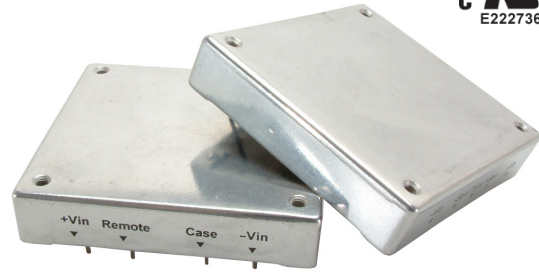




## Features

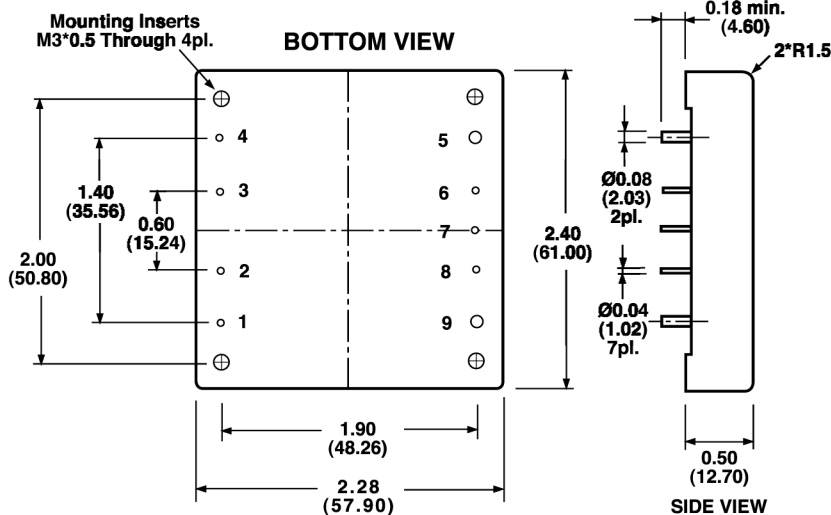
- 50-100W isolated output
- Efficiency to 85%
- 500KHz switching frequency
- 2:1 input range
- Regulated outputs
- Continuous short circuit protection
- Five-sided metal case
- Industry standard half-brick package



Model Number	Input Voltage	Output Voltage	Output Current	Input Current		Efficiency
				No Load	Full Load	
VHB100-D24-S2R5	18-36VDC	2.5VDC	20A	50mA	2705mA	77%
VHB100-D24-S3R3	18-36VDC	3.3VDC	20A	50mA	3480mA	79%
VHB100-D24-S5	18-36VDC	5VDC	20A	50mA	5020mA	83%
VHB100-D24-S12	18-36VDC	12VDC	8.3A	50mA	4880mA	85%
VHB100-D24-S15	18-36VDC	15VDC	6.7A	50mA	4925mA	85%
VHB100-D24-S24	18-36VDC	24VDC	4.17A	50mA	4905mA	85%
VHB100-D48-S2R5	36-75VDC	2.5VDC	20A	50mA	1335mA	78%
VHB100-D48-S3R3	36-75VDC	3.3VDC	20A	50mA	1720mA	80%
VHB100-D48-S5	36-75VDC	5VDC	20A	50mA	2480mA	84%
VHB100-D48-S12	36-75VDC	12VDC	8.3A	50mA	2442mA	85%
VHB100-D48-S15	36-75VDC	15VDC	6.7A	50mA	2463mA	85%
VHB100-D48-S24	36-75VDC	24VDC	4.17A	50mA	2463mA	85%

All Dimensions In Inches(mm)

Tolerances	Inches	.XX±.02	.XXX±.010	Pin ±0.02
	Millimeters	.X±.5	.XX±.250	±0.5



## Pin Connection

Pin	Function
1.	+Vin
2.	ON/OFF
3.	Case
4.	-Vin
5.	-Vout
6.	-Sense
7.	Trim
8.	+Sense
9.	+Vout

## Input

Input Voltage Range	24V	18-36V
	48V	36-75V
Under Voltage Lockout	24Vin power up	17V
	24Vin power down	16V
	48Vin power up	34V
	48Vin power down	32.5V
Positive Logic Remote ON/OFF	Logic Compatibility: Open Collector reference to -Vin Module ON: Open Circuit Module OFF: < 0.8VDC	
Input Filter	PI Type	

## Output

Voltage Accuracy	±1% max.	
Transient Response: 25% Step Load Change	<500μ sec.	
External Trim Adj. Range	±10%	
Ripple & Noise	20MHz BW, 2.5V, 3.3V, 5V	40mV RMS., max 100mV pk-pk, max
	12V& 15V	60mV RMS., max 150mV pk-pk, max
	24V	100mV RMS., max
		240mV pk-pk, max.
Temperature Coefficient	±0.03%/°C	
Short Circuit Protection	Continuous	
Safety	approved to UL60950 (E222736)	
Line Regulation <sup>1</sup>	±0.2% max	
Load Regulation <sup>2</sup>	±0.2% max	
Over Voltage Protection trip Range, % Vo nom.	115-140%	
Current Limit	110-140% Nominal Output	

## General Specifications

Efficiency	see table	
Isolation Voltage	Input/Output	1500VDC min.
	Input/Case	1500VDC min.
	Output/Case	1500VDC min.
Isolation Resistance	10 <sup>7</sup> Ohm min.	
Switching Frequency	500KHz, Typ.	
Operating Case Temperature	-40°C to 100°C	
Storage Temperature	-40°C to 105°C	
Thermal Shutdown, Case Temp.	100°C Typ.	
Dimensions	2.28x2.40x0.50 inches	
	57.9x61.0x12.7mm	
Case Material	aluminum	

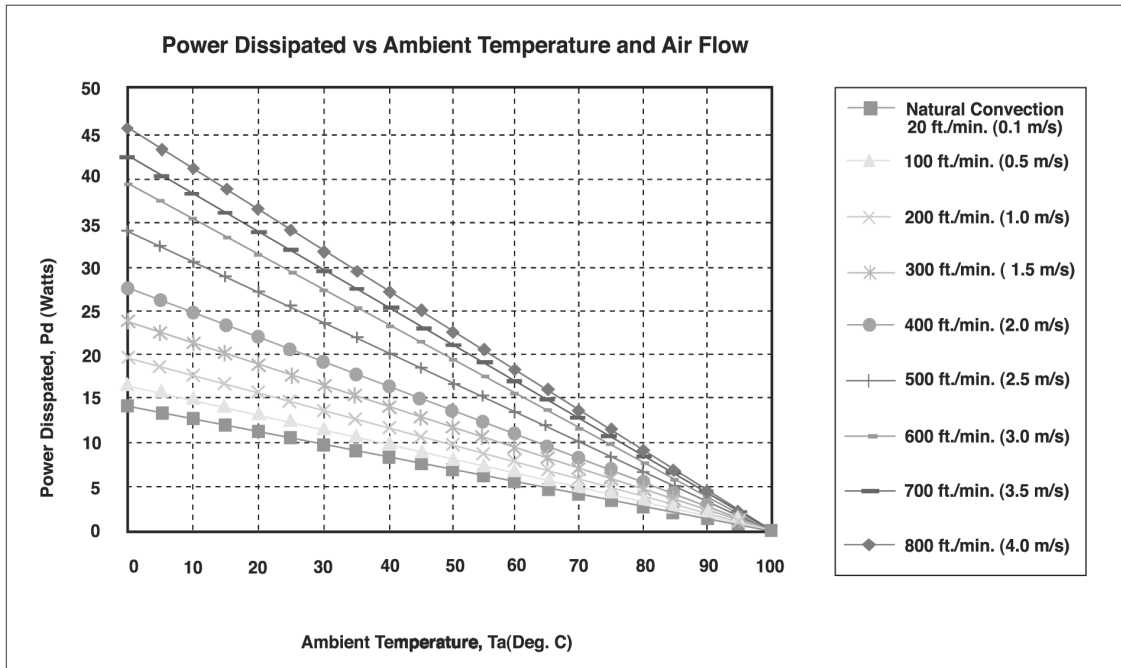
### NOTES:

1. Measured from High Line to Low Line
2. Measured from Full Load to Zero Load
3. Logic Compatibility: Open Collector Ref. to -Input  
Module ON: Open Circuit  
Module OFF: <0.8 VDC
4. Suffix "N" to the Model Number with Negative Logic Remote ON/OFF

## Application Notes

### Derating:

The operating case temperature range of the VHB75 series is -40°C to +100°C. When operating the VHB75, proper derating or cooling is needed. Following is the derating curve of VHB75 without heat sink.



Forced Convection Power Derating without Heat Sink

Where:

The power dissipation (P<sub>d</sub>) is

$$P_d = P_i - P_o = P_o (1 - \eta) / \eta$$

The thermal resistances are listed below.

Chart of Thermal Resistance vs Air Flow:

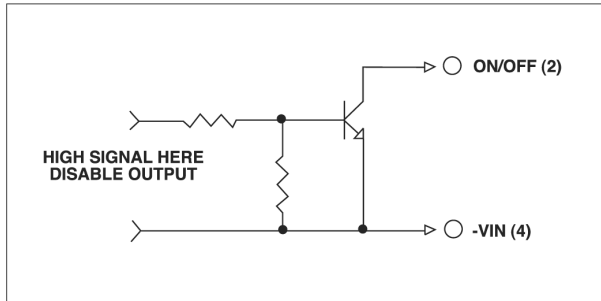
AIR FLOW RATE	TYPICAL R <sub>ca</sub>
Natural Convection 20ft./min. (0.1m/s)	7.12 °C/W
100 ft./min. (0.5m/s)	6.21 °C/W
200 ft./min. (1.0m/s)	5.17 °C/W
300 ft./min. (1.5m/s)	4.29 °C/W
400 ft./min. (2.0m/s)	3.64 °C/W
500 ft./min. (2.5m/s)	2.96 °C/W
600 ft./min. (3.0m/s)	2.53 °C/W
700 ft./min. (3.5m/s)	2.37 °C/W
800 ft./min. (4.0m/s)	2.19 °C/W

The temperature rise (ΔT):

$$\Delta T = P_d * R_{ca}$$

## Remote On/Off Control

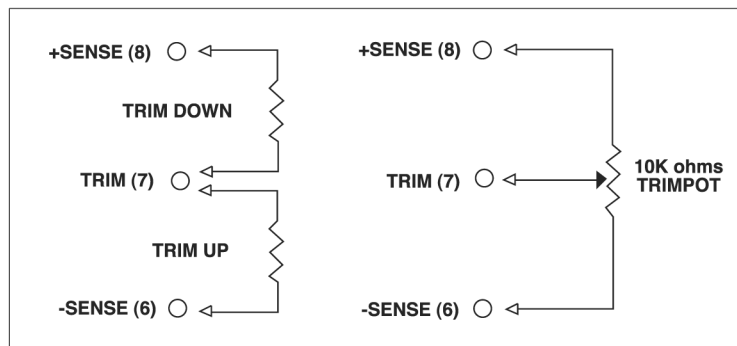
The VHB75 series allows the user to switch the module on and off electronically with the remote on/off feature. Logic control defaults to "positive" logic. The diagram shows the recommended circuits for positive logic. The "negative logic" option is also available.


**Logic Table**

Logic State (PIN 2)	Negative Logic	Positive Logic
Logic Low - Switch Closed	Module on	Module off
Logic High - Switch Open	Module off	Module on

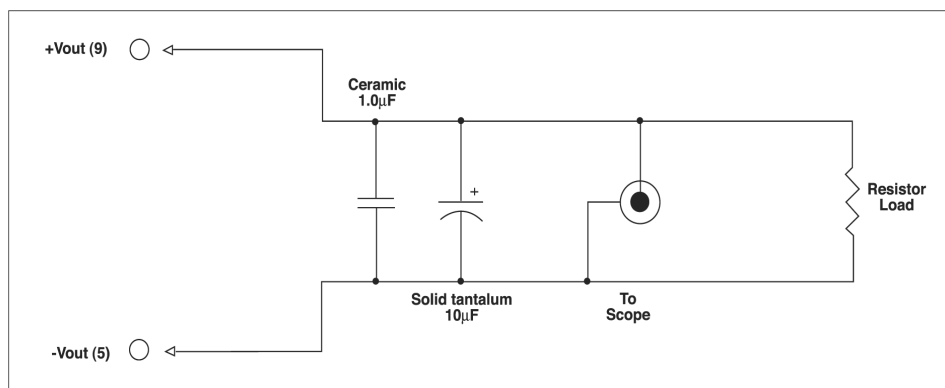
## External Output Trimming

Output may optionally be trimmed ( $\pm 10\%$ ) with external fixed resistors or an external trimpot as shown.



## Output Noise

The output noise is measured with a 10uF tantalum capacitor and a 1.0uF ceramic capacitor across the output.



Output Noise Test Circuit schematic