

40 Watt

2.05x1.2 Inch Package B4  
4:1 Input Range  
Railway System



- o High Efficiency up to 91%
- o Six-Sided Shield Metal Case
- o Regulated Output
- o Remote ON/OFF
- o Over Temperature Protection
- o Over Voltage Protection
- o Over Current Protection
- o Continuous Short Circuit Protection
- o CE Mark meets 2004/108/EC
- o Safety Meets UL60950-1 Basic Insulation



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT MAX.	INPUT CURRENT		%EFF	CAPACITOR LOAD MAX.
				NO LOAD	FULL LOAD		
40B4RS110R3.3LC	43-160 VDC	3.3 VDC	10000 mA	10 mA	1555 mA	88	10000 µF
40B4RS110R5LC		5 VDC	8000 mA		1865 mA	89	8000 µF
40B4RS110R12LC		12 VDC	3333 mA		1840 mA	90	3300 µF
40B4RS110R15LC		15 VDC	2666 mA			91	2700 µF
40B4RD110R12LC		±12 VDC	±1667 mA		1865 mA	89	1650 µF
40B4RD110R15LC		±15 VDC	±1333 mA				1350 µF

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	43-160V
Input Surge Voltage (100 ms max.)		200 VDC max.
Under Voltage Lockout	Vin power up Vin power down	40 V 38 V
Positive Logic Remote ON/OFF	Logic Compatibility Module ON Module OFF	CMOS or Open Collector TTL 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.
Voltage Balance (Dual Output)		±1.0% max.
Transient Response	25% Step Load Change	<250 µ sec.
External Trim Adj. Range	Single Output Models only	±10%
Ripple and Noise at 20 MHz BW <sup>1)</sup>	3.3 V, 5 V 12 V, 15 V, ±12 V, ±15 V	100 mV p-p max. 150 mV p-p max.
Temperature Coefficient		±0.02%/°C max.
Short Circuit Protection		Continuous
Line Regulation <sup>2)</sup>		±0.2% max.
Load Regulation <sup>3)</sup>	Single Dual	±0.5% max. ±1.0% max.
Cross Regulation (Dual output) Load cross variation 10%/100%		±5.0% max.
Over Voltage Protection		Zener or TVS Clamp
Current Limit		110% ~ 160% Nominal Output
Start up Time		15 ms

**NOTE:**

1. Output Ripple and Noise measured with 1 µF MLCC.
2. Measured from High Line to Low Line.
3. Measured from Full Load to min. Load.
4. Add Suffix "R" to the Model Number with Negative Logic Remote ON/OFF.  
Module ON.....<1.2 VDC  
Module OFF...>3.5 VDC to 75 VDC or Open Circuit

**SPECIFICATIONS**

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

<b>GENERAL SPECIFICATION</b>		
Efficiency		see table
Isolation Voltage	Input / Output	2250 VDC min.
	Input / Case	1600 VDC min.
	Output / Case	1600 VDC min.
Isolation Resistance		10 GOhms min.
Isolation Capacitance		1000 pF
Case Grounding	Input/Case	1000 pF
	Output/Case	
Switching Frequency		270 kHz
Operating Ambient Temperature Range		-40°C to +85°C
Derating, above 60°C		Linearly to Zero Power at +105°C
Case Temperature <sup>5)</sup>		+105°C
Thermal Shutdown, Case Temperature		+110°C
Storage Temperature Range		-55°C to +125°C
Cooling		Natural Convection
Humidity		95% RH max. Non-Condensing
MTBF (MIL-STD-217F) GB, 25°C, Full Load		TBD hrs
EMI/RFI		Six-Sided Continuous Shield
Safety		meets UL60950-1 2nd (Basic insulation)
EMC <sup>6)</sup>		meets EN50155 (EN50121-3-2) with external filter
Schock/Vibration		meets EN50155 (EN61373)
Dimensions		2.05 x 1.20 x 0.40 Inches (52 x 30.5 x 10.2 mm)
Case Material		Aluminum with Non-Conductive Base
Weight		TBD

## NOTE:

5. Maximum Case Temperature under any Operating Condition Should not be exceeded +105°C.

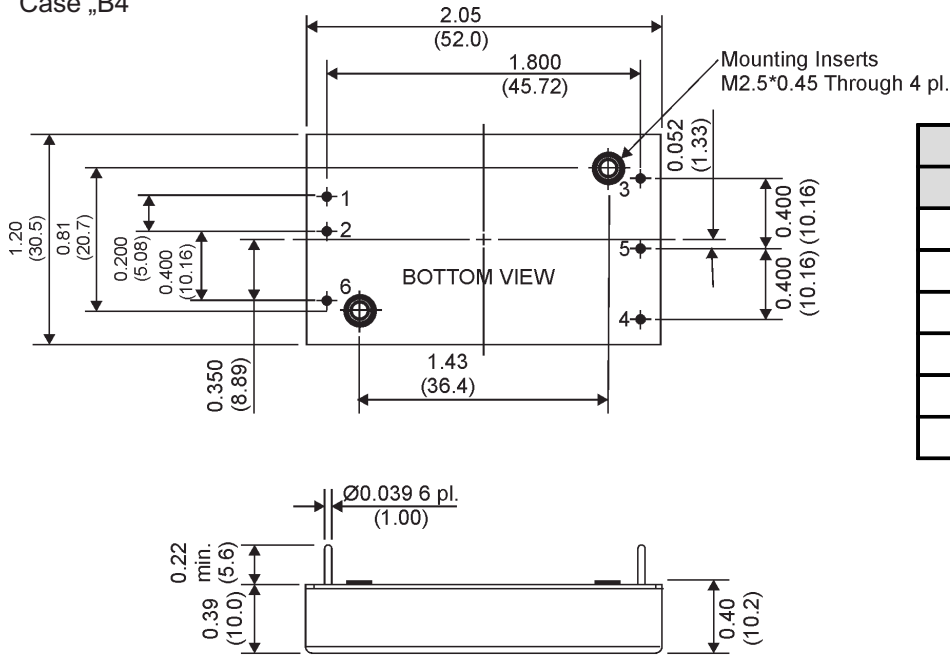
6. Design to meet EN50155 and RIA12 refer to Application Note.

**SPECIFICATIONS**

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

**MECHANICAL SPECIFICATIONS**

Case „B4“

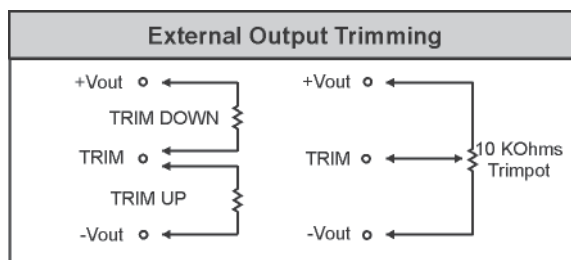


PIN CONNECTIONS		
	Single	Dual
1	+INPUT	+INPUT
2	-INPUT	-INPUT
3	+OUTPUT	+OUTPUT
4	TRIM	-OUTPUT
5	-OUTPUT	COMMON
6	REMOTE ON/OFF	REMOTE ON/OFF

All Dimensions in Inches (mm).

Tolerance:  
 Inches: x.xx=±0.02, x.xxx=±0.010  
 Millimeter: x.x=±0.5, x.xx=±0.25

**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.