EC7BW-110 SERIES

20 WATT 4:1 INPUT DC-DC CONVERTERS

E176177

Railway System

FEATURES



* 20W Isolated Output
* Efficiency to 90%
* 250KHz Switching Frequency
* 4:1 Input Range
* Regulated Outputs
* Remote On/Off
* Low No Load Power Consumption
* Continuous Short Circuit Protection
* 2”x1”x0.4” Size Meets Industrial Standard
* UL60950-1 (Basic Insulation) Approval
* Meets EN50155
* Fire & Smoke Meets EN45545-2
* Safety Meets IEC/EN/UL 62368-1

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.	CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD		
EC7BW-110S05	43-160 VDC	5 VDC	0 mA	4000 mA	3 mA	205.4 mA	88.5	5600uF
EC7BW-110S12	43-160 VDC	12 VDC	0 mA	1670 mA	3 mA	202.0 mA	90	1000uF
EC7BW-110S15	43-160 VDC	15 VDC	0 mA	1330 mA	3 mA	203.1 mA	89.5	1000uF
EC7BW-110D12	43-160 VDC	±12 VDC	0 mA	±833 mA	3 mA	204.3 mA	89	680uF
EC7BW-110D15	43-160 VDC	±15 VDC	0 mA	±667 mA	3 mA	205.4 mA	88.5	350uF

NOTE: 1. Nominal Input Voltage 110VDC

SPECIFICATIONS

All Specifications Typical at Nominal Line, Full Load, and 25℃ Unless Otherwise Noted

INPUT SPECIFICATIONS:

Input Voltage Range..... 110V 43-160V
Input Surge Voltage (100ms max.) ..... 200Vdc max.
Under Voltage Lockout ..... power up 40V
power down 38V
Positive Logic Remote On/Off (note4&5)
Input Filter ..... Pi Type

OUTPUT SPECIFICATIONS:

Voltage Accuracy ..... ±1.5% max.
Voltage Balance (Dual Output) ..... ±1.0% max.
Transient Response: 25% Step Load Change ..... <250μs
External Trim Adj. Range (Single Output Models Only) ..... ±10%
Ripple & Noise, 20MHz BW (note3) ..... 5V ..... 40mV RMS max.
75mV pk-pk max.
12V & 15V & ±12V & ±15V ..... 40mV RMS max.
100mV pk-pk max.
Temperature Coefficient ..... ±0.03%/°C max.
Short Circuit Protection ..... Continuous
Line Regulation (note1) ..... ±0.2% max.
Load Regulation (note2) ..... Single ..... ±0.5% max.
Dual..... ±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 ..... Single ..... 15ms typ.
Dual ..... 25ms typ.

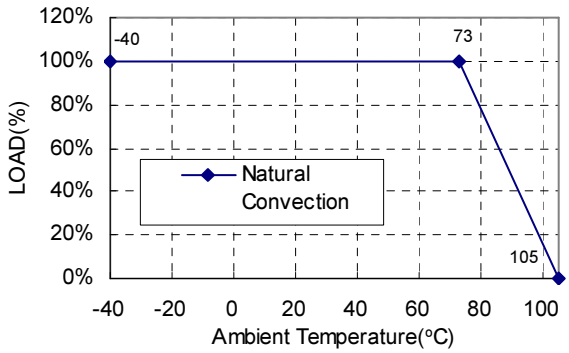
NOTE:

1. Measured from high line to low line.
2. Measured from full load to zero load.
3. Output ripple and noise measured with 1uF ceramic capacitor across output.
4. Logic compatibility ..... open collector ref. to -Input
   Module on ..... > 3.5VDC to 75VDC or open circuit
   Module off ..... 0 to < 1.2VDC
5. Suffix "N" to the model number with negative logic remote on/off
   Module on ..... 0 to < 1.2VDC
   Module off ..... >3.5VDC to 75VDC or open circuit
6. Design meet EN50155 and RIA12 refer to application note.

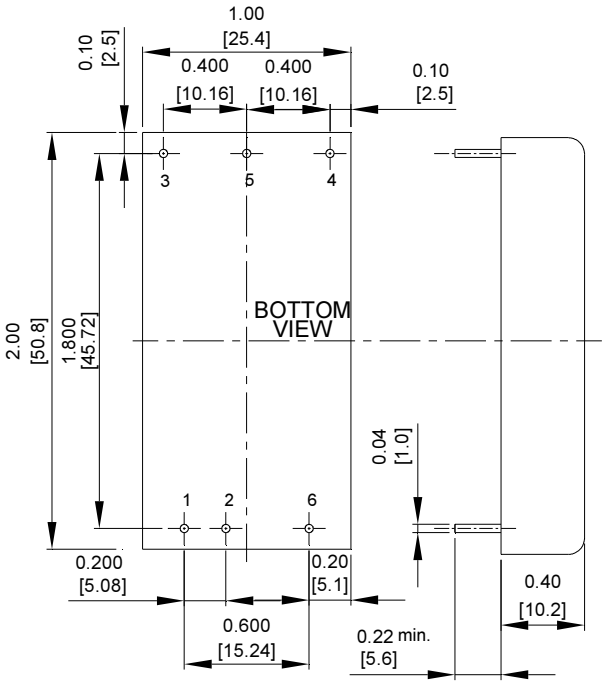
GENRAL SPECIFICATIONS:

Efficiency ..... See Table
Isolation Voltage ..... Input/Output ..... 3000VDC min.
Isolation Resistance ..... 10^9 Ohm min.
Isolation Capacitance ..... 1000pF typ.
Switching Frequency ..... 250KHz typ.
EMI/RFI ..... Conductive EMI Meets EN55032 Class A
Operating Ambient Temperature ..... -40℃ to +85℃
De-rating, Above 73℃ ..... Linearly to Zero Power at 105℃
Case Temperature ..... 105℃ max.
Storage Temperature ..... -55℃ to +125℃
Humidity ..... 95% RH max. Non Condensing
MTBF ..... MIL-HDBK-217F, GB, 25℃, Full Load ..... 880Khrs typ.
Safety ..... UL60950-1 2nd (Basic insulation)
EMC (note6) ..... Meet EN50155(EN50121-3-2) with external filter
Shock/Vibration ..... Meet EN50155(EN61373)
Fire & Smoke.....Meet EN45545-2
Dimensions ..... 2.00x1.00x0.40 inches (50.8x25.4x10.2 mm)
Case Material ..... Black Coated Copper with Non-Conductive Base
Weight 35g

Typical Derating curve for Natural Convection



Case B Dimensions:



PIN CONNECTION		
Pin	Single	Dual
1	+V Input	+V Input
2	-V Input	-V Input
3	+V Output	+V Output
4	Trim	-V Output
5	-V Output	Common
6	Remote On/Off	

NOTE: Pin Size is 0.04±0.004 Inch (1.0±0.1 mm)DIA
All Dimensions In Inches (mm)
Tolerances Inches: X.XX= ±0.02 , X.XXX= ±0.010
Millimeters: X.X= ±0.5 , X.XX= ±0.25

EXTERNAL OUTPUT TRIM

