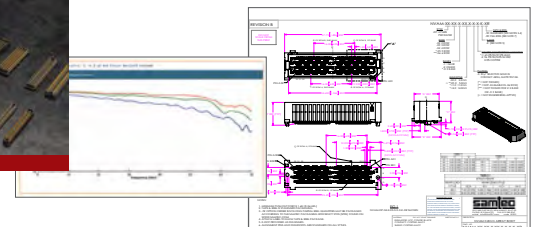
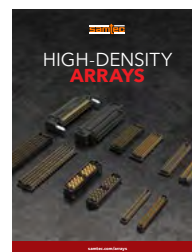
Instantly view, download and design with over 200,000 ready-to-use eCAD models.

These detailed models have been formatted to work with leading schematic captures and include accurate assembly, silkscreen and 3D features.



Technical Library

Samtec's online Technical Library contains a wealth of resources, including Prints & Specifications, White Papers, Application Notes, Test Reports, Product Videos, Design Guides, Processing Information and much more.



HIGH-SPEED CHANNEL PERFORMANCE

CHARACTERIZATION THAT ACCOUNTS FOR THE ENTIRE SIGNAL PATH

Samtec uses a channel-based approach to estimate connector performance in a system. The result is a realistic one number designation for all of Samtec's high-speed interconnects, called **Channel Performance Metric (CPM)**.

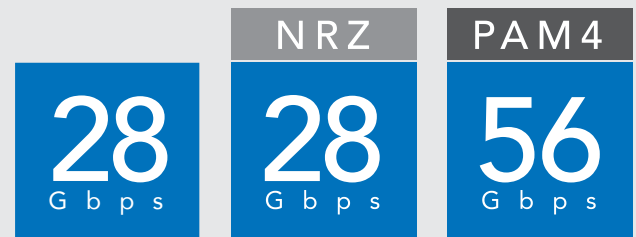
This one number designation allows for a side-by-side comparison of Samtec components. Noise contributions from, and interactions with, other parts of a predefined channel are considered. An example of a predefined channel is shown below.

Samtec's CPM reports connector capability that is more representative of actual performance in a system, replacing the connector only data of the past.

This real-world approach factors in all impairments, such as the crosstalk and reflections, inherent in a complete channel. Through Samtec's use of a common set of channel assumptions, relative comparison can then be made across the entire Samtec offering which is practical and realizable. Because Samtec's CPM is a function of necessary channel assumptions made, it is important to note that Samtec's CPM can and will vary from a customer specific application.

Visit samtec.com or contact SIG@samtec.com for technical support prior to final connector selection in any specific application.

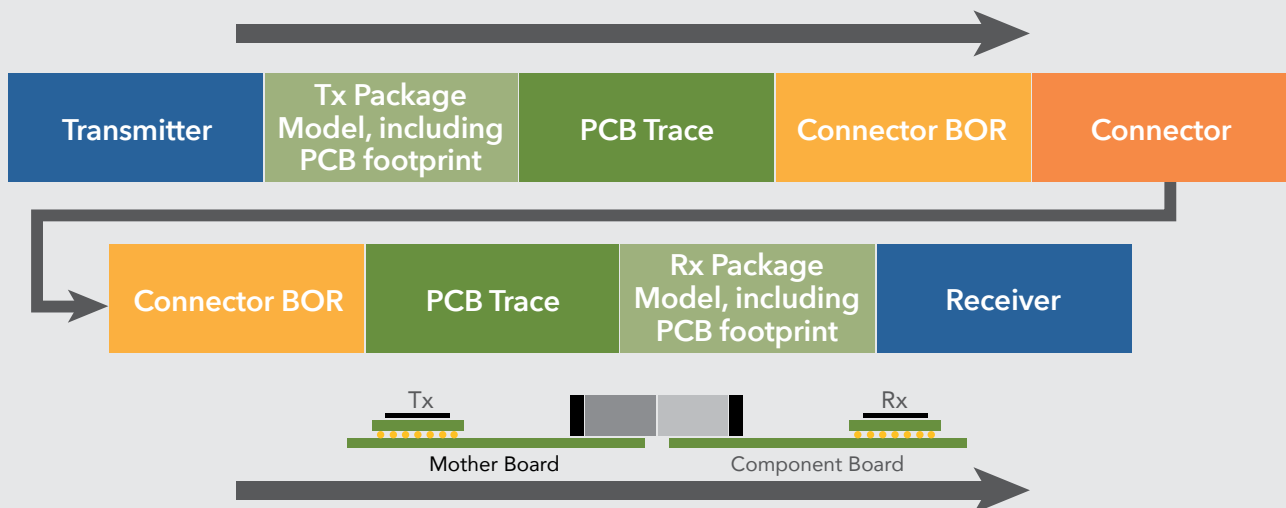
Throughout the high-speed sections of this catalog, look for badges indicating Samtec's CPM one number rating for specific product series, for example:



*Note: For speeds of 28 Gbps or less, NRZ encoding scheme is assumed.

Predefined Channel

Board-to-Board



*Moderate levels of equalization are applied.

SPECIFICATIONS & TESTING



SPECIFICATIONS & STANDARD TEST PROCEDURES

Samtec products are subject to the following general specifications and standard test procedures.*

QUALITY ASSURANCE

Quality Program Certifications	IATF 16949 and/or ISO-9001
UL File Number	Visit samtec.com/quality
Sampling Procedures	ANSI/ASQ Z1.4
Calibration System Requirements	Per IATF 16949

INSULATOR

Specifications

Molding Plastics, Thermoplastic Polyesters	MIL-M-24519 Rev E
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Applied Tests***

Dielectric Breakdown Voltage	ASTM/ISO
AC Loss Characteristics	ASTM/ISO
Impact Resistance of Plastics	ASTM/ISO
DC Resistance	ASTM/ISO
High-Voltage, Low-Current Arc Resistance	ASTM/ISO
Water Absorption of Plastics	ASTM/ISO
Test for Tensile Properties of Plastics	ASTM/ISO
Deflection Temperature of Plastics	ASTM/ISO
Compressive Properties of Plastics	ASTM/ISO
Coefficient of Linear Thermal Expansion	ASTM/ISO
Shear Strength of Plastics	ASTM/ISO
Rockwell Hardness of Plastics	ASTM/ISO
Flexural Properties of Plastics	ASTM/ISO
Specific Gravity and Density of Plastics	ASTM/ISO

PLATING

Specifications

Gold	ASTM-B488
Tin	ASTM-B545**

Under Plating Specifications

Nickel	QQ-N-290**
Copper	AMS 2418

Applied Tests

Coating thickness (X-Ray Fluorescence)	ASTM-A-754-79
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CONTACT & TERMINAL

Specifications***

Brass	ASTM/ISO
Phosphor Bronze	ASTM/ISO
Beryllium Copper	ASTM/ISO

ASSEMBLY

Testing Specifications

Test Methods for Electrical Connectors	EIA-364
Test Methods for Electronic/Electrical Components	EIA-364
Connections, Electrical, Solderless, Wrapped	EIA-364
Environmental Test Methods	EIA-364
Sockets (Lead, Electronic Components), General	EIA-364
Sockets, Plug-in Electronic Components, General	EIA-364

Packaging Specifications

Tape and Reel Packaging of Connectors	EIA-481
Tray Packaging of Connectors	ANSI/EIA-960
Packaging Materials for ESD Sensitive Items	ANSI/ESD S541
Package Testing Procedures	ISTA-3A

OTHER SPECIFICATIONS

Insulation Resistance	5000 M Ω min
Flammability Rating	UL 94V-0 (Typically)

PRODUCT ENVIRONMENTAL COMPLIANCE

Product environmental compliance is a part specific issue for Samtec. To confirm the environmental compliance status of any Samtec product please contact the Product Environmental Compliance Group at PEC@samtec.com and/or visit samtec.com/Quality.

Samtec has offered both lead-bearing and lead-free products for many years and will continue to support customers requiring products not compliant with the EU Directives, such as those specified for military, aerospace and specialty applications.

Proposition 65 statement: These products could expose you to chemicals which are known to the State of California to cause birth defects or other reproductive harm. For more information, visit P65Warnings.ca.gov.

LEAD FREE PROCESSING GUIDELINES

Lead-Free Wave Solderable	This product is compatible with wave solder pot temperatures between 260 °C and 270 °C with maximum exposure of the termination pins to the solder wave for 4 seconds.
Lead-Free Reflow Solderable	This product can withstand a maximum peak temperature of 260 °C; 255 °C for up to 30 seconds, and the longer dwell times required for lead-free reflow processing.

AUTOMOTIVE CERTIFICATION (ACD SERIES)

Samtec offers design and manufacture of electronic connectors, marketed as "ACD Series" (Automotive Certified Designs) for printed circuit boards. Samtec shall only comport with ISO/IATF 16949 on products it certifies as Automotive Custom Design ("ACD") or those designated with "A-" in the Samtec part number preface of the Automotive Solutions Catalog.

Download the Automotive Solutions catalog at samtec.com/catalog, or contact AutoSalesGroup@Samtec.com for qualifying products and alternative automotive application solutions.

Notes:

*Products with specifications other than those listed above are noted on the product's website page.

**With the exception of thickness.

***As dictated by material grade.

INDEX BY BRAND NAME

AcceleRate®, AcceleRate® HD & AcceleRate® HP

APF6	0.635 mm AcceleRate® HP High-Performance Socket	19
APM6	0.635 mm AcceleRate® HP High-Performance Header	19
ADF6	0.635 mm AcceleRate® HD High-Density Socket	21
ADM6	0.635 mm AcceleRate® HD High-Density Header	21
ARC6	0.635 mm AcceleRate® Slim Cable	105
ARF6	0.635 mm AcceleRate® Slim Socket	105

AccliMate™

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ACX-16	AccliMate IP68 Sealed 16 mm Assembly	222
ACX-22	AccliMate IP68 Sealed 22 mm Assembly	223
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MCR	AccliMate IP67 Mini Push-Pull Panel Assembly	224
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SCRES	AccliMate IP68 Sealed Circular Ethernet Cable Socket	225
RPBE	AccliMate IP68 Sealed Ethernet Panel Mount Socket	226
RPCE	AccliMate IP68 Sealed Ethernet Panel Mount Socket Cable	226
RPBU	AccliMate IP68 Sealed USB Panel Mount Socket	227
RPCU	AccliMate IP68 Sealed USB Panel Mount Cable	227

Edge Rate®

ERF5	0.50 mm Edge Rate® Rugged High-Speed Socket	49
ERM5	0.50 mm Edge Rate® Rugged High-Speed Header	49
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ERM6	0.635 mm Edge Rate® Rugged High-Speed Header	50
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HSEC6	0.60 mm Edge Rate® Vertical Card Socket	65
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ERCD	0.80 mm Edge Rate® Coax Cable Assembly	117

ExaMAX®

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EBDM-RA	2 mm ExaMAX® Direct Mate Orthogonal Header	88
EPT(X)	ExaMAX® Power Module	89
EGB(X)	2 mm ExaMAX® Guide Module	89
EBCM	2 mm ExaMAX® Backplane Cable Header	90
EBCF	2 mm ExaMAX® Cable Socket	90

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FireFly™ & Flyover®

FQSF	Flyover® QSFP Cable System	99
FQSF-DD	Flyover® QSFP Double Density System	100
ECUE	FireFly® 38 AWG Copper Micro Flyover System™	109
PCUE	PCle®-over-FireFly® Copper Flyover® Cable	109
UCCB	FireFly® Positive Latching Receptacle	110
UECS	FireFly® Edge Card Socket	110
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PCUO	PCle®-Over-Fiber FireFly® Cable	131
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