

37.5 to 75 Watt 2.28x2.40 Inch Package M

- o Efficiency to 86%
- o 300 kHz Switching Frequency
- o 2:1 Input Range
- o Regulated Single Output
- o Continuous Short Circuit Protection
- o Half Brick Size Meet Industrial Standard

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT		%EFF
				NO LOAD	FULL LOAD	
75MRS12W2.5LC	9-18 VDC	2.5 VDC	15 A	50 mA	4110 mA	76
75MRS12W3.3LC		3.3 VDC			5290 mA	78
75MRS12W5LC		5 VDC			7715 mA	81
75MRS12W12LC		12 VDC	6.25 A		7440 mA	84
75MRS12W15LC		15 VDC	5 A			84
75MRS12W24LC		24 VDC	3.13 A			84
75MRS24W2.5LC	18-36 VDC	2.5 VDC	15 A	50 mA	2029 mA	77
75MRS24W3.3LC		3.3 VDC			2610 mA	79
75MRS24W5LC		5 VDC			3810 mA	82
75MRS24W12LC		12 VDC	6.25 A		3675 mA	85
75MRS24W15LC		15 VDC	5 A			86
75MRS24W24LC		24 VDC	3.13 A			86
75MRS48W2.5LC	36-75 VDC	2.5 VDC	15 A	50 mA	1015 mA	77
75MRS48W3.3LC		3.3 VDC			1305 mA	79
75MRS48W5LC		5 VDC			1883 mA	83
75MRS48W12LC		12 VDC	6.25 A		1838 mA	85
75MRS48W15LC		15 VDC	5 A			86
75MRS48W24LC		24 VDC	3.13 A			86

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE		OUTPUT CURRENT		INPUT CURRENT		%EFF
		V1	V2	MIN. 1/2	MAX. 1/2	NO LOAD	FULL LOAD	
75MRD24W5/2.5LC	18-36 VDC	5 VDC	2.5 VDC	0/0 A	15/15 A	50 mA	3765 mA	83
75MRD24W5/3.3LC		5 VDC	3.3 VDC					
75MRD48W5/2.5LC	36-75 VDC	5 VDC	2.5 VDC			30 mA	1860 mA	84
75MRD48W5/3.3LC		5 VDC	3.3 VDC					

SPECIFICATIONS

All Specifications Typical At Nominal Line, Full Load, and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS		
Input Voltage Range		2:1
Undervoltage lockout	12 Vin power up	8.8 V
	12 Vin power down	8 V
	24 Vin power up	17 V
	24 Vin power down	16 V
	48 Vin power up	34 V
	48 Vin power down	32.5 V
Positiv Logic Remote ON/OFF3)	Logic Compatibility Module ON Module OFF	Open Collector ref. to -Input Open Circuit <0.8 VDC
Input Filter		Pi Type

OUTPUT SPECIFICATIONS		
Voltage Accuracy		±1% max.
Transient Response	25% Step Load Change	<500 µsec.
External Trim Adj. Range		±10%
Ripple and Noise, 20 MHz BW	2.5V, 3.3V, 5V	20 mV RMS max. 75 mV p-p max.
	12V, 15V	30 mV RMS max. 100 mV p-p max.
	24V	100 mV RMS max. 240 mV p-p 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% ~ 150% Nominal Output

NOTE:

1. Measured from High Line to Low Line.

2. Measured from Full Load to Zero Load.

3. Add Suffix "R" to the Model Number with Negative Logic Remote ON/OFF.

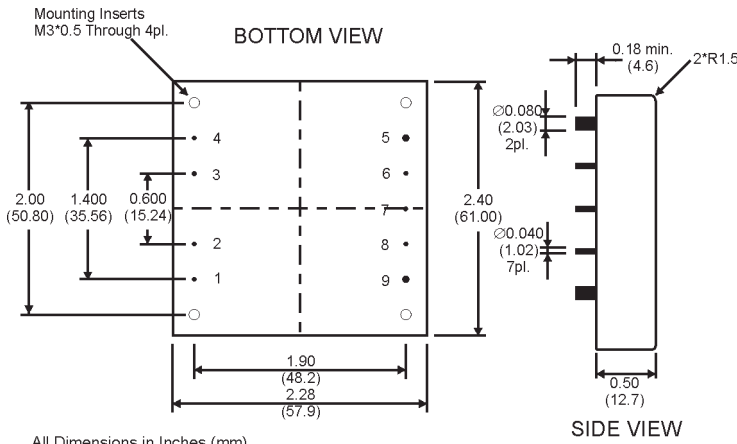
GENERAL SPECIFICATION		
Efficiency		see table
Isolation Voltage	Input / Output	1500 VDC min.
	Input / Case	1500 VDC min.
	Output / Case	1500 VDC min.
Isolation Resistance		10 MOhms min.
Switching Frequency	12/24 Vin	400 kHz typ.
	48 Vin	300 kHz typ.
Operating Case Temperature Range		-40°C to +100°C
Storage Temperature Range		-55°C to +105°C
Thermal Shut down Range, Case Temp.		+100°C
Case Material		Black Coated Aluminium with Non-Conductive Base
Dimensions		2.28x2.40x0.5 Inches (57.9x61.0x12.7 mm)

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MECHANICAL SPECIFICATIONS

Case „M“



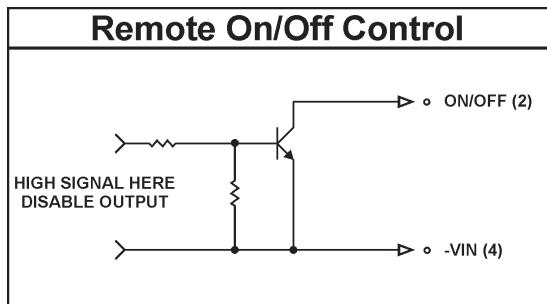
All Dimensions in Inches (mm).
Tolerance: x.xx=±0.02, x.xxx=±0.010 Inches
(x.x=±0.5, x.xx=±0.250 mm)

PIN CONNECTIONS	
1	+INPUT
2	REMOTE CONTROL
3	CASE
4	-INPUT
5	-OUTPUT
6	-SENSE
7	TRIM
8	+SENSE
9	+OUTPUT

APPLICATION NOTES

Remote ON/OFF Control

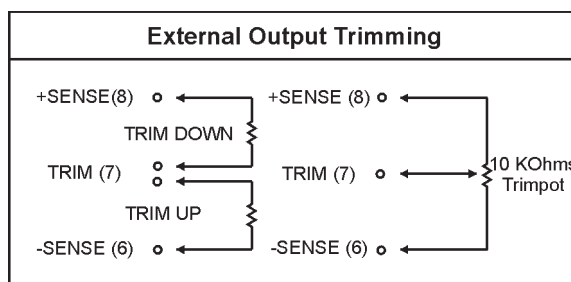
The 75MRS allows the user to switch the module on and off electronically with remote on/off feature. The 75MRS is available with "positive logic" or "negative logic" (option) versions for remote on/off.



Logic State (PIN2)	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 (±10%) with a fixed resistor or an external trimpot as shown.



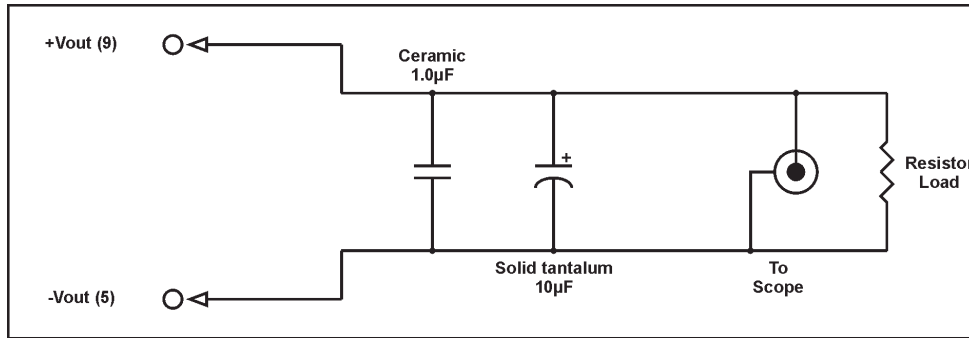
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APPLICATION NOTES

Output Noise

The output noise is measured with 10µF tantalum capacitor and 1.0µF ceramic capacitor across output.

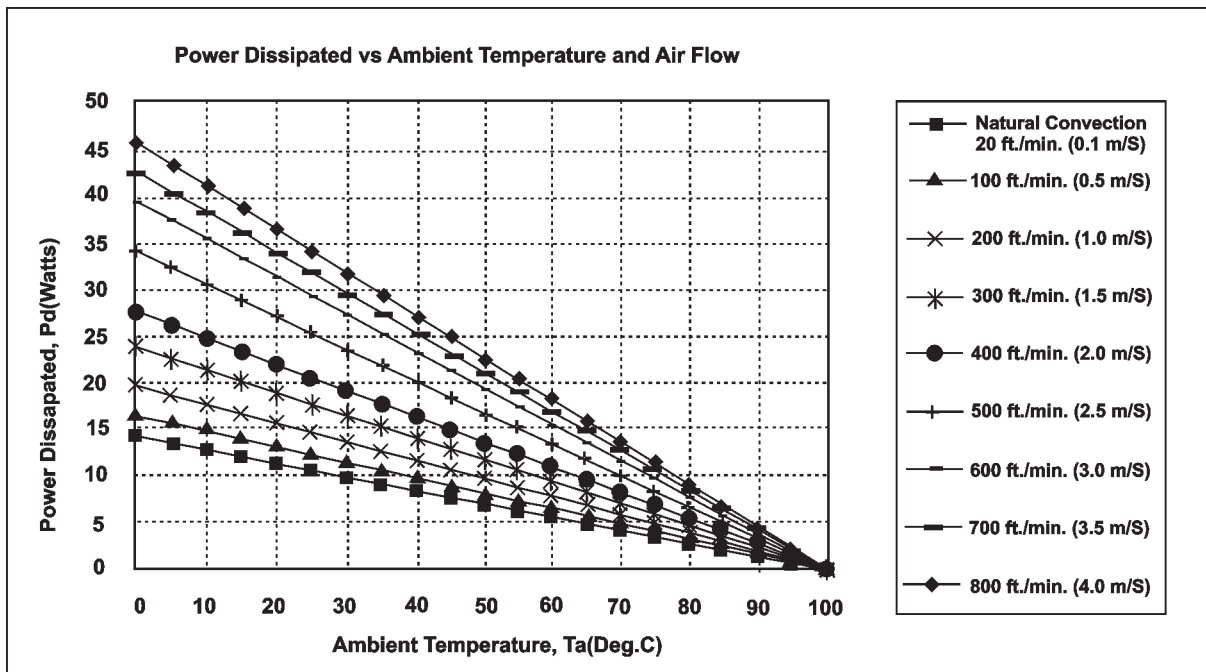


Output Noise Test Circuit schematic

Derating

The operating case temperature range of 75MRS... series is -40°C to +100°C. When operating the 75MRS..., proper derating or cooling is needed.

The following curve is the derating curve of 75MRS... without heat sink.



Forced Convection Power Derating without Heat Sink

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APPLICATION NOTES

Where:

The power dissipation (Pd):

$$Pd = Pi - Po = Po (1 - \eta) / \eta$$

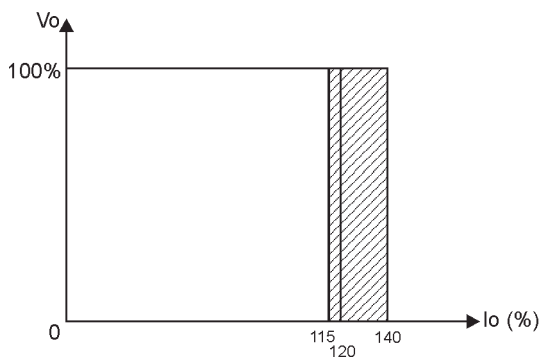
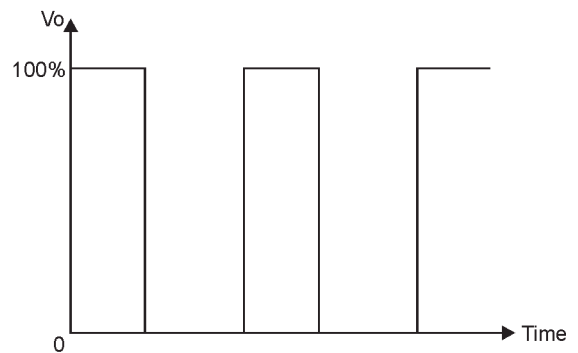
The thermal resistance are list below:

Chart of Thermal Resistance vs Air Flow:

AIR FLOW RATE	TYPICAL Rca
Natural Convection 20 ft./min. (0.1 m/s)	7.12°C/W
100 ft./min. (0.5 m/s)	6.21°C/W
200 ft./min. (1.0 m/s)	5.17°C/W
300 ft./min. (1.5 m/s)	4.29°C/W
400 ft./min. (2.0 m/s)	3.64°C/W
500 ft./min. (2.5 m/s)	2.96°C/W
600 ft./min. (3.0 m/s)	2.53°C/W
700 ft./min. (3.5 m/s)	2.37°C/W
800 ft./min. (4.0 m/s)	2.19°C/W

The temperature rise (ΔT):

$$\Delta T = \Delta Pd * Rca$$

Current Limit Curve**Output Short, Vo Characteristics****NOTICE:**

The information in this document has been carefully checked. However, no responsibility is assumed for inaccuracies! Specifications can be changed without notice. The latest and most complete information can be found on our website.