

SERIES: VHK50W | **DESCRIPTION:** DC-DC CONVERTER

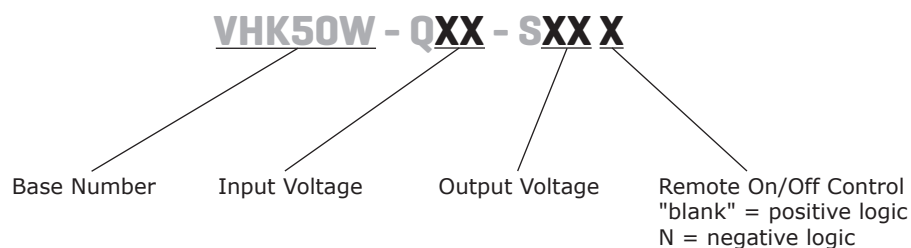
FEATURES

- up to 50 W isolated output
- rugged metal enclosure with integrated heat sink
- 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 83%



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 (%)
VHK50W-Q24-S3R3	9 ~ 36	3.3	10	33	100	75
VHK50W-Q24-S5	9 ~ 36	5	10	50	100	79
VHK50W-Q24-S12	9 ~ 36	12	4.16	50	150	82
VHK50W-Q24-S15	9 ~ 36	15	3.33	50	150	82
VHK50W-Q24-S24	9 ~ 36	24	2.08	50	240	82
VHK50W-Q24-S28	9 ~ 36	28	1.78	50	280	82
VHK50W-Q24-S48	9 ~ 36	48	1.04	50	480	82
VHK50W-Q48-S3R3	18 ~ 75	3.3	10	33	100	76
VHK50W-Q48-S5	18 ~ 75	5	10	50	100	80
VHK50W-Q48-S12	18 ~ 75	12	4.6	50	150	83
VHK50W-Q48-S15	18 ~ 75	15	3.33	50	150	83
VHK50W-Q48-S24	18 ~ 75	24	2.08	50	240	83
VHK50W-Q48-S28	18 ~ 75	28	1.78	50	280	83
VHK50W-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				9	24	36	Vdc
				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
remote on/off ¹							
filter		PI type					
Notes:	1. logic compatibility, open collector ref to -input Module ON, >2.4 Vdc or open circuit Module OFF, <0.8 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				±1	%
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	%
over current protection	% nominal output current	110		160	%
short circuit protection	continuous				

SAFETY AND COMPLIANCE

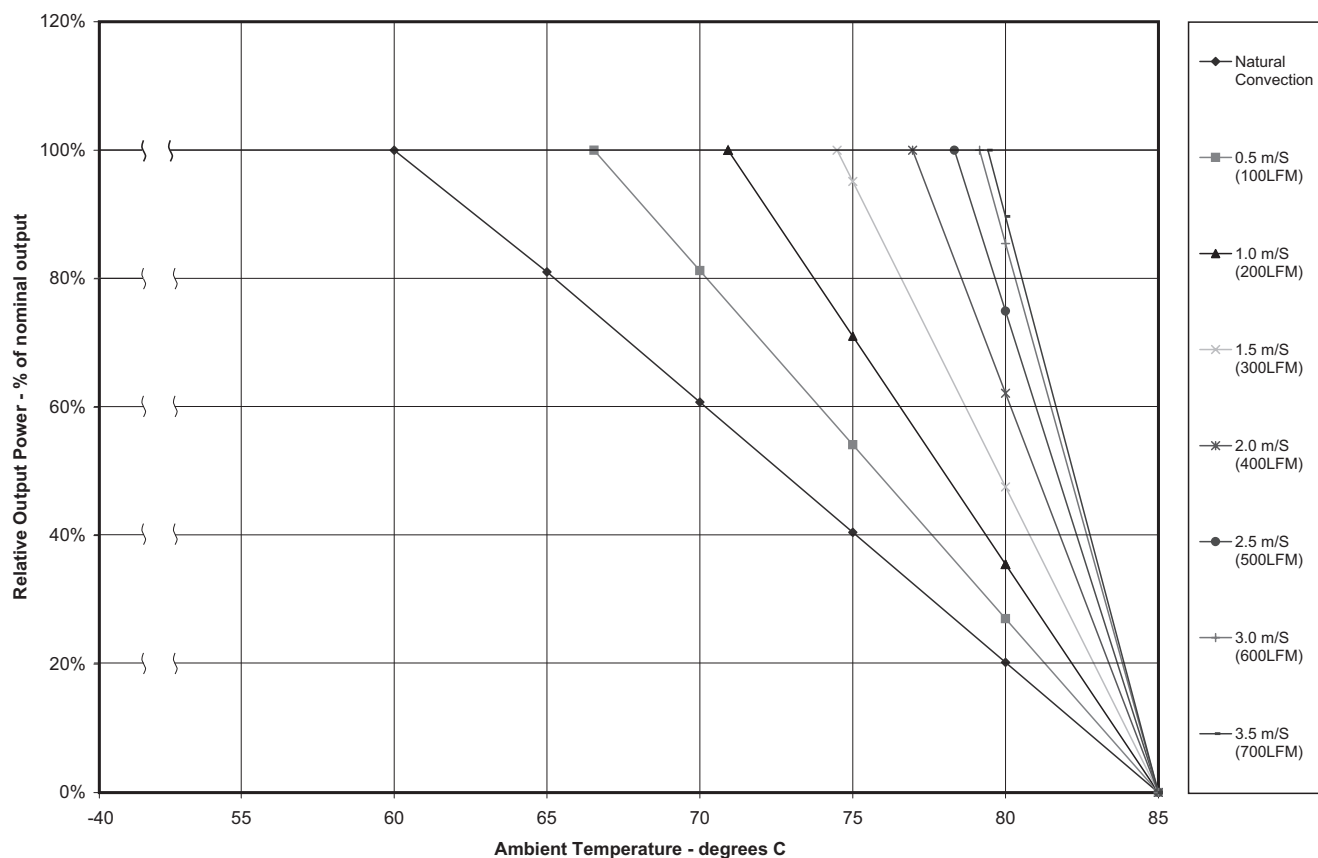
parameter	conditions/description	min	typ	max	units
isolation voltage	input to output	1,500			Vdc
	input to case	1,500			Vdc
	output to case	1,500			Vdc
isolation resistance		100			MΩ
RoHS compliant	yes				

ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
case operating temperature	see derating curve	-40		85	°C
storage temperature		-55		105	°C

DERATING CURVES

VHK50W POWER DERATING CURVES AT NOMINAL INPUT

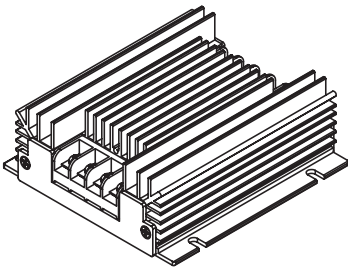


MECHANICAL

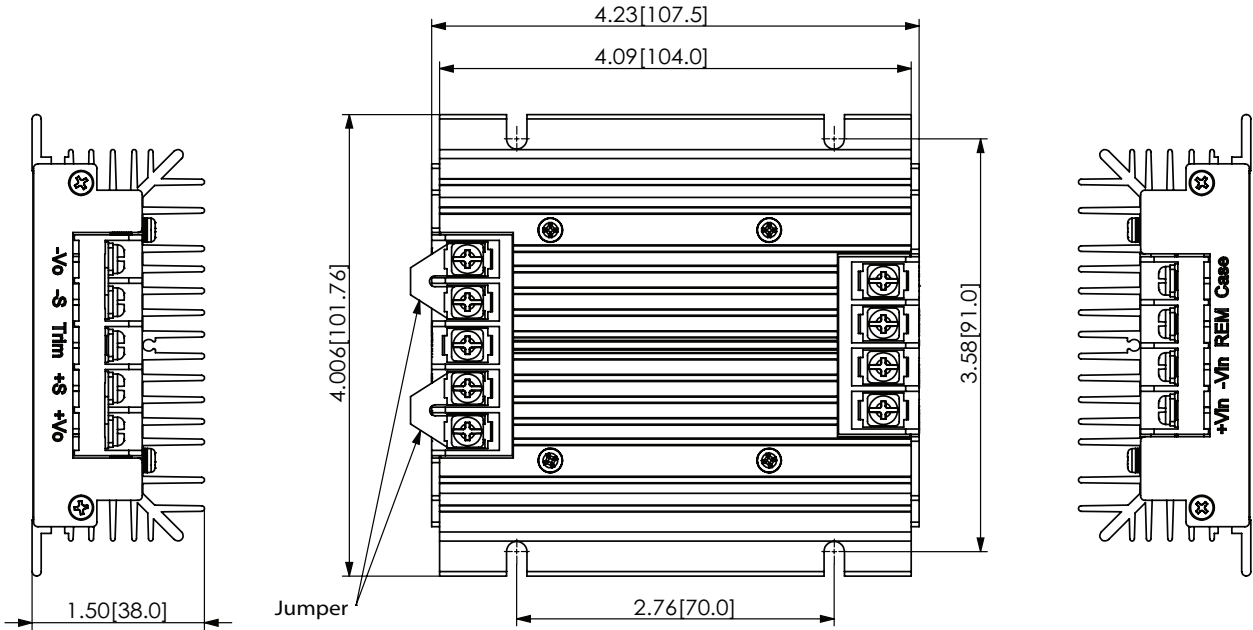
parameter	conditions/description	min	typ	max	units
dimensions	101.76 x 107.5 x 38.0 (3.34 x 4.232 x 1.50 inch)				mm
case material	steel and aluminum extrusion				
weight			502		g

MECHANICAL DRAWING

units: mm[inch]
tolerance:
X.X = ±0.3mm
X.XX = ±0.25mm



PIN CONNECTIONS	
PIN	FUNCTION
1	-Vo
2	-S
3	trim
4	+S
5	+Vo
6	case
7	on/off
8	-Vin
9	+Vin



*DIN rail mounting kit available (part# VHK-DIN)

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	10/11/2006
1.01	new template applied	12/21/2011
1.02	misc. updates and corrections	03/13/2012
1.03	updated mechanical drawing	03/27/2012
1.04	V-Infinity branding removed	06/27/2012
1.05	updated spec	03/14/2013

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



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