

231 to 350 Watt 2.4x2.28 Inch Package M 2:1 Input Range



- o High Efficiency up to 92.5%
- o Fixed Switching Frequency
- o Input Under-Voltage Protection
- o Over Temperature Protection
- o Over Voltage/Current Protection
- o Remote ON/OFF Control
- o Half-Brick Size meets Industrial Standard
- o Fully Isolated 1500 VDC
- o UL60950-1 Approval
- o High Power Density 123 W/in³

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT MAX.	INPUT CURRENT		%EFF	CAPACITOR LOAD MAX.
				NO LOAD	FULL LOAD		
350MRS24W3.3LC	18-36 VDC	3.3 VDC	70 A	140 mA	10.94 A	88	10000 µF
350MRS24W5LC		5 VDC		260 mA	16.39 A	89	
350MRS24W12LC		12 VDC	29.2 A	250 mA	16.13 A	90.5	
350MRS24W24LC		24 VDC	14.6 A	60 mA	16.40 A	89	7000 µF ²⁾
350MRS24W28LC		28 VDC	12.5 A		16.11 A	90.5	
350MRS24W48LC		48 VDC	7.3 A		16.22 A	90	2200 µF ²⁾
350MRS48W3.3LC		36-75 VDC	3.3 VDC		70 A	90 mA	5.41 A
350MRS48W5LC	5 VDC		130 mA	8.01 A		91	
350MRS48W12LC	12 VDC		29.2 A	100 mA	7.89 A	92.5	
350MRS48W24LC	24 VDC		14.6 A	60 mA	7.98 A	91.5	7000 µF ²⁾
350MRS48W28LC	28 VDC		12.5 A		7.93 A	92	
350MRS48W48LC	48 VDC		7.3 A		7.93 A	92	2200 µF ²⁾

NOTE:

1. Nominal Input Voltage 24, 48 VDC.

2. The Output Terminal of 28 Vout and 48 Vout models required a minimum capacitor 100 µF to maintain specified Regulation.

SPECIFICATIONS

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

INPUT SPECIFICATIONS

Input Voltage Range		2:1
Input Surge Voltage (100 ms max.)	24 V 48 V	50 VDC max. 100 VDC max.
Under Voltage Lockout	24 Vin power up	17 V
	24 Vin power down	16 V
	48 Vin power up	35 V
	48 Vin power down	33 V
Positive Logic Remote ON/OFF ³⁾	Logic Compatibility Module ON Module OFF	Open Collector Ref. to -Input >3.5 VDC to 75 VDC or Open Circuit <1.2 VDC
Input Filter		Pi Type

OUTPUT SPECIFICATIONS

Voltage Accuracy		±1.5% max.
Transient Response	25% Step Load Change	<500µ sec.
External Trim Adj. Range ⁴⁾		±10%
Ripple and Noise at 20 MHz BW ⁵⁾	3.3 V, 5 V	40 mV RMS max. 100 mV p-p max.
	12 V	60 mV RMS max. 120 mV p-p max.
	24 V, 28 V	100 mV RMS max. 280 mV p-p max.
	48 V	150 mV RMS max. 480 mV p-p max.
Temperature Coefficient		±0.03%/°C
Short Circuit Protection		Continuous
Line Regulation ⁶⁾		±0.2% max.
Load Regulation ⁷⁾		±0.2% max.
Over Voltage Protection trip Range, % Vo nom.		115-140%
Current Limit		105% ~ 140% Nominal Output
Start Up Time		175 ms

NOTE:

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

Module ON <1.2 VDC

Module OFF >3.5 VDC to 75 VDC or Open Circuit

4. Add Suffix "I" to the Model Number with thin input pin models (Pin1 and Pin4=1.0 mm) 48 Vin Models only!

5. Output Ripple and Noise measured with 10 µF tantalum and 1 µF ceramic Capacitor across Output.

6. Measured from High Line to Low Line.

7. Measured from Full Load to Zero Load.

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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 ⁷ Ohms min.
Isolation Capacitance		2000 pF
Switching Frequency	3.3 V, 5 V	300 kHz
	12 V, 24 V, 28 V, 48 V	330 kHz
Operating Case Temperature Range		-40°C to +100°C
Storage Temperature Range		-55°C to +105°C
Humidity		95% RH max. non condensing
MTBF (MIL-STD-217F, GB, 25°C, Full Load)		TBD khrs
Thermal Shutdown (Case Temperature)		+110°C
Dimensions Suffix "L", "IL"		2.28x2.40x0.52 Inches (57.9x61.0x13.2 mm)
		2.28x2.40x0.50 Inches (57.9x61.0x12.7 mm)
Case Material		Aluminum Baseplate with Plastic Case
Weight		114 g

NOTE:

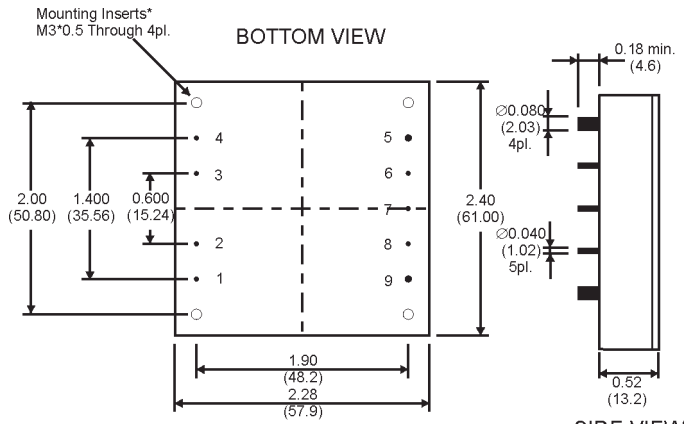
8. Add Suffix "C" to the Model Number with Clear Mounting Inserts (3.2 mm DIA)
9. Trim-Up.....connect a resistor between the trim pin and +Sense
Trim-Down...connect a resistor between the trim pin and -Sense
10. The input terminal recommend to parallel with 220 µF for 48 Vin and 470 µF for 24 Vin ESR<0.7 Ohm to reduce the input ripple voltage.

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MECHANICAL SPECIFICATIONS

Case „M“

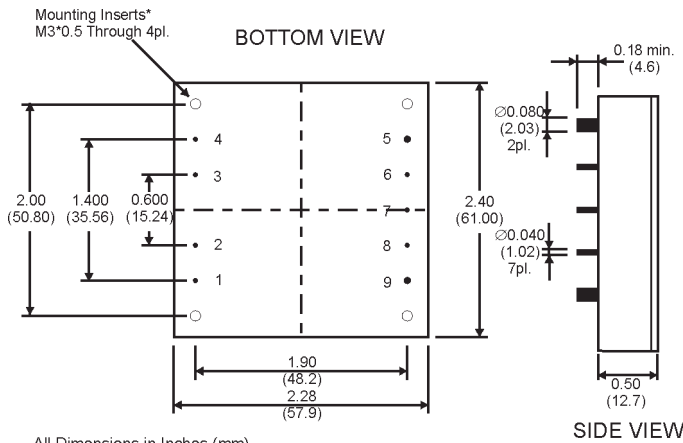


All Dimensions in Inches (mm).
Tolerance: x.xx=±0.02, x.xxx=±0.010 Inches
(x.x=±0.5, x.xx=±0.250 mm)

*Add Suffix „C“ for Clear Mounting Insert (3.2 mm DIA), on Request

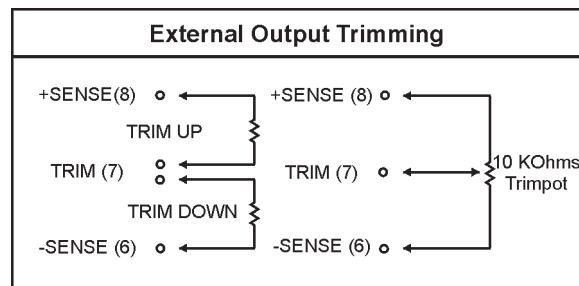
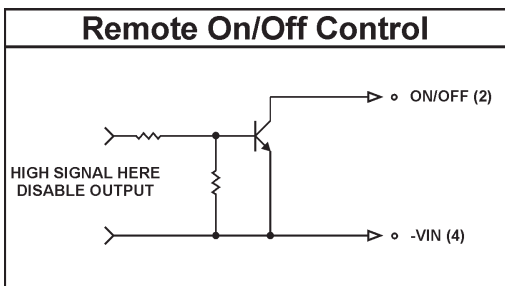
PIN CONNECTIONS	
1	+INPUT
2	REMOTE CONTROL
3	CASE
4	-INPUT
5	-OUTPUT
6	-SENSE
7	TRIM
8	+SENSE
9	+VOUT

Case „M“ - Suffix „L“ + „IL“



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

DIAGRAMS



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.