

Features

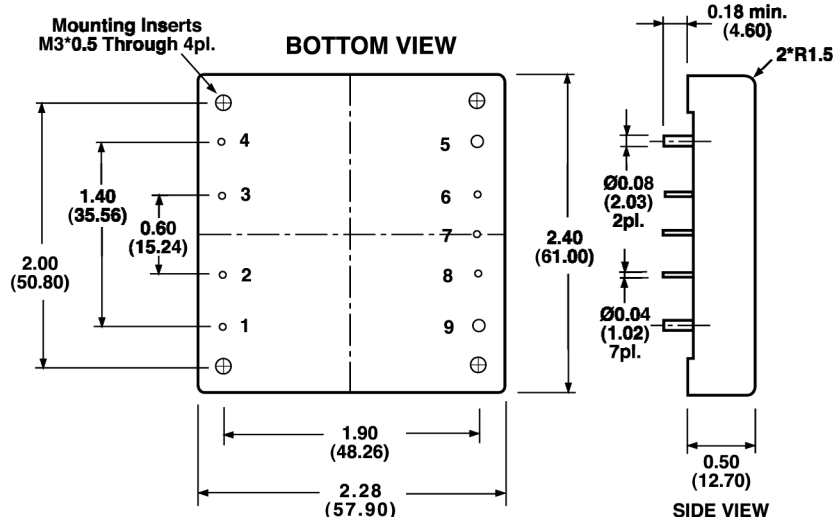
- 50-100W isolated output
- Efficiency to 85%
- 500KHz switching frequency
- 2:1 input range
- Regulated outputs
- Continuous short circuit protection
- Five-sided metal case
- Industry standard half-brick package



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 ¹	±0.2% max	
Load Regulation ²	±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 ⁷ 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	

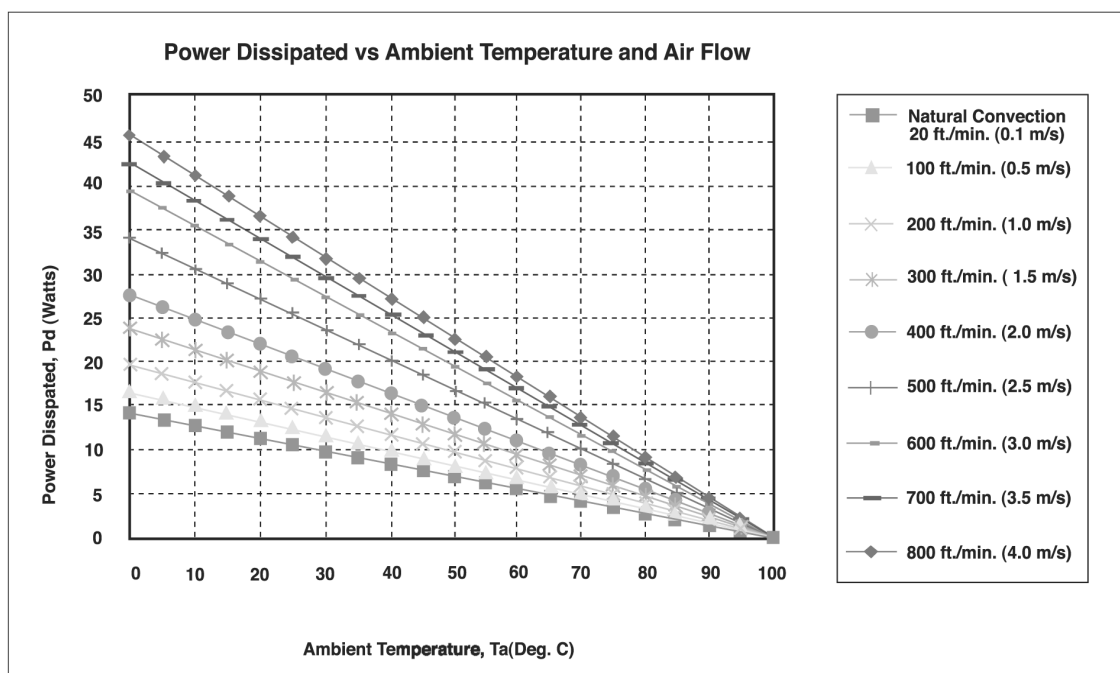
NOTES:

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 (Pd) 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:

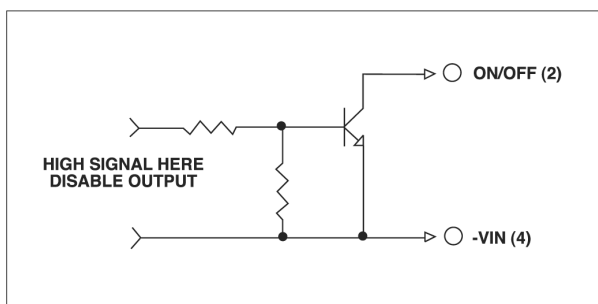
AIR FLOW RATE	TYPICAL R _{ca}
Natural Convection 20ft./min. (0.1m/s)	7.12 °C/W
100 ft./min. (0.5m/s)	6.21 °C/W
200 ft./min. (1.0m/s)	5.17 °C/W
300 ft./min. (1.5m/s)	4.29 °C/W
400 ft./min. (2.0m/s)	3.64 °C/W
500 ft./min. (2.5m/s)	2.96 °C/W
600 ft./min. (3.0m/s)	2.53 °C/W
700 ft./min. (3.5m/s)	2.37 °C/W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

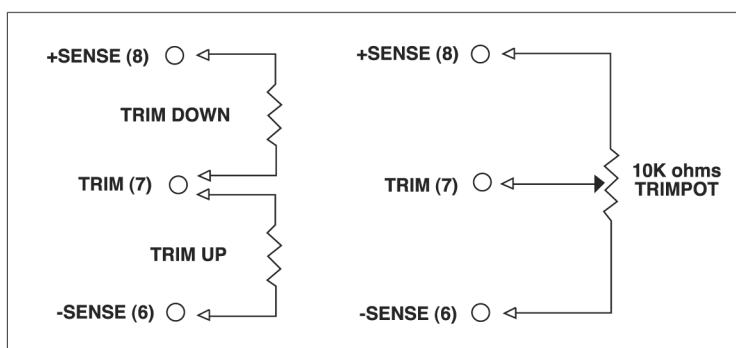


Logic Table

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

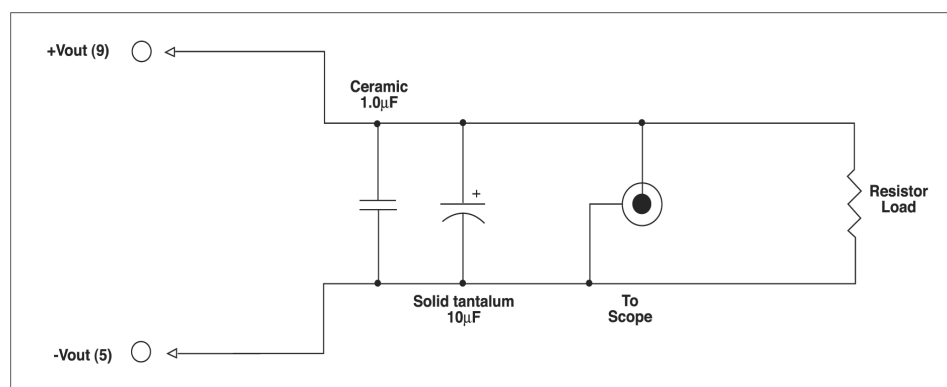
External Output Trimming

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