

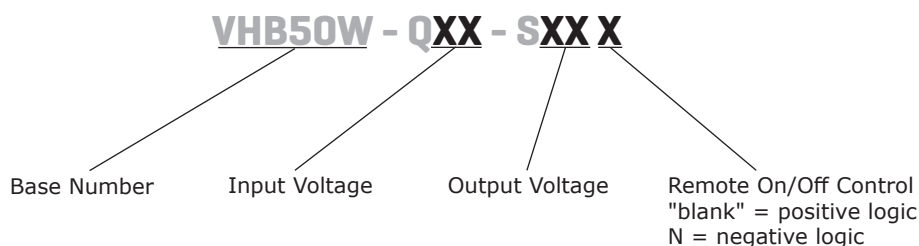
SERIES: VHB50W | DESCRIPTION: DC-DC CONVERTER
FEATURES

- up to 50 W isolated output
- industry standard half brick package
- 4:1 input range (9~36 V, 18~75 V)
- single output from 3.3~48 V
- 1,500 V isolation
- over current, over temperature, over voltage, and short circuit protections
- remote on/off
- efficiency up to 87%



MODEL	input voltage range (Vdc)	output voltage (Vdc)	output current max (A)	output power max (W)	ripple and noise ¹ max (mVp-p)	efficiency typ (%)
VHB50W-Q24-S3R3	9 ~ 36	3.3	10	33	100	77
VHB50W-Q24-S5	9 ~ 36	5	10	50	100	81
VHB50W-Q24-S12	9 ~ 36	12	4.16	50	150	83
VHB50W-Q24-S15	9 ~ 36	15	3.33	50	150	83
VHB50W-Q24-S24	9 ~ 36	24	2.08	50	240	83
VHB50W-Q24-S28	9 ~ 36	28	1.78	50	280	83
VHB50W-Q24-S48	9 ~ 36	48	1.04	50	480	83
VHB50W-Q48-S3R3	18 ~ 75	3.3	10	33	100	78
VHB50W-Q48-S5	18 ~ 75	5	10	50	100	82
VHB50W-Q48-S12	18 ~ 75	12	4.16	50	150	84
VHB50W-Q48-S15	18 ~ 75	15	3.33	50	150	84
VHB50W-Q48-S24	18 ~ 75	24	2.08	50	240	84
VHB50W-Q48-S28	18 ~ 75	28	1.78	50	280	84
VHB50W-Q48-S48	18 ~ 75	48	1.04	50	480	83

Notes: 1. ripple and noise are measured at 20 MHz BW with 10μF tantalum capacitor and 1μF ceramic capacitor across output

PART NUMBER KEY


INPUT

parameter	conditions/description		min	typ	max	units
operating input voltage	24 V input		9	24	36	Vdc
	48 V input		18	48	75	Vdc
under voltage lockout	power up	24 V input		8.8		Vdc
		48 V input		17		Vdc
	power down	24 V input		8		Vdc
		48 V input		16		Vdc
positive logic remote on/off ¹						
filter	PI type					
Notes:	1. logic compatibility, open collector ref to -input Module ON, >3.5 Vdc or open circuit Module OFF, <1.8 Vdc					

OUTPUT

parameter	conditions/description		min	typ	max	units
line regulation	measured from high line to low line				±0.2	%
load regulation	measured from full load to zero load				±0.2	%
voltage accuracy					±1	%
transient response	25% step load change				500	µs
adjustability ²				±10		%
switching frequency	100% load, input voltage range			300		kHz
temperature coefficient				±0.03		%/°C
Notes:	2. trim-up: connect a resistor between the trim pin and -Sense trim-down: connect a resistor between the trim pin and +Sense					

PROTECTIONS

parameter	conditions/description		min	typ	max	units
over voltage protection	%Vo		115		140	%
short circuit protection	continuous					
current limit	% nominal output current		110		160	%
thermal shutdown case temp.				100		°C

SAFETY AND COMPLIANCE

parameter	conditions/description		min	typ	max	units
isolation voltage	input to output		1,500			Vdc
	input to case		1,500			Vdc
	output to case		1,500			Vdc
isolation resistance			10			MΩ
isolation capacitance				1,000		pF
safety approvals	EN 62368, UL 60950					
RoHS compliant	yes					

ENVIRONMENTAL

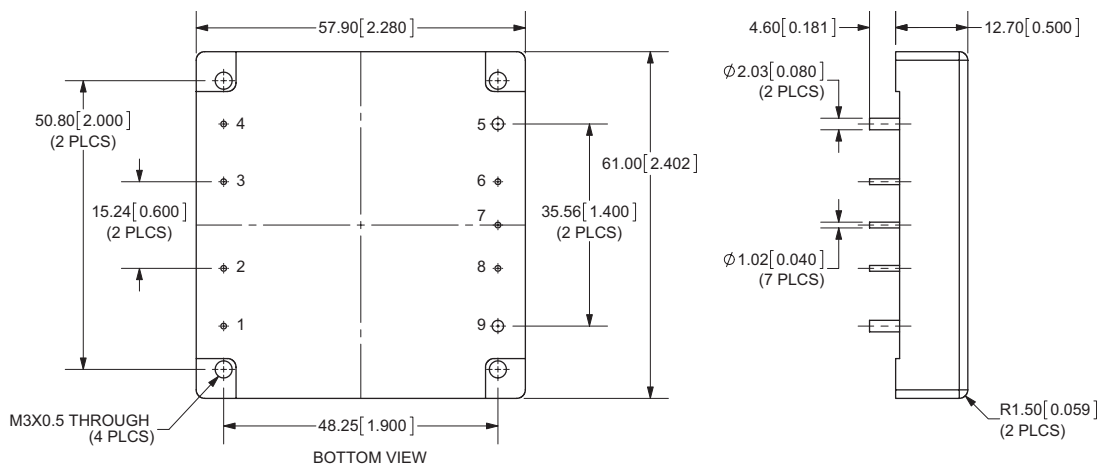
parameter	conditions/description	min	typ	max	units
case operating temperature		-40		100	°C
storage temperature		-55		105	°C
humidity	non-condensing			95	%

MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	57.9 x 61.0 x 12.7 (2.28 x 2.40 x 0.5 inch)				mm
case material	aluminum				
weight			94		g

MECHANICAL DRAWING

units: mm [inches]

tolerance: $\pm 0.25\text{mm}$ [± 0.01 inches]pin tolerance: $\pm 0.5\text{mm}$ [± 0.02 inches]

PIN CONNECTIONS	
PIN	FUNCTION
1	+Vin
2	On/Off
3	CASE
4	-Vin
5	-Vo
6	-S
7	TRIM
8	+S
9	+Vo

Note: All specifications measured at 25°C, nominal input voltage, and full load unless otherwise noted.

REVISION HISTORY

rev.	description	date
1.0	initial release	09/07/2006
1.01	new template applied	08/05/2011
1.02	add remote on/off control to the part number key	11/23/2011
1.03	features updated	12/20/2011
1.04	updated trim note, updated pin references	04/20/2012
1.05	updated spec	04/01/2013
1.06	company logo updated	02/12/2021
1.07	safety approvals and marks updated	10/05/2022

The revision history provided is for informational purposes only and is believed to be accurate.



CUI INC
a bel group

Headquarters
20050 SW 112th Ave.
Tualatin, OR 97062
800.275.4899

Fax 503.612.2383
cui.com
techsupport@cui.com

CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

CUI reserves the right to make changes to the product at any time without notice. Information provided by CUI is believed to be accurate and reliable. However, no responsibility is assumed by CUI for its use, nor for any infringements of patents or other rights of third parties which may result from its use.

CUI products are not authorized or warranted for use as critical components in equipment that requires an extremely high level of reliability. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[CUI Inc.:](#)

[VHB50W-Q48-S5](#) [VHB50W-Q24-S24](#) [VHB50W-Q24-S12](#) [VHB50W-Q48-S24](#) [VHB50W-Q24-S48](#) [VHB50W-Q24-S28](#) [VHB50W-Q24-S5](#) [VHB50W-Q48-S3R3](#) [VHB50W-Q24-S15](#) [VHB50W-Q48-S12](#) [VHB50W-Q48-S48](#) [VHB50W-Q24-S3R3](#) [VHB50W-Q48-S15](#) [VHB50W-Q48-S28](#) [VHB50W-Q48-S5N](#)