



CQB100-110S SERIES

100 WATT

DC-DC CONVERTERS



Railway
System

FEATURES

- * 100W Isolated Output
- * Efficiency to 93%
- * 200KHz Switching Frequency
- * 3:1 Input Range
- * Regulated Outputs
- * Remote On/Off
- * Over Temperature Protection
- * Over Voltage/Current Protection
- * Continuous Short Circuit Protection
- * Quarter Brick Size Meet Industrial Standard
- * CE Mark Meets 2004/108/EC
- * UL60950-1 Approval (Except 3.3 Vout)
- * Meet EN50155



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.	CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD		
CQB100-110S3V3	66-160 VDC	3.3 VDC	0 mA	25 A	40 mA	833 mA	90	10000µF
CQB100-110S05	66-160 VDC	5.0 VDC	0 mA	20 A	30 mA	983 mA	92.5	10000µF
CQB100-110S12	66-160 VDC	12 VDC	0 mA	8.4 A	40 mA	985 mA	93	8800µF
CQB100-110S24	66-160 VDC	24 VDC	0 mA	4.2 A	60 mA	996 mA	92	1500µF

NOTE: 1. Nominal Input Voltage 110VDC

SPECIFICATIONS

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

INPUT SPECIFICATIONS:

Input Voltage Range 110V 66-160V
 Input Surge Voltage (100ms max.) 180Vdc max.
 Under Voltage Lockout power up 62V
 power down 56V

Positive Logic Remote ON/OFF

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:

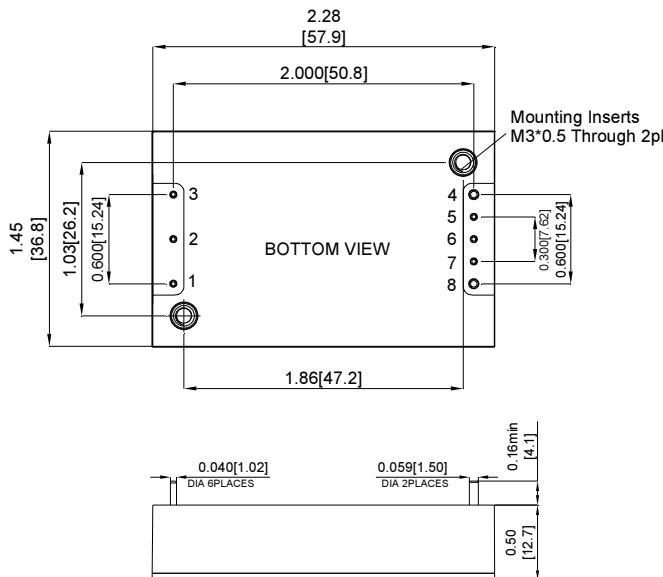
Voltage Accuracy	$\pm 1.5\%$ max.
Transient Response: 25% Step Load Change	<200 μ s
External Trim Adj. Range	$\pm 10\%$
Ripple & Noise, 20MHz BW (note3)	
3.3 & 5V.....	40mV RMS, 100mV pk-pk max.
12V	60mV RMS, 150mV pk-pk max.
24V	100mV RMS, 240mV pk-pk max.
Temperature Coefficient	$\pm 0.03\%/\text{C}$
Short Circuit Protection	Continuous
Line Regulation (note1)	$\pm 0.2\%$ max.
Load Regulation (note2)	$\pm 0.2\%$ max.
Over Voltage Protection Trip Range , % Vo nom.	115-140%
Current Limit	110%-180% Nominal Output
Start up time	45ms typ.

CASE QB

All Dimensions In Inches(mm)

Tolerances Inches: X.XX= ± 0.02 , X.XXX= ± 0.010

Millimeters: X.X = ± 0.5 , X.XX = ± 0.25



GENERAL SPECIFICATIONS:

Efficiency	See Table
Isolation Voltage	Input/Output, Input/Case 2250VDC min. Output/Case 1500VDC min.
Isolation Resistance	10^7 ohm min.
Isolation Capacitance	1000pF typ.
Switching Frequency	200KHz 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
MTBF MIL-HDBK-217F, GB, 25°C, Full Load XXS05 ... 240Khrs typ.	
XXS3V3	400Khrs typ., Others 320Khrs typ.
Safety (Except 3.3 Vout)	UL60950-1 2 nd (Basic insulation), Approval
EMC (note7)	Meet EN50155(EN50121-3-2) with External Filter
Shock/Vibration	Meet EN50155(EN61373)
Environmental	Meet EN50155(EN60068-2-1)
Dimensions	2.28x1.45x0.50 inches (57.9x36.8x12.7 mm)
Case Material	Aluminum Baseplate with Plastic Case
Weight	61.5 g

NOTE:

1. Measured from high line to low line.
 2. Measured from full load to zero load.
 3. Output ripple and noise measured with 10uF tantalum and 1uF ceramic capacitor across output.
 4. Suffix "N" to the model number with negative logic remote on/off
 - Module on < 1.8VDC
 - Module off >3.5VDC to 75VDC or open circuit
 5. Suffix "-C" to the model number with clear mounting insert (3.2mm DIA.)
 6. An external input capacitor 120uF for all models are recommended to reduce input ripple voltage.
 7. Design meet EN50155 and RIA12 refer to application note.

EXTERNAL OUTPUT TRIM

Pin	Function
1	+Vin
2	ON/OFF
3	-Vin
4	-Vout
5	-Sense
6	Trim
7	+Sense
8	+Vout

