

**Features**

- 50-75W isolated output
- Efficiency to 90%
- 300KHz switching frequency
- 2:1 input range
- Regulated outputs
- Continuous short circuit protection
- Industry standard half-brick package
- Open frame type option


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**Input**

Input Voltage Range	24V 18-36V 48V 36-75V
Under Voltage Lockout	24 Vin power up 17V power down 15.5V 48Vin power up 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: 75%-100% Step Load Change	
Error Band	±5%
Recover Time	<500us
External Trim Adj. Range	±10%
Ripple & Noise      20MHz BW, 2.5V, 3.3V, 5V	40mV RMS., max 100mV pk-pk., max
Temperature Coefficient	±0.03%/°C
Short Circuit Protection	Continuous
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

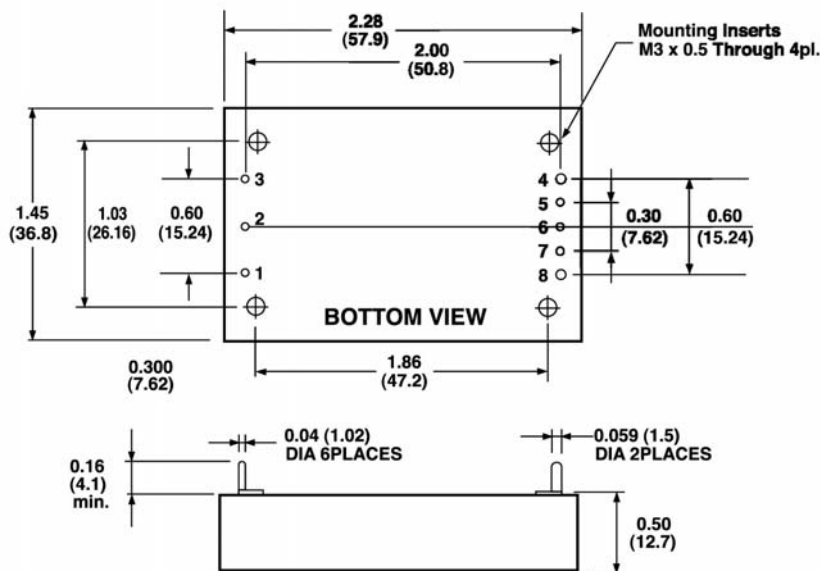
**General Specifications**

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	300KHz, Type
Operating Case Temperature	-40°C to +100°C
Storage Temperature	-40°C to +105°C
Thermal Shutdown, Case Temp.	100°C Typ.
Dimensions	1.45x2.28x0.50 inches (36.8x57.9x12.7mm)
Case Material	aluminum baseplate with plastic case

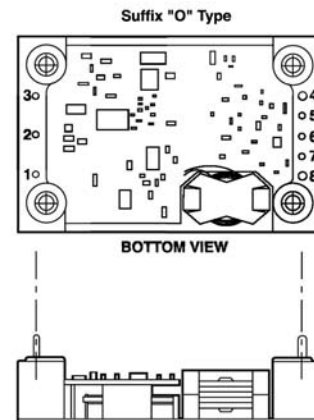
**NOTES:**

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 "O" to the model number with open frame type

Model Number	Input Voltage	Output Voltage	Output Current	Input Current		Effic.	Case
				No Load	Full Load		
VQB75-D24-S1-R8	18-36VDC	1.8VDC	0.5-25A	60mA	2259mA	83%	QB
VQB75-D24-S2R5	18-36VDC	2.5VDC	0.5-25A	60mA	3064mA	85%	QB
VQB75-D24-S3R3	18-36VDC	3.3VDC	0.5-20A	70mA	3125mA	88%	QB
VQB75-D24-S5	18-36VDC	5VDC	0.5-15A	80mA	3472mA	90%	QB
VQB75-D48-S1R8	36-75VDC	1.8VDC	0.5-25A	50mA	1116mA	84%	QB
VQB75-D48-S2R5	36-75VDC	2.5VDC	0.5-25A	50mA	1514mA	86%	QB
VQB75-D48-S3R3	36-75VDC	3.3VDC	0.5-20A	50mA	1563mA	88%	QB

**Case HB**

**Pin Connection**

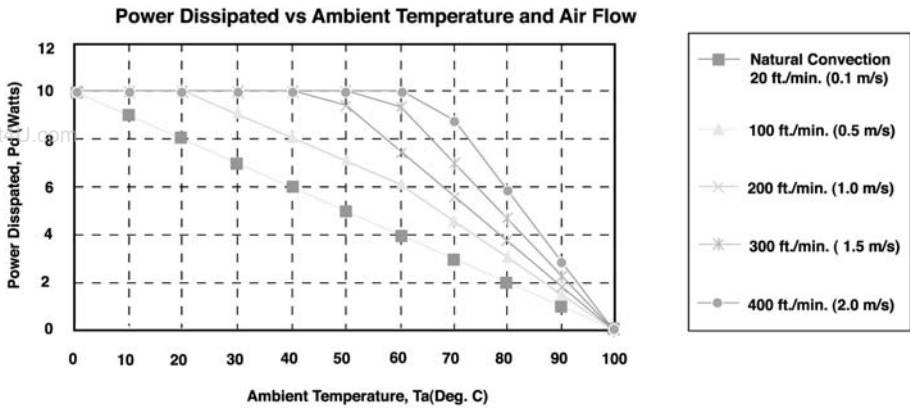
Pin	Function
1.	Vin
2.	ON/OFF
3.	Case
4.	-Vout
5.	-Sense
6.	Trim
7.	+Sense
8.	+Vout



## Application Notes

Derating:

The operating case temperature range of the VQB75 series is -40°C to +100°C. When operating the VQB75, proper derating or cooling is needed. Following is the derating curve of VQB75 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:

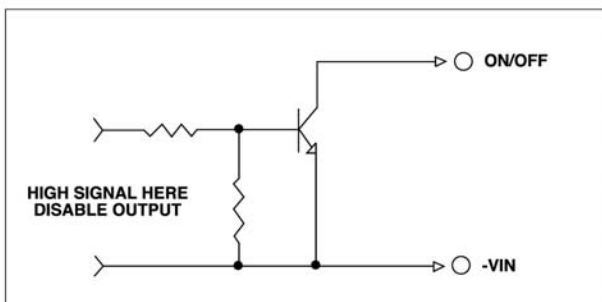
AIR FLOW RATE	TYPICAL Rca
Natural Convection 20 ft./min. (0.1m/s)	10.1 °C/W
100 ft./min. (0.5m/s)	8.0 °C/W
200 ft./min. (1.0m/s)	5.4 °C/W
300 ft./min. (1.5m/s)	4.4 °C/W
400 ft./min. (2.0m/s)	3.4 °C/W

The temperature rise (DT):

$$DT = P_d * Rca$$

## Remote ON/OFF Control

The VQB75 series allows the user to switch the module on and off electronically with the remote on/off feature. The VQB75 series is available with “positive logic” or “negative logic” options.

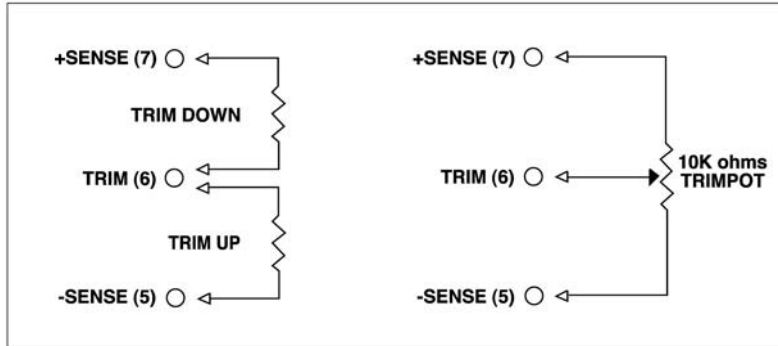


Logic Table

Logic State	Negative Logic	Positive Logic
Logic Low - Switch Closed	Module on	Module off
Logic High - Switch Open	Module off	Module on

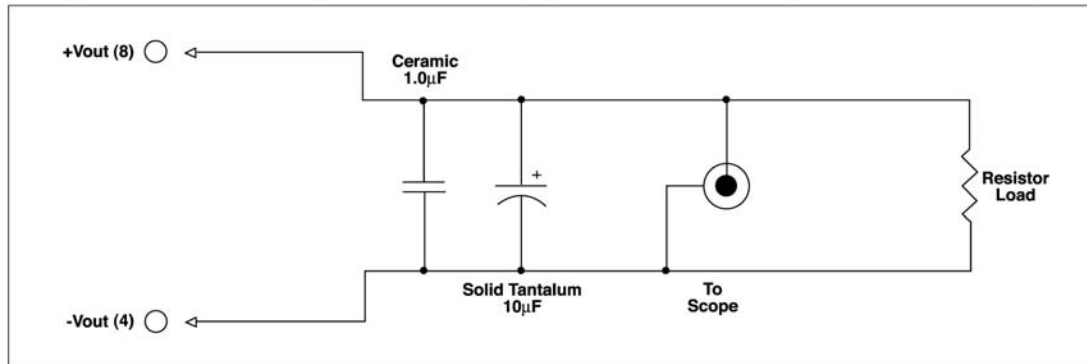
## External Output Trimming

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  $10\mu\text{F}$  tantalum capacitor and a  $1.0\mu\text{F}$  ceramic capacitor across the output.



Output Noise Test Circuit schematic