



# CQB100W SERIES

## 100WATT 4:1 INPUT DC-DC CONVERTERS



### FEATURES

- \* 100W Isolated Output
- \* Quarter-Brick Package
- \* 4:1 Input Range
- \* Efficiency to 88%
- \* Regulated Output
- \* Input Under Voltage Protection
- \* Over Temperature Protection
- \* Over Voltage/Current Protection
- \* Remote On/Off
- \* 1500VDC Isolation
- \* 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		
CQB100W-24S3V3	9-36 VDC	3.3 VDC	0 mA	30 A	120 mA	4797 mA	86	10000 $\mu$ F
CQB100W-24S05	9-36 VDC	5.0 VDC	0 mA	20 A	120 mA	4817 mA	86.5	10000 $\mu$ F
CQB100W-24S12	9-36 VDC	12 VDC	0 mA	8.3 A	80 mA	4798 mA	86.5	2200 $\mu$ F
CQB100W-24S15	9-36 VDC	15 VDC	0 mA	6.7 A	80 mA	4841 mA	86.5	2200 $\mu$ F
CQB100W-24S24	9-36 VDC	24 VDC	0 mA	4.17 A	80 mA	4793 mA	87	2200 $\mu$ F
CQB100W-48S3V3	18-75 VDC	3.3 VDC	0 mA	30 A	60 mA	2344 mA	88	10000 $\mu$ F
CQB100W-48S05	18-75 VDC	5.0 VDC	0 mA	20 A	60 mA	2367 mA	88	10000 $\mu$ F
CQB100W-48S12	18-75 VDC	12 VDC	0 mA	8.3 A	30 mA	2358 mA	88	2200 $\mu$ F
CQB100W-48S15	18-75 VDC	15 VDC	0 mA	6.7 A	30 mA	2379 mA	88	2200 $\mu$ F
CQB100W-48S24	18-75 VDC	24 VDC	0 mA	4.17 A	30 mA	2369 mA	88	2200 $\mu$ F

NOTE: 1. Nominal Input Voltage 24, 48VDC

# SPECIFICATIONS

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

## INPUT SPECIFICATIONS:

Input Voltage Range	24V	9 - 36V
	48V	18 - 75V
Input Surge Voltage (100ms max.)	24V	50Vdc max.
	48V	100Vdc max.
Under voltage lockout	24Vin power up	8.8V typ.
	power down	8V typ.
	48Vin power up	17V typ.
	power down	16V typ.
Input Filter	Pi Type	
Positive Logic Remote On/Off (note4&5)		

## OUTPUT SPECIFICATIONS:

Voltage Accuracy	±1.0% max.
Transient Response: 75% to 100% Step Load Change	
Error Band	3.3V±7% Vout, Others ±5% Vout
Recover Time	<500us
External Trim Adj. Range (note6)	±10%
Ripple and Noise, 20MHz BW (note3)	
3.3V & 5V	40mV RMS, 100mV pk-pk max.
12V & 15V	60mV RMS, 150mV pk-pk max.
24V	100mV RMS, 240mV pk-pk max.
Temperature Coefficient	±0.03%°C max.
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%-160% Nominal Output
Start up Time	120ms typ.

## GENERAL SPECIFICATIONS:

Efficiency	See Table
Isolation Voltage	Input/Output, Input/Case, Output/Case 1500VDC min.
Isolation Resistance	10 <sup>7</sup> Ohms min.
Isolation Capacitance	1000pF typ.
Switching Frequency	48Vin 250KHz typ.
	24Vin 220KHz typ.
Operating Case Temperature	-40°C to 100°C
Storage Temperature Range	-40°C to +105°C
Thermal Shutdown, Case Temp.	110°C typ.
Humidity	95% RH max. Non Condensing
MTBF	MIL-HDBK-217F, GB, 25°C, Full Load 600Khrs typ.
Case Material	Aluminum Base-Plate with Plastic Case
Dimensions	1.45 x 2.28 x 0.50 inches (36.8 x 57.9 x 12.7 mm)
Weight	66g

## NOTE:

1. Measured from high line to low line.
2. Measured from full load to min. load.
3. The output noise is measured with 10uF tantalum capacitor and 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. Trim-up ..... connect a resistor between the trim pin and +Sense  
 Trim-down ..... connect a resistor between the trim pin and -Sense
7. Suffix "-C" to the Model Number with Clear Mounting Insert (3.2mm DIA.)
8. An external input capacitor 47uF for 48Vin models and 100uF for 24Vin models are recommended to reduce input ripple voltage.

