

100 Watt

2.4x2.28 Inch Package M  
3:1 Input Range  
Railway System



- o High Efficiency up to 89%
- o Regulated Single Output
- o Remote ON/OFF
- o Over Temperature Protection
- o Over Voltage/Current Protection
- o Continuous Short Circuit Protection
- o Half-Brick Size meet Industrial Standard
- o CE Mark meets 2014/30/EC
- o Designed to meet UL60950-1, EN50155
- o LVD Approval



| MODEL NUMBER   | INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT MAX. | INPUT CURRENT |           | %EFF | CAPACITOR LOAD MAX. |
|----------------|---------------|----------------|---------------------|---------------|-----------|------|---------------------|
|                |               |                |                     | NO LOAD       | FULL LOAD |      |                     |
| 100MRS110R12LC | 66-160VDC     | 12 VDC         | 8.3 A               | 5 mA          | 1050 mA   | 86.5 | 8300 µF             |
| 100MRS110R15LC |               | 15 VDC         | 6.7 A               |               | 1040 mA   | 87.5 | 4170 µF             |
| 100MRS110R24LC |               | 24 VDC         | 4.17 A              |               | 1020 mA   | 89   | 1500 µF             |
| 100MRS110R48LC |               | 48 VDC         | 2.08 A              |               |           |      |                     |

NOTE:  
Nominal Input Voltage 110 VDC.

**SPECIFICATIONS**

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

**INPUT SPECIFICATIONS**

|                                   |  |  |
|-----------------------------------|--|--|
| Input Voltage Range               | 110 V  | 66-160V  |
| Input Surge Voltage (100 ms max.) |  | 180 VDC max.   |
| Undervoltage lockout              | Vin power up<br>Vin power down                 | 62 V<br>56 V   |
| Positive Logic Remote ON/OFF      | Logic Compatibility<br>Module ON<br>Module OFF | Open Collector Ref. to -Input<br>Open Circuit<br>0 to <1.8 VDC |
| Input Filter                      |  | Pi Type  |

**OUTPUT SPECIFICATIONS**

|   |                      |                                    |
|---|----------------------|------------------------------------|
| Voltage Accuracy                              |                      | ±1.5% max.                         |
| Transient Response                            | 25% Step Load Change | <500 µ sec.                        |
| External Trim Adj. Range                      |                      | ±10%                               |
| Ripple and Noise at 20 MHz BW <sup>1)</sup>   | 12, 15 V             | 60 mV RMS max.<br>150 mV p-p max.  |
|   | 24 V                 | 100 mV RMS max.<br>240 mV p-p max. |
|   | 48 V                 | 200 mV RMS max.<br>480 mV p-p max. |
| Temperature Coefficient                       |                      | ±0.03%/°C                          |
| Short Circuit Protection                      |                      | Continuous                         |
| Line Regulation <sup>2)</sup>                 |                      | ±0.2% max.                         |
| Load Regulation <sup>3)</sup>                 |                      | ±0.2% max.                         |
| Over Voltage Protection trip Range, % Vo nom. |                      | 115-140%                           |
| Current Limit                                 |                      | 110% ~ 160% Nominal Output         |
| Start up Time                                 |                      | 120 ms                             |

**NOTE:**

1. Output Ripple and Noise measured with 10 µF tantalum and 1 µF ceramic capacitor across output.(48 V: 1 µF ceramic cap. only!)
2. Measured from High Line to Low Line.
3. Measured from Full Load to Zero Load.
4. An external input capacitor 47 µF for all models are recommended to reduce input ripple voltage.
5. Require a 47 µF aluminum capacitor connected between +Vout and - Vout for 48 Vout models.

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**GENERAL SPECIFICATION**

|   |   |   |
|---|---|---|
| Efficiency                                |   | see table   |
| Isolation Voltage                         | Input / Output<br>Input / Case<br>Output / Case | 3000 VDC min.<br>1500 VDC min.<br>500 VDC min.    |
| Isolation Resistance                      |   | 10 <sup>9</sup> Ohms min.                         |
| Isolation Capacitance                     |   | 500 pF  |
| Switching Frequency                       |   | 250 kHz   |
| Operating Case Temperature Range          |   | -40°C to +100°C                                   |
| Storage Temperature Range                 |   | -55°C to +105°C                                   |
| Thermal Shutdown (Case Temperature)       |   | +105°C  |
| Humidity                                  |   | 95% RH max. Non Condensing                        |
| MTBF (MIL-HDBK-217F, GB, 25°C, Full Load) |   | T.B.D.  |
| Safety                                    |   | meet UL60950-1                                    |
| EMC <sup>1)</sup>                         |   | EN50155 (EN50121-3-2) with external filter        |
| Shock/Vibration                           |   | EN50155 (EN61373)                                 |
| Environmental                             |   | meet EN50155 (EN60068-2-1)                        |
| Dimensions                                |   | 2.28 x 2.40 x 0.50 Inches (57.9 x 61.0 x 12.7 mm) |
| Case Material                             |   | Aluminum Base Plate with Plastic Case             |
| Weight                                    |   | 95 g  |

## NOTE:

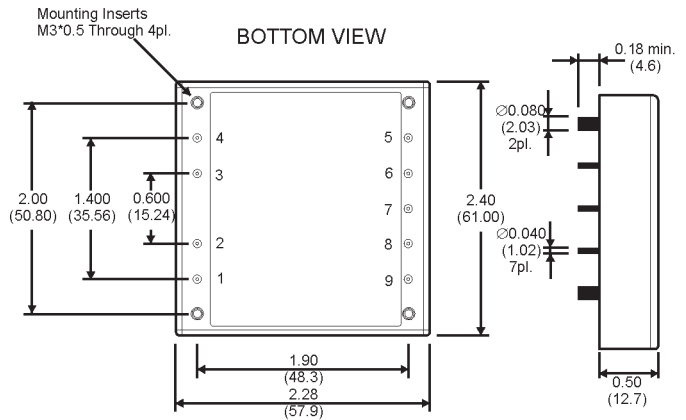
1. Design to meet EN50155 and RIA12 refer to application note.

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**MECHANICAL SPECIFICATIONS**

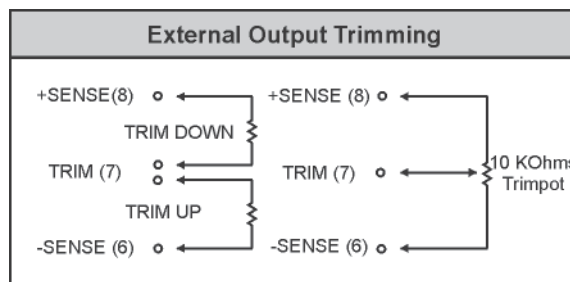
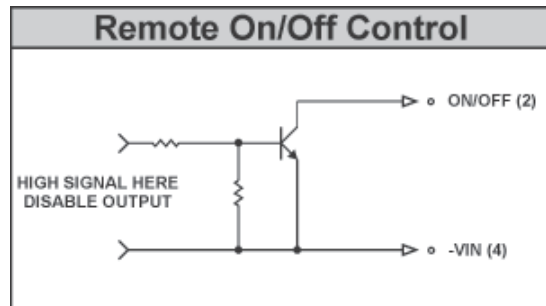
Case „M“



| PIN CONNECTIONS |               |
|-----------------|---------------|
| 1               | +INPUT        |
| 2               | ON/OFF        |
| 3               | NOT CONNECTED |
| 4               | -INPUT        |
| 5               | -OUTPUT       |
| 6               | -SENSE        |
| 7               | TRIM          |
| 8               | +SENSE        |
| 9               | +OUTPUT       |

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.