

Features

- 37.5W-75W isolated output
- Efficiency to 85%
- 300KHz switching frequency
- 2:1 input range
- Regulated outputs
- Continuous short circuit protection
- Industry standard half-brick package
- Five-sided metal case


Input

| | |
|---|---|
| Input Voltage Range | 12V 9-18V 24V 18-36V 48V 36-75V |
| Under Voltage Lockout | 12 Vin power up 8.8V power down 8V 24Vin power up 17V power down 16V 48Vin power down 34V power down 32.5V |
| Positive Logic Remote ON/OFF (see note 4&5) | |
| 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 |
| | 12V & 15V |
| | 24V |
| Temperature Coefficient | ±0.03%/°C |
| Short Circuit Protection | Continuous |
| Line Regulation ¹ | ±0.2% max |
| Load Regulation ² | ±0.2% max |
| Over Voltage Protection trip Range, % Vo nom. | 115-140% |
| Current Limit | 110-150% Nominal Output |

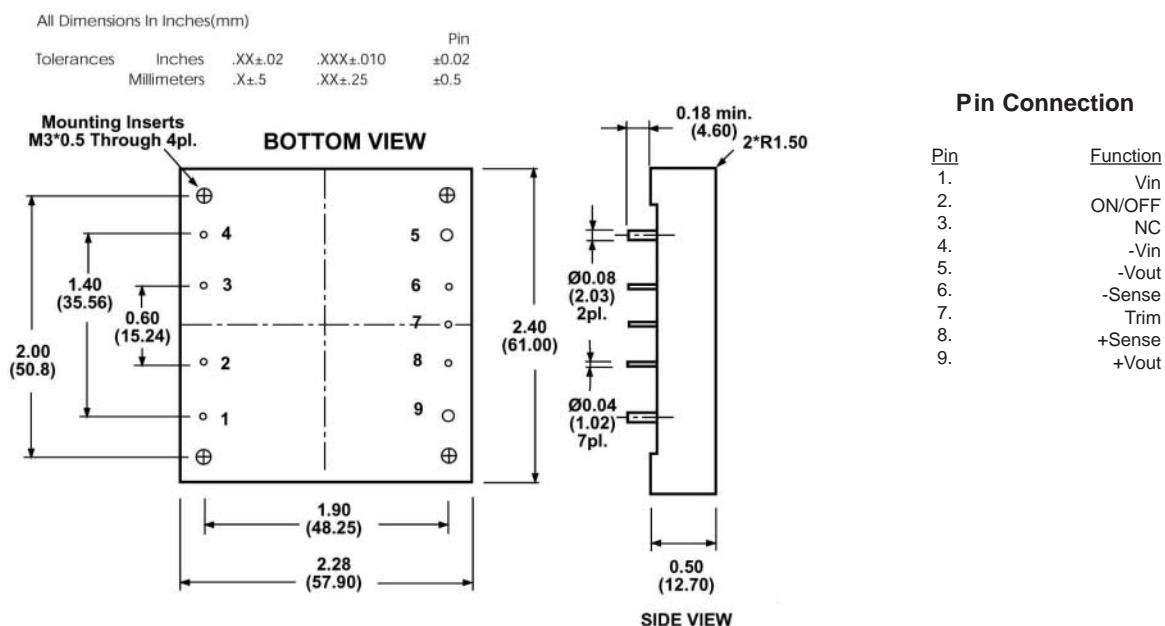
General Specifications

| | | |
|------------------------------|--------------|---|
| 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 | 12-24Vin | 400KHz, Typ. |
| | 48Vin | 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. Logic compatibility...open collector ref to -input
Module ON...open circuit
Module OFF...<0.8Vdc
4. Suffix " N" to the model number with negative logic remote on/off

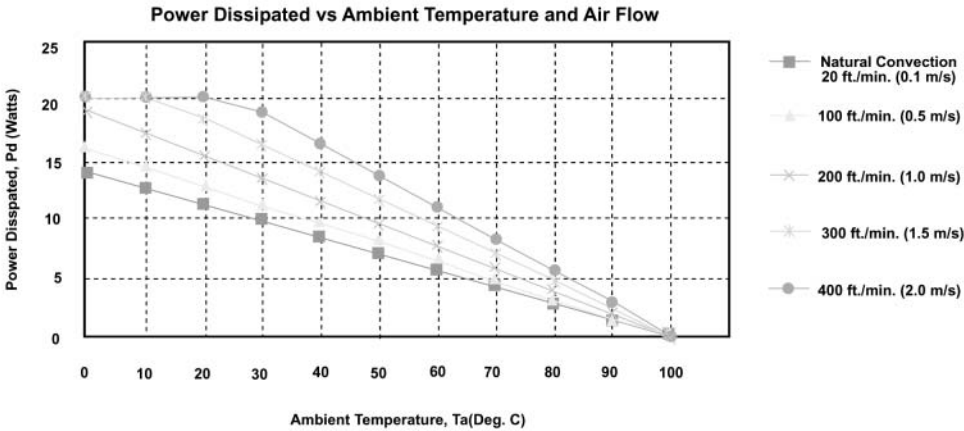
| Model Number | Input Voltage | Output Voltage | Output Current | Input Current | | Effic. | Case |
|----------------|---------------|----------------|----------------|---------------|-----------|--------|------|
| | | | | No Load | Full Load | | |
| VHB75-D12-S2R5 | 9-18 VDC | 2.5VDC | 15A | 50mA | 4110mA | 76% | HB |
| VHB75-D12-S3R3 | 9-18 VDC | 3.3VDC | 15A | 50mA | 5290mA | 78% | HB |
| VHB75-D12-S5 | 9-18 VDC | 5VDC | 15A | 50mA | 7715mA | 81% | HB |
| VHB75-D12-S12 | 9-18 VDC | 12VDC | 6.25A | 50mA | 7440mA | 84% | HB |
| VHB75-D12-S15 | 9-18 VDC | 15VDC | 5A | 50mA | 7440mA | 84% | HB |
| VHB75-D12-S24 | 9-18 VDC | 24VDC | 3.13A | 50mA | 7440mA | 84% | HB |
| VHB75-D24-S2R5 | 18-36 VDC | 2.5VDC | 15A | 50mA | 2029mA | 77% | HB |
| VHB75-D24-S3R3 | 18-36 VDC | 3.3VDC | 15A | 50mA | 2610mA | 79% | HB |
| VHB75-D24-S5 | 18-36 VDC | 5VDC | 15A | 50mA | 3810mA | 82% | HB |
| VHB75-D24-S12 | 18-36 VDC | 12VDC | 6.25A | 50mA | 3675mA | 85% | HB |
| VHB75-D24-S15 | 18-36 VDC | 15VDC | 5A | 50mA | 3675mA | 85% | HB |
| VHB75-D24-S24 | 18-36 VDC | 24VDC | 3.13A | 50mA | 3640mA | 86% | HB |
| VHB75-D48-S2R5 | 36-75 VDC | 2.5VDC | 15A | 50mA | 1015mA | 77% | HB |
| VHB75-D48-SR33 | 36-75 VDC | 3.3VDC | 15A | 50mA | 1305mA | 79% | HB |
| VHB75-D48-S5 | 36-75 VDC | 5VDC | 15A | 50mA | 1883mA | 83% | HB |
| VHB75-D48-S12 | 36-75 VDC | 12VDC | 6.25A | 50mA | 1838mA | 85% | HB |
| VHB75-D48-S15 | 36-75 VDC | 15VDC | 5A | 50mA | 1838mA | 86% | HB |
| VHB75-D48-S24 | 36-75 VDC | 24VDC | 3.13A | 50mA | 1820mA | 86% | HB |

Case HB


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.



Where:

The power dissipation (Pd) is

$$Pd = Pi - Po = Po (1/n) / n$$

The thermal resistances are listed below.

Chart of Thermal Resistance vs Air Flow:

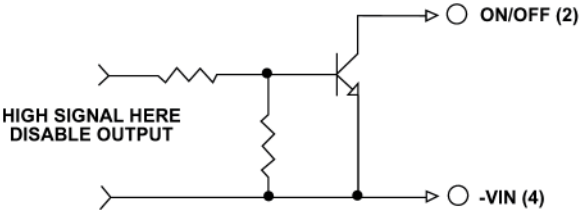
| AIR FLOW RATE | TYPICAL Rca |
|--------------------|-------------|
| Natural Convection | 7.12 °C/W |
| 100 ft./min. | 6.21 °C/W |
| 200 ft./min. | 5.17 °C/W |
| 300 ft./min. | 4.29 °C/W |
| 400 ft./min. | 3.64 °C/W |

The temperature rise (ΔT):

$$\Delta T = Pd * Rca$$

Remote ON/ OFF Control

The VHB75 series allows the user to switch the module on and off electronically with the remote on/off feature. The VHB75 series is available with “ positive logic” or “ negative logic” options.

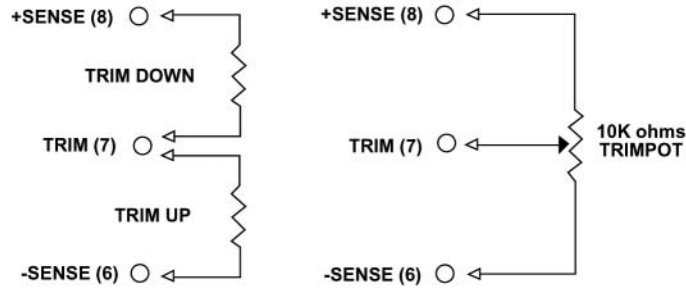


Logic Table

| 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 externally trimmed ($\pm 10\%$) with a fixed resistor or an external trimpot as shown.



Output Noise

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

