CUI INC
a bel group

SERIES: VHB150W | DESCRIPTION: DC-DC CONVERTER

FEATURES

- up to 150 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 89%



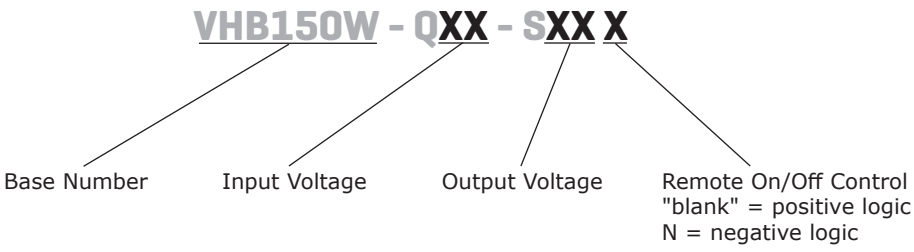
RoHS c UL us

MODEL

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 (%)
VHB150W-Q24-S3R3	9 ~ 36	3.3	30	99	100	85
VHB150W-Q24-S5	9 ~ 36	5	30	150	100	87
VHB150W-Q24-S12	9 ~ 36	12	12.5	150	150	88
VHB150W-Q24-S15	9 ~ 36	15	10	150	150	88
VHB150W-Q24-S24	9 ~ 36	24	6.50	156	240	88
VHB150W-Q24-S28	9 ~ 36	28	5.40	156	280	87
VHB150W-Q24-S48	9 ~ 36	48	3.12	150	480	84
VHB150W-Q48-S3R3	18 ~ 75	3.3	30	99	100	87
VHB150W-Q48-S5	18 ~ 75	5	30	150	100	89
VHB150W-Q48-S12	18 ~ 75	12	12.5	150	150	89
VHB150W-Q48-S15	18 ~ 75	15	10	150	150	89
VHB150W-Q48-S24	18 ~ 75	24	6.50	156	240	89
VHB150W-Q48-S28	18 ~ 75	28	5.40	156	280	88
VHB150W-Q48-S48	18 ~ 75	48	3.12	150	480	87

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 48 V input		9 18	24 48	36 75	Vdc Vdc
under voltage lockout	power up	24 V input 48 V input		8.8 17		Vdc Vdc
	power down	24 V input 48 V input		8 16		Vdc 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				±1.5	%
transient response	25% step load change			500	µs
adjustability[2]			±10		%
switching frequency	100% load, input voltage range		250		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		140	%
thermal shutdown case temp.			110		°C

SAFETY AND COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output input to case output to case	1,500 1,500 1,500			Vdc Vdc Vdc
isolation resistance		10			MΩ
isolation capacitance			1,000		pF
safety approvals	UL60950-1[3]				
RoHS compliant	yes				

Notes: 3. VHB150W-Q24-S48 and VHB150W-Q48-S48 models excluded

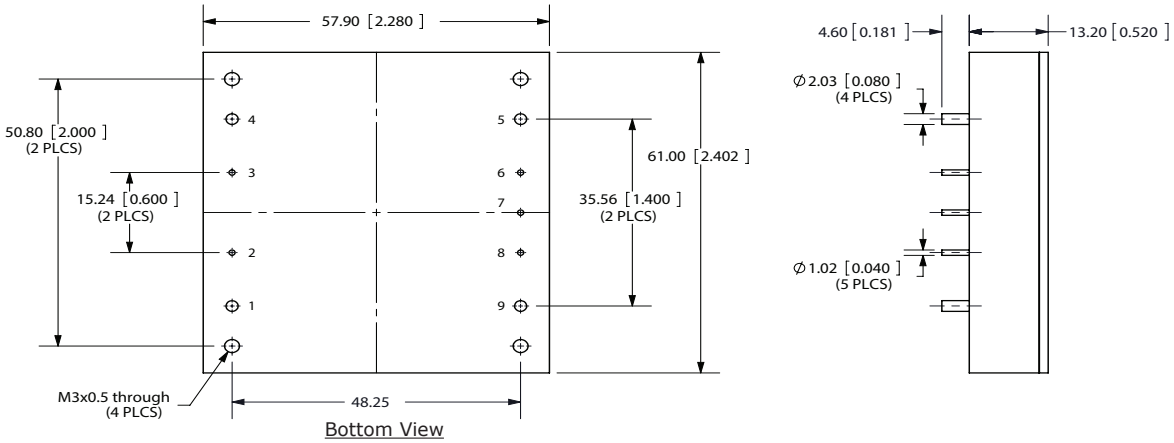
ENVIRONMENTAL

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	2.28 x 2.40 x 0.52 (57.9 x 61.0 x 13.2 mm)				inch
case material	aluminum				
weight			95		g

MECHANICAL DRAWING



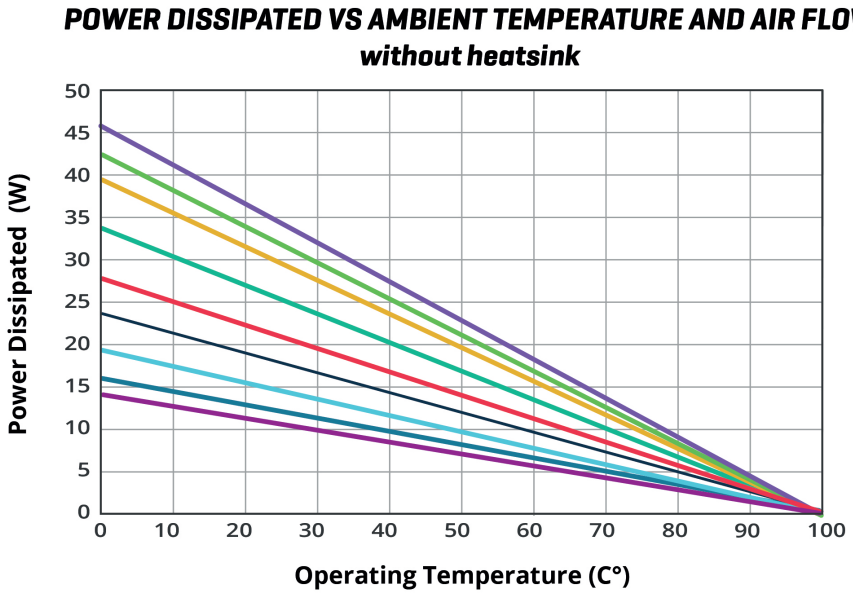
Bottom View

All dimensions in mm(inches)

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

DERATING CURVE

The operating case temperature range is -40°C to +100°C. When operating the VHB150W series, proper derating or cooling is needed. The maximum case temperature under any operating condition should not exceed 100°C.



Key

Air flow rate	Typical R_{CA}
natural convection 20ft/min (0.1m/s)	7.12 °C/W
100ft/min (0.5m/s)	6.21 °C/W
200ft/min (1.0m/s)	5.17 °C/W
300ft/min (1.5m/s)	4.29 °C/W
400ft/min (2.0m/s)	3.64 °C/W
500ft/min (2.5m/s)	2.96 °C/W
600ft/min (3.0m/s)	2.53 °C/W
700ft/min (3.5m/s)	2.37 °C/W
800ft/min (4.0m/s)	2.19 °C/W

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

REVISION HISTORY

rev.	description	date
1.0	initial release	10/01/2008
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	misc. updates and corrections	02/29/2012
1.05	V-Infinity branding removed	09/07/2012
1.06	updated spec	03/13/2013
1.07	company logo updated	02/09/2021
1.08	derating curve added	03/13/2023

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

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

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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.