CHB300W-110S SERIES
300 WATT, INPUT 43-160 VDC

RAILWAY
DC-DC CONVERTER

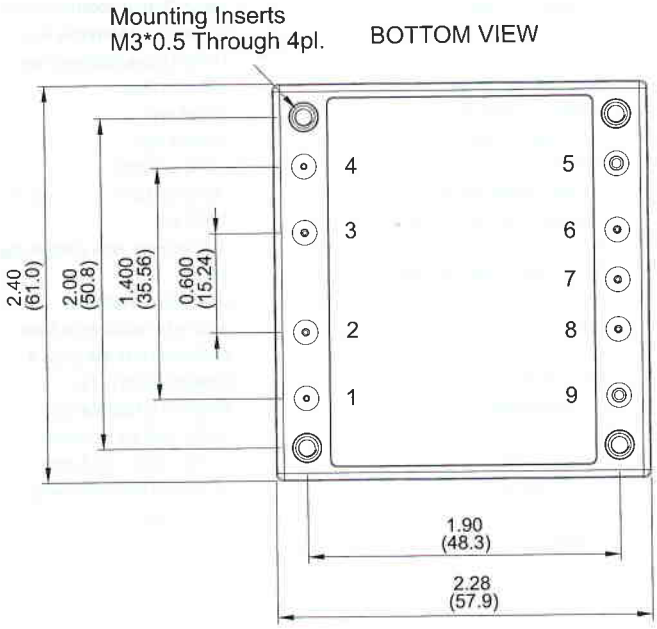
Features

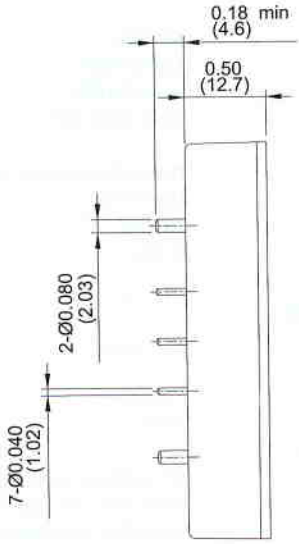
- 300W Isolated Output
- Efficiency to 90%
- Fixed Switching Frequency
- 4 : 1 Input Range
- Regulated Outputs
- Input Under-Voltage Protection
- Over Temperature Protection
- Over Voltage/Current Protection
- Remote On/Off
- Low No Load Power Consumption
- Half-Brick Size
- Safety standard: UL 60950-1 2nd (basic insulation)
- EMC: EN 55155 (EN 50121-3-2), external filter required
- Shock & Vibration: EN 50155 (EN 61373)

Approval Pending
E176177

Mechanical Dimensions

All Dimensions in Inches (mm)
Tolerance Inches: X.XX=±0.02 , X.XXX=±0.010
Millimeters: X.X=±0.5 , X.XX=±0.25

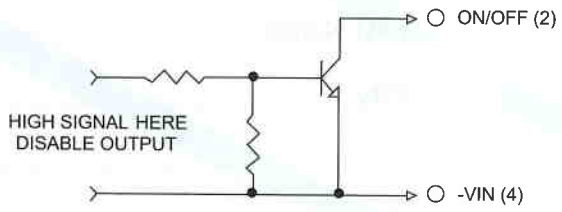




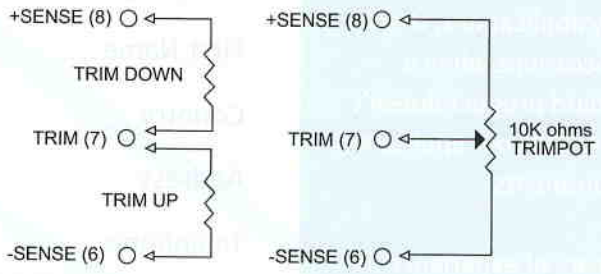
PIN	Function
1	+V Input
2	ON/OFF
3	NC
4	-V Input
5	-V Output
6	-Sense
7	Trim
8	+Sense
9	+V Output

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.	CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD		
CHB300W-110S05	43-160 VDC	5 VDC	0 mA	60 A	20 mA	3.1 A	89	2200μF
CHB300W-110S12	43-160 VDC	12 VDC	0 mA	25 A	20 mA	3.1 A	90	1000μF
CHB300W-110S24	43-160 VDC	24 VDC	0 mA	12.5 A	20 mA	3.1 A	89	560μF
CHB300W-110S28	43-160 VDC	28 VDC	0 mA	10.7 A	20 mA	3.1 A	89	470μF
CHB300W-110S48	43-160 VDC	48 VDC	0 mA	6.25 A	20 mA	3.1 A	89	220μF

Remote On/Off Control



External Output Trim



Specifications

All Specifications Typical At Nominal Line, Fill Load, and 25˚C Unless Otherwise Noted

INPUT SPECIFICATIONS

Input Voltage Range	43-160V
Input Surge Voltage (100ms max.)	200Vdc max.
Under Voltage Lockout	power up 42V power down 38V
Positive Logic Remote On/Off	see note 4 & 5
Logic Compatibility	Open Collector ref to -Input
Module On	> 3.5Vdc to 75Vdc or Open Circuit
Module Off	< 1.8Vdc
Input Filter	Pi Type

OUTPUT SPECIFICATIONS

Voltage Accuracy	±1.5% max.
Transient Response:	
25% Step Load Change	
Error Band	±5% Vout
Recover Time	< 500µs
External Trim Adj. Range	±10%
Ripple & Noise, 20MHz BW (note 3)	
5V	60mV RMS, 100mV pk-pk max.
12V	80mV RMS, 150mV pk-pk max.
24V	120mV RMS, 240mV pk-pk max.
28V	140mV RMS, 280mV pk-pk max.
48V	220mV RMS, 480mV pk-pk max.
Temperature Coefficient	±0.03%/°C
Short Circuit Protection	Continuous
Line Regulation (note 1)	±0.2% max.
Load Regulation (note 2)	±0.2% max.
Over Voltage Protection Trip Range, % Vo nom.	115-140%
Current Limit	105%-40% Nominal Output

GENERAL SPECIFICATIONS

Efficiency	See Table
Isolation Voltage	Input/Output 2250VDC min. Input/Case 2250VDC min. Output/Case 2250VDC min.
Isolation Resistance	10^7 ohm min.
Isolation Capacitance	1000pF typ.
Switching Frequency	300KHz typ.
Operating Case Temperature	-40˚C to 100˚C
Storage Temperature	-55˚C to +105˚C
Thermal Shutdown, Case Temp.	105˚C typ.
Humidity	95% RH max. Non condensing
Safety	UL60950-1 2nd (Basic Insulation)
EMC (note 7)	EN50155 (EN50121-3-2) with External Filter EN50155 (EN61373)
Shock/Vibration	EN50155 (EN60068-2-1)
Environmental	
Dimensions	2.28 x 2.40 x 0.52 inches (57.9 x 61.0 x 13.2 mm)
Case Material	Aluminum Baseplate with Plastic Case

NOTE

1. Measured from high line to low line.
2. Measured from full load to zero load.
3. Output ripple and noise measured with 10µF tantalum and 1µF ceramic capacitor across output.
4. Logic compatibility ..... open collector ref to -input
   - Module On >3.5VDC to 75VDC or open circuit
   - Module Off < 1.2Vdc
5. Suffix "N" to the model number with negative logic remote On/Off
   - Module On < 1.2VDC
   - Module Off >3.5VDC to 75VDC or open circuit
6. An external input capacitor 220µF for all models are recommended to reduce input ripple voltage.
7. Design meet EN50155 and RIA12 refer to application note.