

ChiP™ and VIA™ Packages

DCM™ Family

Isolated, Regulated DC-DC Converter Modules



For use in: Transportation, Industrial and Process Control, Distributed Power, ATE, Communications, Defense/Aerospace, Semiconductor Manufacturing Equipment (SME)

Description

The DCM is DC-DC converter capable of operating from an unregulated and wide input voltage range to generate an isolated and regulated output voltage. With its high-frequency zero-voltage switching (ZVS) topology, the DCM converter consistently delivers high efficiency across the input line range. Modular DCM converters and downstream DC-DC products support efficient power distribution and provide superior power system performance and connectivity from a variety of unregulated power sources to the point-of-load.

Leveraging the thermal and density benefits of Vicor ChiP packaging technology, the DCM ChiP module offers flexible thermal management options with very low top and bottom side thermal impedances. Thermally-adept ChiP-based power components enable customers to quickly and predictably achieve cost-effective power system solutions with previously unattainable system size, weight and efficiency attributes. In addition, the DCM VIA modules provide integrated EMI filtering, tight output voltage regulation, a secondary-referenced control interface and flexible thermal management options while retaining the fundamental design benefits of the conventional brick architecture.

Features & Benefits

- Up to 600W, 43.5A continuous
- 93% peak efficiency
- Up to 1244W/in³ power density
- Up to 4,242V_{DC} isolation
- ZVS high-frequency switching
- Fully operational current limit
- OV, OC, UV, short circuit and thermal protection
- Integrated filtering, remote or local sense, enhanced thermal management and tight output voltage regulation over all lines and load conditions for DCM VIA applications



Family of DCM Products

■ = Also Available in VIA package

Nominal Input (V)	Package Size	Power (W) by Nominal Output Voltage (V)								
		3.3	5	12	13.8	15	24	28	36	48
300 (180 – 420)	4623 ChiP or 3714 VIA			400	500		600	500		500
290 (160 – 420)	4623 ChiP				600					
275 (120 – 420)	4623 ChiP	110	190	375		375	375	375		375
270 (160 – 420)	4623 ChiP or 3714 VIA	150	250	500		500	500	500		500
100 (43 – 154)	3623 ChiP	80	120	240		240	240	240		240
48 (36 – 75)	3623 ChiP or 3414 VIA		160	320		320	320	320	320	320
42 (9 – 75)	3623 ChiP			80		80	80	80		80
30 (9 – 50)	3623 ChiP	80	80	160		160	160	160		160
28 (16 – 50)	3623 ChiP or 3414 VIA	120	180	320		320	320	320		320
24 (18 – 36)	3623 ChiP		180	320		320	320	320	320	320

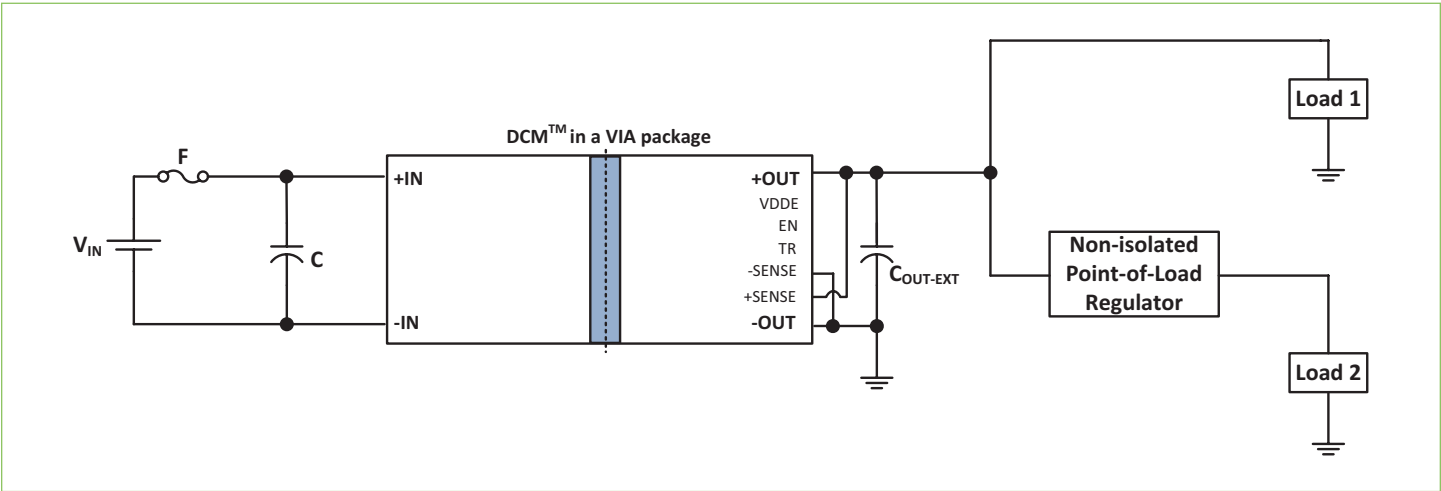
DCM Part Numbering

Product Function			Package Length	Package Width	Package Type	Internal Reference				Product Grade (Case Temperature)	Option Field	
D	C	M	37	14	x	D2	H	26	D7	y	z	z
DCM = DC-DC Converter			ChiP™		T = Through-Hole ChiP	Internal Reference				T = -40 to 125°C M = -55 to 125°C	ChiP 00 = Analog 70 = Enhanced V _{OUT} Regulation [c]	
			VIA™		B = Board VIA V = Chassis VIA					C = -20 to 100°C [a] T = -40 to 100°C [a] M = -55 to 100°C [a,b]	VIA 01 = Chassis/Analog 05 = Short Pin/Analog 09 = Long Pin/Analog	

[a] High-temperature power de-rating may apply.
[b] M-Grade available on selected models. Consult vicorpower.com for details.
[c] ±1% output voltage regulation accuracy on selected models. Consult vicorpower.com for details.

Typical Application

Single DCM3714xD2H26D7yzz in Local Sense Operation, to a non-isolated regulator, and direct to load



Block Diagram

Typical 24V input to point of load.

