



# CQB60W-110S SERIES

## 60 WATT

## DC-DC CONVERTERS



### FEATURES

- \* 60W Isolated Output
- \* Efficiency to 92%
- \* Low No Load Power Consumption
- \* 4:1 Input Range
- \* Regulated Outputs
- \* Remote On/Off
- \* Over Temperature/Voltage/Current Protection
- \* Continuous Short Circuit Protection
- \* Quarter Brick Size Meet Industrial Standard
- \* UL60950-1 (Basic Insulation) Approval
- \* Meets EN50155 with External Circuits
- \* Shock & Vibration Meets EN50155 (EN61373)
- \* CE Mark Meets 2014/30/EU
- \* Fire & Smoke Meets EN45545-2
- \* 4000m Operating Altitude



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.	CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD		
CQB60W-110S05	43-160 VDC	5 VDC	0 mA	12 A	5 mA	600 mA	91	6800 $\mu$ F
CQB60W-110S12	43-160 VDC	12 VDC	0 mA	5 A	5 mA	593 mA	92	3300 $\mu$ F
CQB60W-110S15	43-160 VDC	15 VDC	0 mA	4 A	5 mA	606 mA	90	3300 $\mu$ F
CQB60W-110S24	43-160 VDC	24 VDC	0 mA	2.5 A	5 mA	606 mA	90	1200 $\mu$ F
CQB60W-110S28	43-160 VDC	28 VDC	0 mA	2.14 A	5 mA	606 mA	90	1200 $\mu$ F
CQB60W-110S48	43-160 VDC	48 VDC	0 mA	1.25 A	5 mA	613 mA	89	470 $\mu$ F

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	43-160V
Input Surge Voltage (100ms max.)		180Vdc max.
Under Voltage Lockout	Power up	42V
	Power down	38V
Positive Logic Remote On/Off (note 4&5)		
Input Filter		PI Type

## OUTPUT SPECIFICATIONS:

Voltage Accuracy	±1.0% max.
Transient Response (25% Step Load Change)	<250µs
External Trim Adj. Range	±10%
Ripple & Noise, 20MHz BW(note 3)	
5V	40mV RMS, 100mV pk-pk max.
12V/15V	60mV RMS, 150mV pk-pk max.
24V/28V	100mV RMS, 240mV pk-pk max.
48V	200mV RMS, 480mV pk-pk max.
Temperature Coefficient	±0.03%/°C
Short Circuit Protection	Continuous
Line Regulation (note1)	±0.2% max.
Load Regulation (note2)	±0.2% max.
Over Voltage Protection trip Range, % Vo nom.	115-140%
Current Limit	110% - 165% Nominal Output
Start up time	15ms typ.

## GENERAL SPECIFICATIONS:

Efficiency		See Table
Isolation Voltage	Input/Output	3000VDC min.
	Input/Case	3000VDC min.
	Output/Case	1500VDC min.
Isolation Resistance		10 <sup>7</sup> 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.		110°C typ.
Humidity		95% RH max. Non condensing
Operating Altitude		4000m
MTBF	MIL-HDBK-217F, GB, 25°C, Full Load	650Khrs typ.
Safety		UL60950-1 2 <sup>nd</sup> (Basic insulation)
EMI		EN50155 (EN50121-3-2) with external filter
Shock/Vibration		EN50155 (EN61373)
Dimensions		2.28x1.45x0.50 inches (57.9x36.8x12.7 mm)
Case Material		Aluminum Baseplate with Plastic Case
Weight		61.5 g

## NOTE:

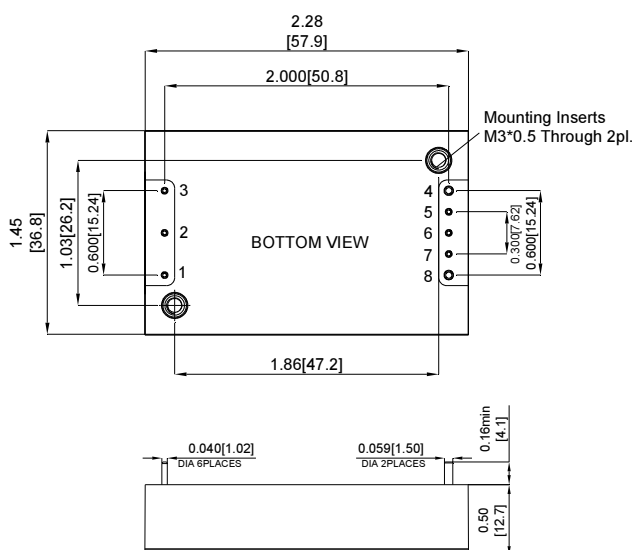
1. Measured from high line to low line.
2. Measured from full load to zero load.
3. Output ripple and noise measured with 10uF tantalum and 1uF ceramic capacitor across output.
4. Logic compatibility
  - Module on..... open collector ref to -Input
  - Module off ..... > 3.5VDC to 75VDC or open circuit
5. Suffix "N" to the model number with negative logic remote on/off
  - Module on ..... < 1.2 VDC
  - Module off ..... >3.5VDC to 75VDC or open circuit
6. Suffix "-C" to the model number with clear mounting insert (3.2mm DIA.)
7. An external input capacitor 68uF for all models are recommended to reduce input ripple voltage.
8. Design meet EN50155 and RIA12 refer to application note.

### CASE QB

All Dimensions In Inches(mm)

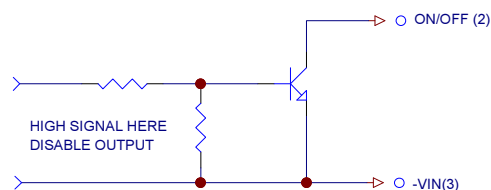
Tolerances Inches: X.XX= ±0.02 , X.XXX= ±0.010

Millimeters: X.X= ±0.5 , X.XX=±0.25



Pin	Function
1	+V Input
2	On/Off
3	-V Input
4	-V Output
5	-Sense
6	Trim
7	+Sense
8	+V Output

## REMOTE ON/OFF CONTROL



## EXTERNAL OUTPUT TRIM

