

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 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 Input/Case Output/Case
	1500VDC min. 1500VDC min. 1500VDC min.
Isolation Resistance	10 ⁷ 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

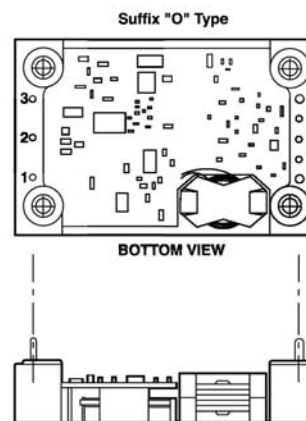
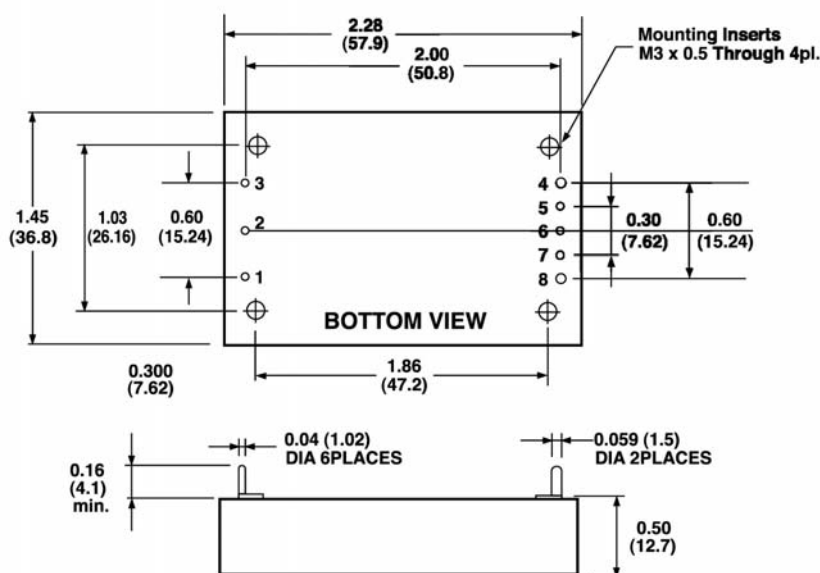


1. Measured from high line to low line
2. Measured from full load to zero load
3. Logic compatibility...open collector ref to -input
Module ON...open circuit
Module OFF...<0.8Vdc
4. Suffix "O" to the model number with open frame type

Model Number	Input Voltage	Output Voltage	Output Current	Input Current			Case
				No Load	Full Load	Effic.	
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

Pin Connection

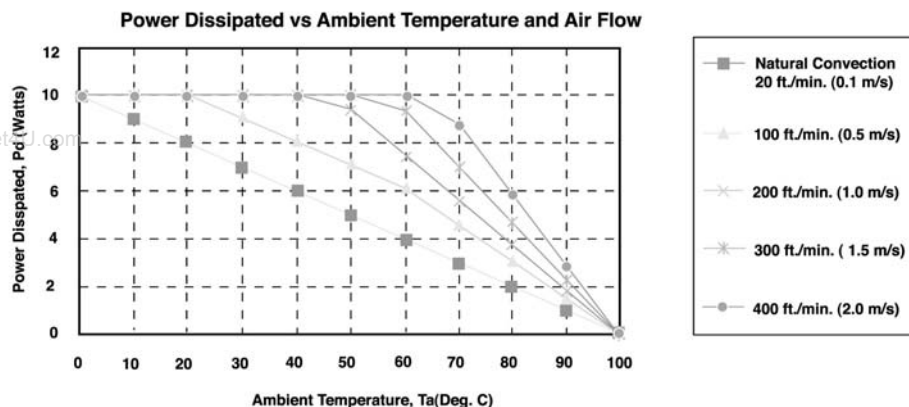
<u>Pin</u>	<u>Function</u>
1.	Vin
2.	ON/OFF
3.	Case
4.	-Vout
5.	-Sense
6.	Trim
7.	+Sense
8.	+Vout



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:

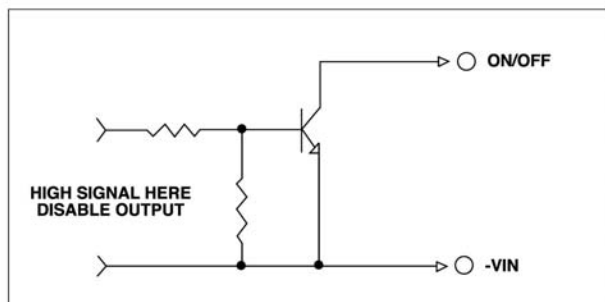
AIR FLOW RATE	TYPICAL R _{ca}
Natural Convection 20 ft./min. (0.1m/s)	10.1 °C/W
100 ft./min. (0.5m/s)	8.0 °C/W
200 ft./min. (1.0m/s)	5.4 °C/W
300 ft./min. (1.5m/s)	4.4 °C/W
400 ft./min. (2.0m/s)	3.4 °C/W

The temperature rise (ΔT):

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

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.

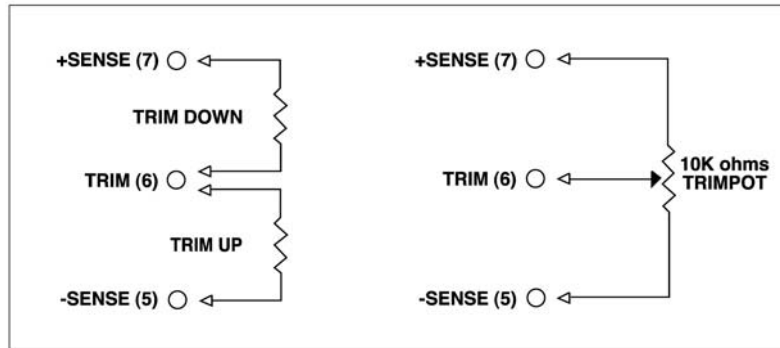


Logic Table

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

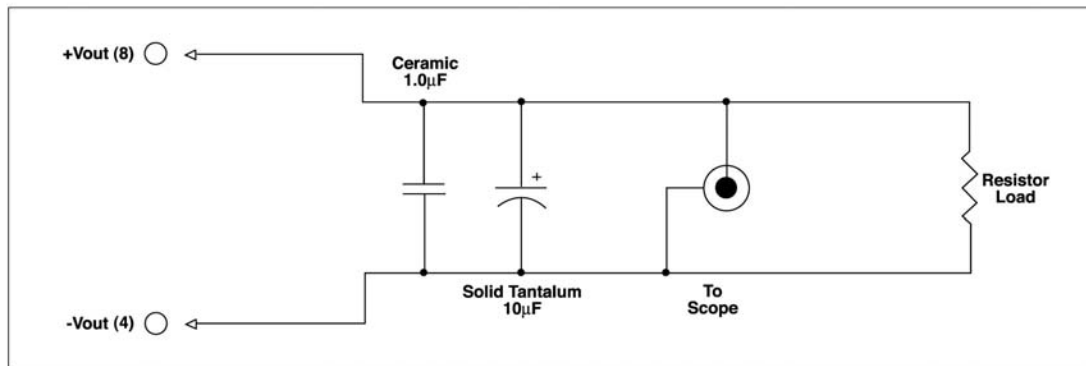
External Output Trimming

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 μ F tantalum capacitor and a 1.0 μ F ceramic capacitor across the output.



Output Noise Test Circuit schematic