



Features

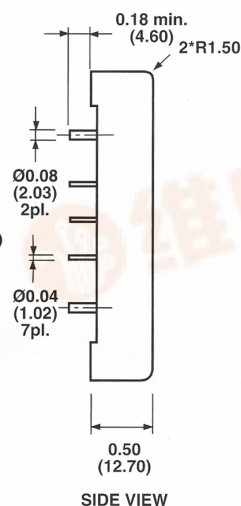
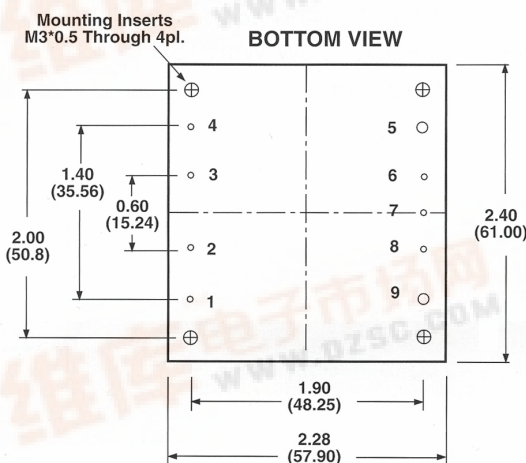
- 37.5W-75W isolated output
- Efficiency to 85%
- 300KHz switching frequency
- 4:1 input range
- Regulated outputs
- Continuous short circuit protection
- Industry standard half-brick package
- Five-sided metal case



Model Number	Input Voltage	Output Voltage	Output Current	Input Current		Efficiency
				No Load	Full Load	
VHB75W-Q24-S3R3	9-36 VDC	3.3 VDC	15 A	50 mA	2611 mA	79%
VHB75W-Q24-S5	9-36 VDC	5 VDC	15 A	50 mA	3811 mA	82%
VHB75W-Q24-S12	9-36 VDC	12 VDC	6.25 A	50 mA	3765 mA	83%
VHB75W-Q24-S15	9-36 VDC	15 VDC	5 A	50 mA	3720 mA	84%
VHB75W-Q24-S24	9-36 VDC	24 VDC	3.12 A	50 mA	3720 mA	84%
VHB75W-Q48-S3R3	18-75 VDC	3.3 VDC	15 A	50 mA	1320 mA	78%
VHB75W-Q48-S5	18-75 VDC	5 VDC	15 A	50 mA	1905 mA	82%
VHB75W-Q48-S12	18-75 VDC	12 VDC	6.25 A	50 mA	1860 mA	84%
VHB75W-Q48-S15	18-75 VDC	15 VDC	5 A	50 mA	1860 mA	84%
VHB75W-Q48-S24	18-75 VDC	24 VDC	3.12 A	50 mA	1860 mA	84%

All Dimensions In Inches(mm)

Tolerances	Inches	.XX±.02	.XXX±.010	Pin
	Millimeters	.X±.5	.XX±.25	±0.02 ±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:	9-36V
	48V:	18-75V
Under Voltage Lockout	24V:	power up 8.8V power down 8V
	48Vin:	power up 17V power down 16V
ON/OFF Control	see notes 3&4	
Input Filter	PI Type	

Output

Voltage Accuracy	±1% max.	
Transient Response: 25% Step Load Change	<500μ sec.	
External Trim Adj. Range	±10%	
Ripple & Noise	3.3V, 5V	40mV RMS., max
	20MHz BW	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 UL60950-1 (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%-160% 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	300KHz, Typ	
Operating Case Temperature	-40°C to +100°C	
Storage Temperature	-55°C to +105°C	
Thermal Shutdown, Case Temp.	100°C Typ.	
Dimensions	2.28x2.40x0.50 inches (57.9x61.0x12.7mm)	
Case Material	aluminum	

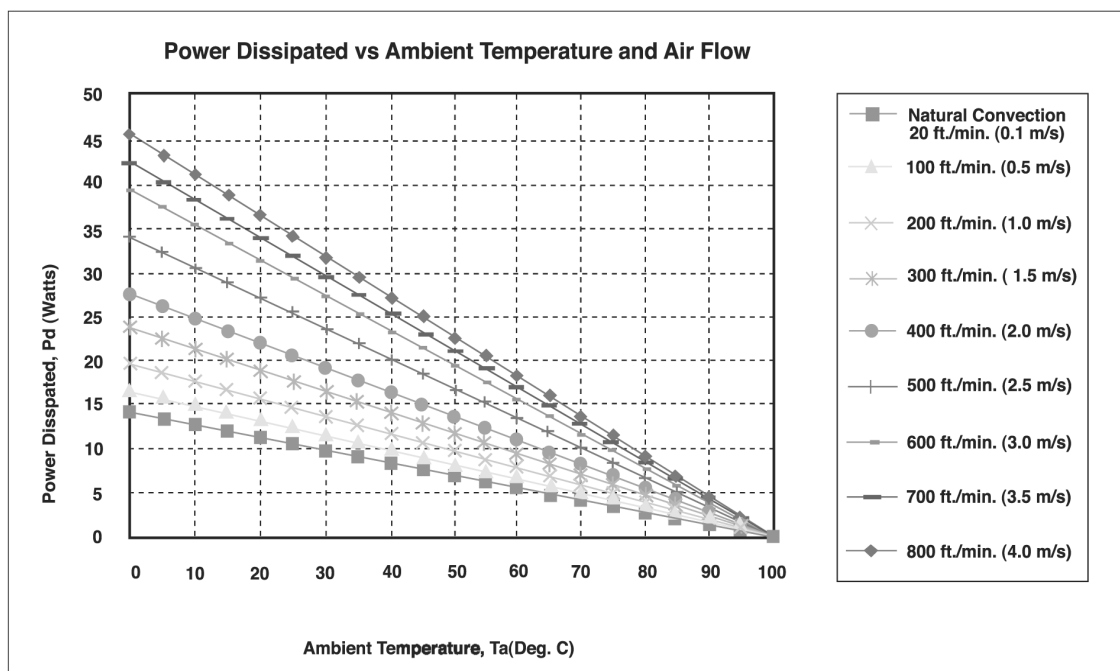
NOTES:

1. Measured from high line to low line
2. Measured from full load to zero load
3. On/Off Control: Positive logic default. Referenced to -Vin. Open collector.
Module ON...open circuit
Module OFF...<0.8Vdc
4. For negative logic On/Off control, add suffix "N" to the model number

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:

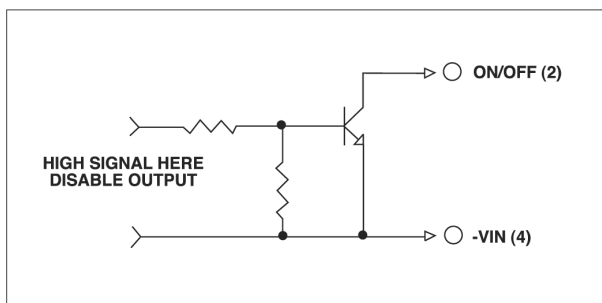
AIR FLOW RATE	TYPICAL R _{ca}
Natural Convection 20ft./min. (0.1m/s)	7.12 °C/W
100 ft./min. (0.5m/s)	6.21 °C/W
200 ft./min. (1.0m/s)	5.17 °C/W
300 ft./min. (1.5m/s)	4.29 °C/W
400 ft./min. (2.0m/s)	3.64 °C/W
500 ft./min. (2.5m/s)	2.96 °C/W
600 ft./min. (3.0m/s)	2.53 °C/W
700 ft./min. (3.5m/s)	2.37 °C/W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

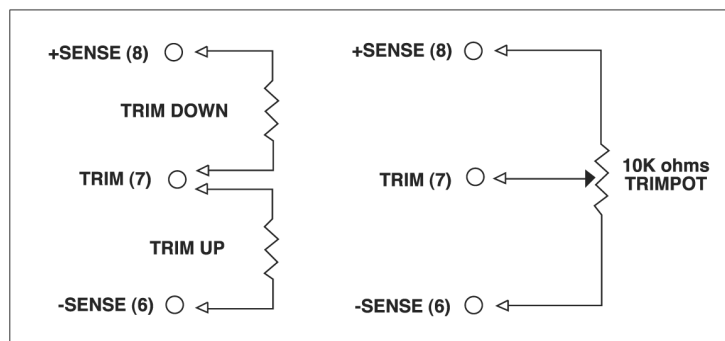


Logic Table

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

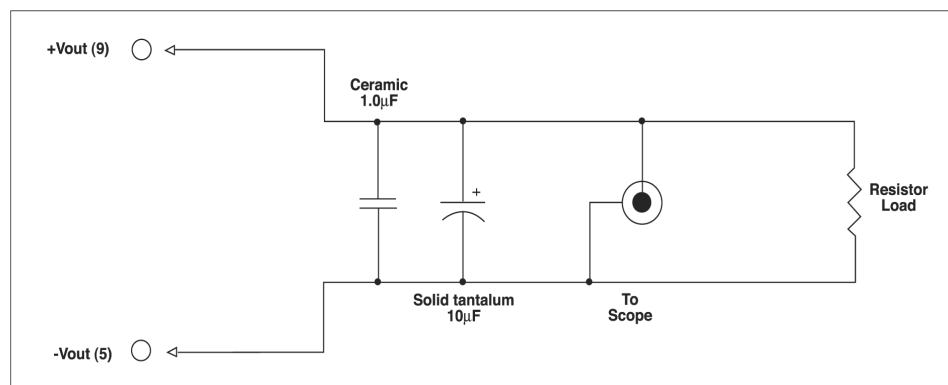
External Output Trimming

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