



## SERIES: VHB100W | DESCRIPTION: DC-DC CONVERTER

### FEATURES

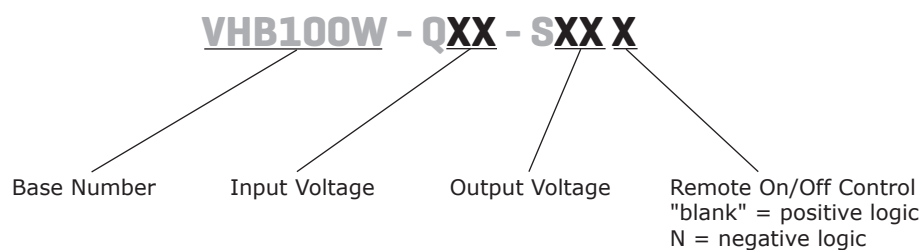
- up to 100 W isolated output
- industry standard half brick package
- 4:1 input range (9~36 V, 18~75 V)
- single output from 3.3~48 V
- 1,500 V isolation
- over current, over temperature, over voltage, and short circuit protections
- remote on/off
- efficiency up to 89%



MODEL	input voltage range (Vdc)	output voltage (Vdc)	output current max (A)	output power max (W)	ripple and noise <sup>1</sup> max (mVp-p)	efficiency  typ (%)
VHB100W-Q24-S3R3	9 ~ 36	3.3	20	66	100	81.5
VHB100W-Q24-S5	9 ~ 36	5	20	100	100	83.5
VHB100W-Q24-S12	9 ~ 36	12	8.3	100	150	85
VHB100W-Q24-S15	9 ~ 36	15	6.7	100	150	86.5
VHB100W-Q24-S24	9 ~ 36	24	4.17	100	240	86
VHB100W-Q24-S28	9 ~ 36	28	3.57	100	280	86
VHB100W-Q24-S48	9 ~ 36	48	2.08	100	480	85
VHB100W-Q48-S3R3	18 ~ 75	3.3	20	66	100	80.5
VHB100W-Q48-S5	18 ~ 75	5	20	100	100	86
VHB100W-Q48-S12	18 ~ 75	12	8.3	100	150	86.5
VHB100W-Q48-S15	18 ~ 75	15	6.7	100	150	87.5
VHB100W-Q48-S24	18 ~ 75	24	4.17	100	240	88
VHB100W-Q48-S28	18 ~ 75	28	3.57	100	280	88
VHB100W-Q48-S48	18 ~ 75	48	2.08	100	480	88

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			9 18	24 48	36 75	Vdc Vdc
surge voltage <sup>1</sup>	24 V input 48 V input				50 100	Vdc 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 <sup>2</sup>						
filter	PI type					

Notes:

1. 100 ms max
2. 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 <sup>3</sup>				±10		%
switching frequency	100% load, input voltage range			250		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	% nominal output current		110		140	%
thermal shutdown case temp.				105		°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				1,500		pF
safety approvals	UL60950-1					
RoHS compliant	yes					

## ENVIRONMENTAL

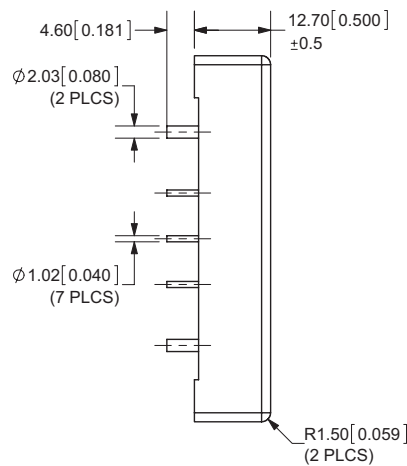
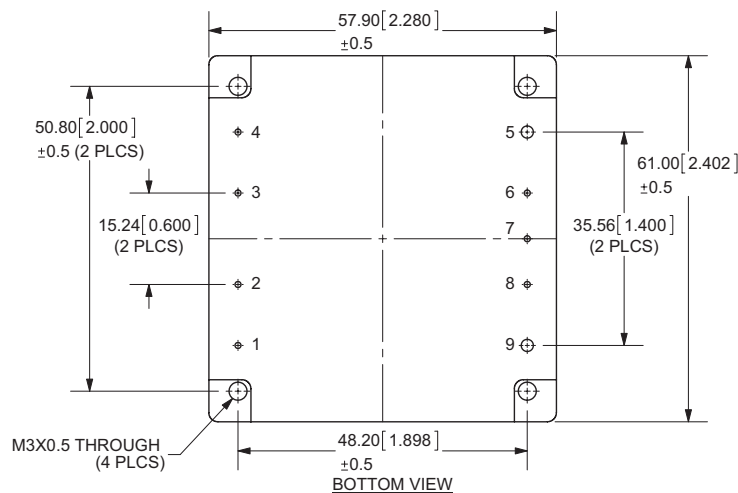
parameter	conditions/description	min	typ	max	units
case operating temperature		-40		100	°C
storage temperature		-55		105	°C
humidity	non-condensing			95	%

## MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	57.9 x 61.0 x 12.7 (2.28 x 2.40 x 0.5 inch)				mm
case material	aluminum				
weight			95		g

## MECHANICAL DRAWING

units: mm [inches]

tolerance:  $\pm 0.25\text{mm}$  [ $\pm 0.01$  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	10/01/2008
1.01	new template applied	08/17/2011
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	04/23/2012
1.05	updated spec	04/01/2013

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



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