CUI INC
a bel group

SERIES: VHB350 | DESCRIPTION: DC-DC CONVERTER

FEATURES

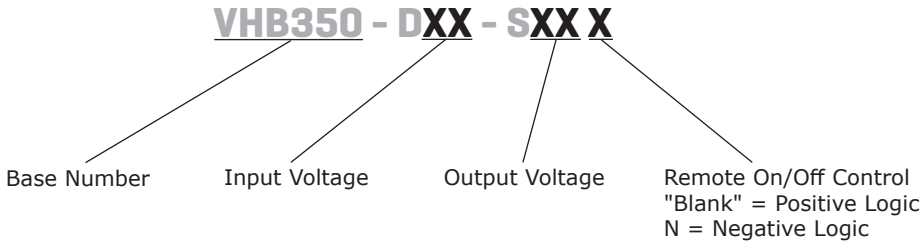
- up to 350 W isolated output
- industry standard half brick package
- 2:1 input range (18~36 V, 36~75 V)
- single output from 3.3~28 V
- 1,500 V isolation
- over current, over temperature, over voltage, and short circuit protections
- remote on/off
- efficiency up to 92.5%

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 (%)
VHB350-D24-S3R3	18 ~ 36	3.3	70	231	100	88
VHB350-D24-S5	18 ~ 36	5	70	350	100	89.5
VHB350-D24-S12	18 ~ 36	12	29.2	350	120	91.5
VHB350-D24-S24	18 ~ 36	24	14.6	350	280	90
VHB350-D24-S28	18 ~ 36	28	12.5	350	280	91
VHB350-D48-S3R3	36 ~ 75	3.3	70	231	100	89
VHB350-D48-S5	36 ~ 75	5	70	350	100	91
VHB350-D48-S12	36 ~ 75	12	29.2	350	120	92.5
VHB350-D48-S24	36 ~ 75	24	14.6	350	280	91.5
VHB350-D48-S28	36 ~ 75	28	12.5	350	280	92.5

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			18 36	24 48	36 75	Vdc Vdc
surge voltage[1]	24 V input 48 V input				50	Vdc
under voltage lockout	power up	24 V input 48 V input	16 34	17 35	18 36	Vdc Vdc
	power down	24 V input 48 V input	15 32	16 33	17 35	Vdc Vdc
over voltage protection	turn on	24 V input 48 V input		38 77		Vdc Vdc
	turn off	24 V input 48 V input		40 80		Vdc Vdc
positive logic remote on/off	see note 2					
filter	PI type					

Notes: 1. 100 ms max
2. logic compatibility, open collector ref to -input
Module ON, >3.5 to 75 Vdc or open circuit
Module OFF, <1.2 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[3]			±10		%
switching frequency	3.3 and 5 V models all other models		300 330		kHz kHz
temperature coefficient			±0.03		%/°C

Notes: 3. 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		105		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, EN60950-1				
RoHS compliant	yes				

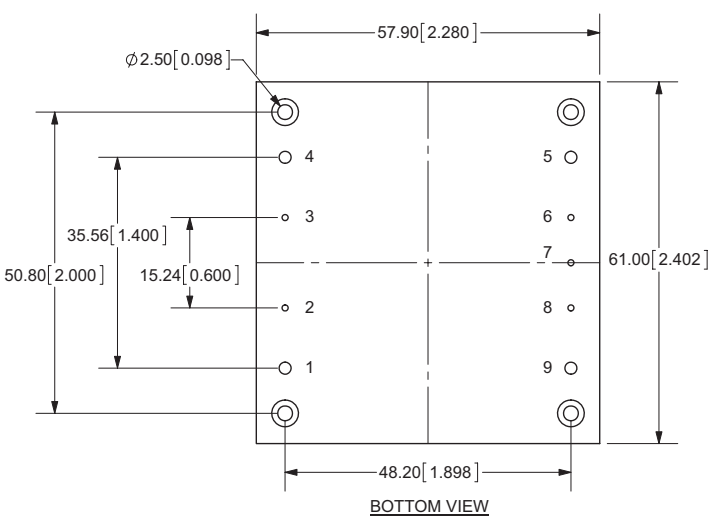
ENVIRONMENTAL

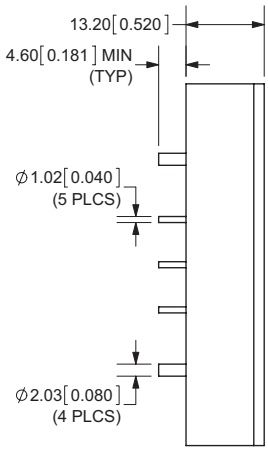
parameter	conditions/description	min	typ	max	units
case operating temperature		-40		100	°C
storage temperature		-55		105	°C
humidity	non-condensing			95	%

MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	2.28 x 2.40 x 0.52 inch (57.9 x 61.0 x 13.2 mm)				
case material	aluminum baseplate with plastic				
weight			114		g

MECHANICAL DRAWING





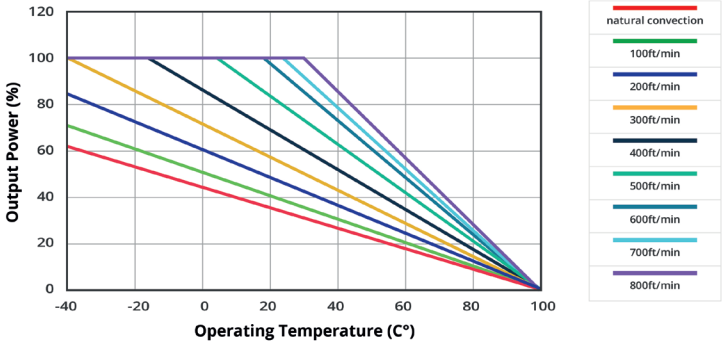
PIN CONNECTIONS	
PIN	FUNCTION
1	+Vin
2	On/Off
3	CASE
4	-Vin
5	-Vo
6	-S
7	TRIM
8	+S
9	+Vo

All dimensions in mm[inches]:

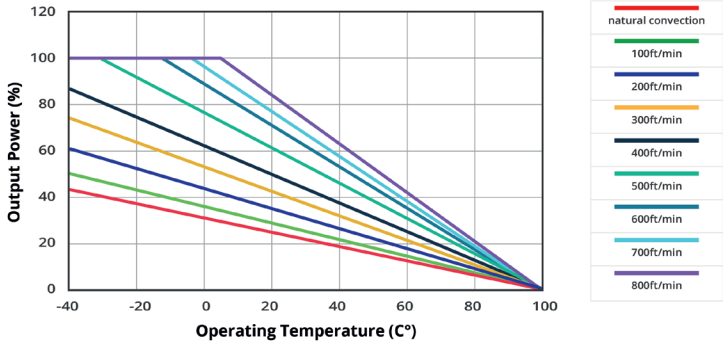
Note: All specifications measured at 25°C, nominal input voltage, and full load unless otherwise noted.

DERATING CURVES

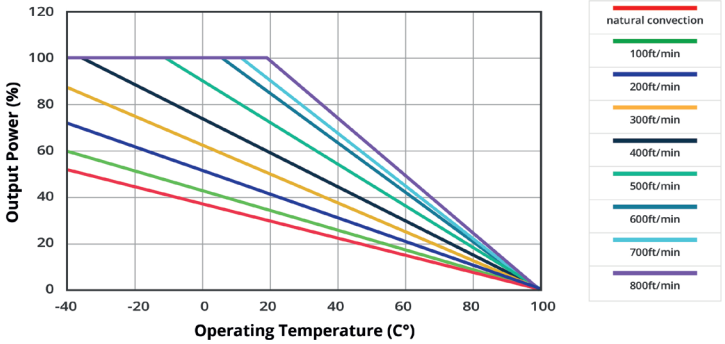
TEMPERATURE DERATING CURVE VHB350-D24-S3R3
without heatsink
(Vin = 24V)



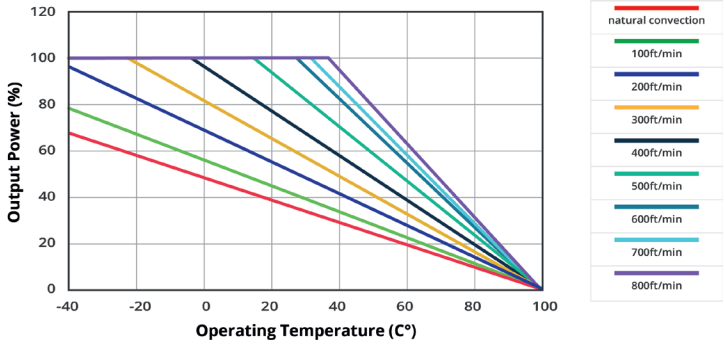
TEMPERATURE DERATING CURVE VHB350-D24-S5/S24
without heatsink
(Vin = 24V)



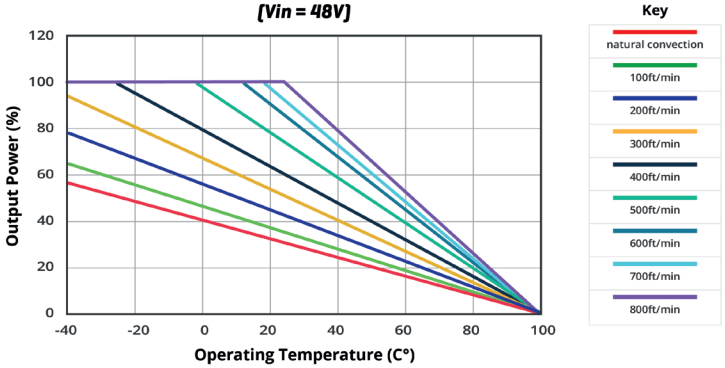
TEMPERATURE DERATING CURVE VHB350-D24-S12/S28
without heatsink
(Vin = 24V)



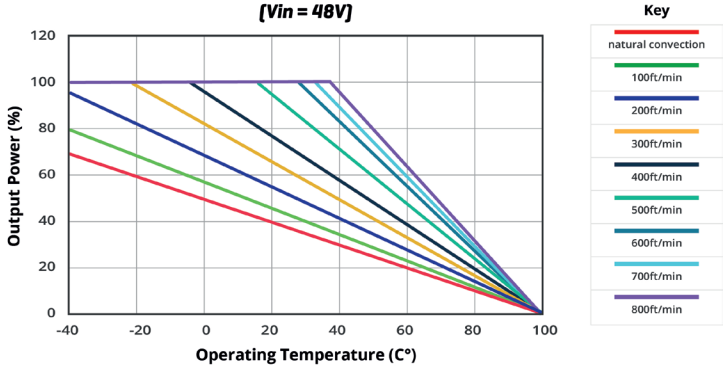
TEMPERATURE DERATING CURVE VHB350-D48-S3R3
without heatsink
(Vin = 48V)



TEMPERATURE DERATING CURVE VHB350-D48-S5
without heatsink
(Vin = 48V)

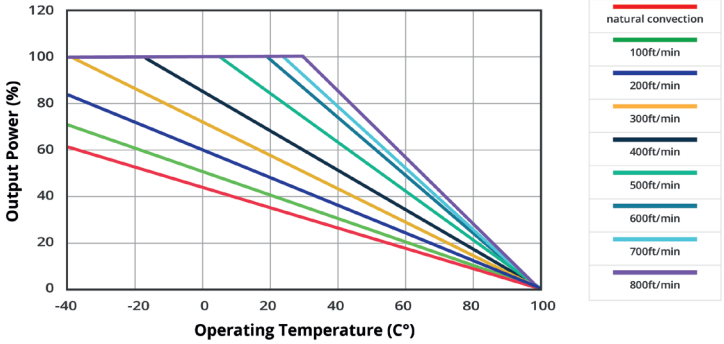


TEMPERATURE DERATING CURVE VHB350-D48-S12
without heatsink
(Vin = 48V)

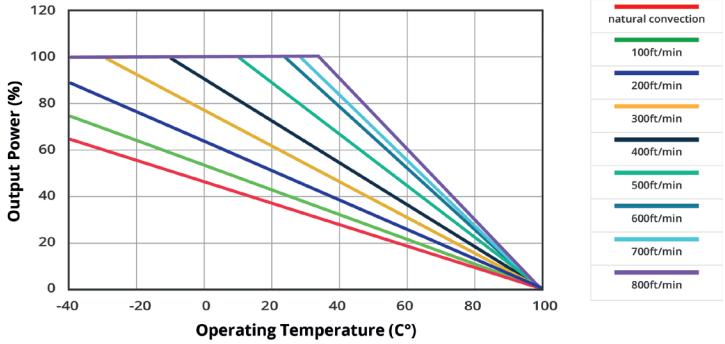


DERATING CURVES

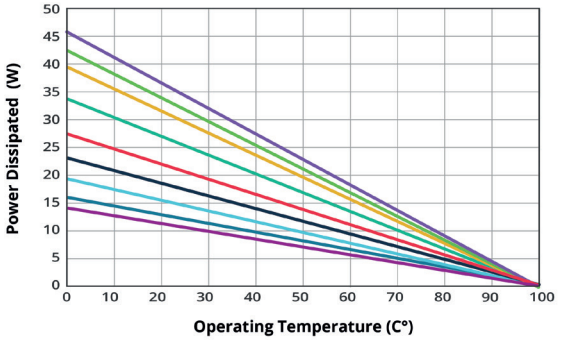
TEMPERATURE DERATING CURVE VHB350-D48-S24 without heatsink (Vin = 48V)



TEMPERATURE DERATING CURVE VHB350-D48-S28 without heatsink (Vin = 48V)



POWER DISSIPATED VS AMBIENT TEMPERATURE AND AIR FLOW without heatsink



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

REVISION HISTORY

rev.	description	date
1.0	initial release	06/01/2011
1.01	add remote on/off control to the part number key	11/23/2011
1.02	V-Infinity branding removed	08/30/2012
1.03	updated spec	03/14/2013
1.04	company logo updated	02/09/2021
1.05	power dissipation curve added	04/28/2023
1.06	temperature derating curves added	08/16/2023

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.

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.

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