



**SERIES:** VHE100W | **DESCRIPTION:** DC-DC CONVERTER

**FEATURES**

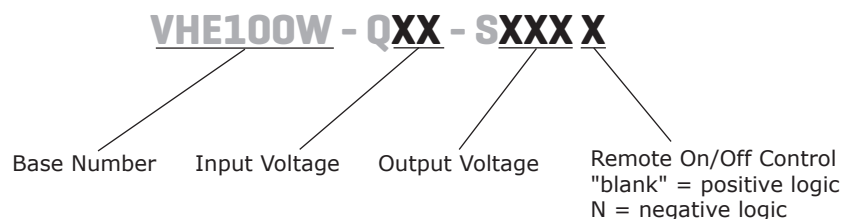
- up to 100 W isolated output
- industry standard half brick package
- 4:1 input range (9~36 V, 18~75 V)
- single output from 3.3~48 V
- 1,500 V isolation
- tantalum free capacitors used
- over current, over temperature, over voltage, and short circuit protections
- remote on/off
- very high efficiency up to 93%



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 (%)
VHE100W-Q24-S3R3	9 ~ 36	3.3	25	82.5	100	87
VHE100W-Q24-S5	9 ~ 36	5	20	100	100	89.5
VHE100W-Q24-S12	9 ~ 36	12	8.4	100	120	90.5
VHE100W-Q24-S15	9 ~ 36	15	6.7	100	120	90.5
VHE100W-Q24-S24	9 ~ 36	24	4.2	100	240	89
VHE100W-Q24-S48	9 ~ 36	48	2.1	100	480	88.5
VHE100W-Q48-S3R3	18 ~ 75	3.3	25	82.5	100	88
VHE100W-Q48-S5	18 ~ 75	5	20	100	100	92
VHE100W-Q48-S12	18 ~ 75	12	8.4	100	120	93
VHE100W-Q48-S15	18 ~ 75	15	6.7	100	120	92.5
VHE100W-Q48-S24	18 ~ 75	24	4.2	100	240	91
VHE100W-Q48-S48	18 ~ 75	48	2.1	100	480	90.5

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

- Notes:
- logic compatibility, open collector ref to -input  
Module ON, 3.5 ~ 75 Vdc or open circuit  
Module OFF, <1.2 Vdc
  - negative logic remote on/off available  
Module ON, <1.2 Vdc current limit, 110~165% nominal output  
Module OFF, 3.5 ~ 75 Vdc or open circuit

## 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			±10		%
switching frequency	100% load, input voltage range		250		kHz
temperature coefficient			±0.03		%/°C

## 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

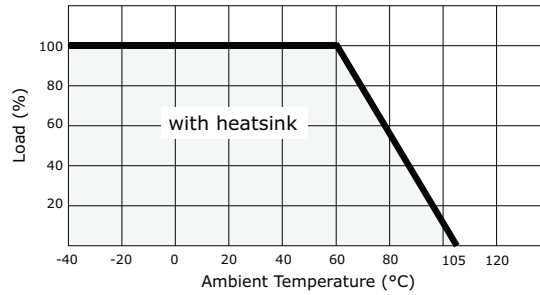
## SAFETY AND COMPLIANCE

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			1,000		pF
safety approvals	UL 60950-1, CE				
RoHS compliant	yes				
MTBF	MIL-STD-217F, GB, 25°C, full load		TBD		hours

## ENVIRONMENTAL

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

## DERATING CURVE



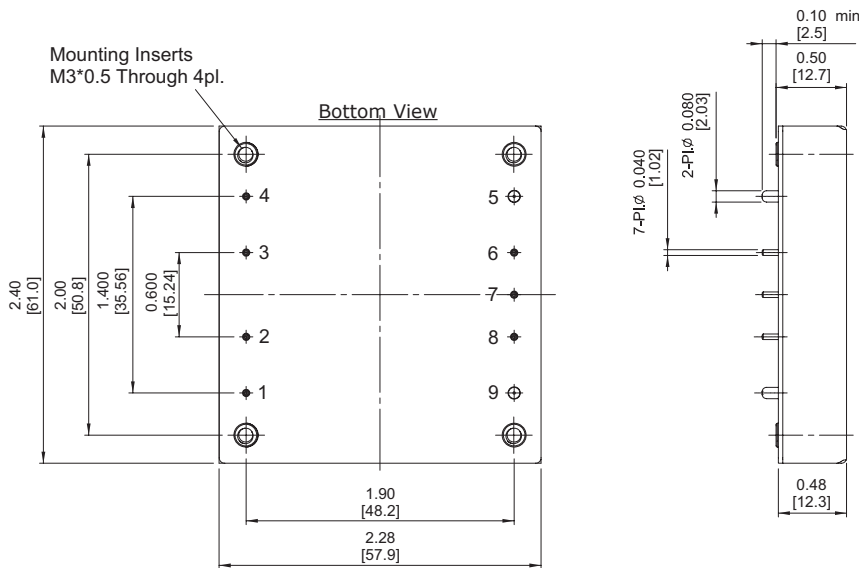
## MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	2.28 x 2.40 x 0.50 (57.9 x 61.0 x 12.7 mm)				inch
case material	aluminum				
weight			95		g

## MECHANICAL DRAWING

units: inches[mm]

TOLERANCE:  
 inches: X.XX = ±0.02  
           X.XXX = ±0.010  
 mm: X.XX = ±0.5  
       X.XXX = ±0.25



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

## REVISION HISTORY

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rev.	description	date
1.0	initial release	08/22/2012
1.01	added negative logic option to part number key	02/14/2013

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



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