



# CQB50W12 SERIES

## 30-50 WATT 12:1 INPUT DC-DC CONVERTERS



### FEATURES

- \* 30-50W Isolated Output
- \* Efficiency to 89%
- \* Fixed Switching Frequency
- \* 12:1 Input Range
- \* Regulated Outputs
- \* Remote On/Off
- \* Low No Load Power Consumption
- \* Over Temperature Protection
- \* Over Voltage/Current Protection
- \* Continuous Short Circuit Protection
- \* Quarter Brick Size Meet Industrial Standard
- \* CE Mark Meets 2014/30/EU
- \* UL60950-1 2<sup>nd</sup> (Basic Insulation) Approval
- \* Meet EN50155 with External Circuits
- \* Shock & Vibration Meets EN50155 (EN61373)
- \* Fire & Smoke Meet EN45545-2
- \* 5000m Operating Altitude



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.		CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD	(1)	(2)	
CQB50W12-72S05	14-160 VDC	5 VDC	0 mA	6.0 A	5 mA	530 mA	83	81	10000uF
CQB50W12-72S12	14-160 VDC	12 VDC	0 mA	4.2 A	5 mA	810 mA	87	86	6800μF
CQB50W12-72S24	14-160 VDC	24 VDC	0 mA	2.1 A	5 mA	810 mA	89	87	3300μF
CQB50W12-72S48	14-160 VDC	48 VDC	0 mA	1.05 A	8 mA	810 mA	88	85	680μF

NOTE:

1. Nominal Input Voltage 72 VDC
2. Measured at 110Vin

# SPECIFICATIONS

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

## INPUT SPECIFICATIONS:

Operating Input Voltage Range	72V	14V-160V
Input Surge Voltage (100ms max.)		200Vdc max.
Under Voltage Lockout	Power up	13.6V
	Power down	12.2V

Positive Logic Remote On/Off (note 4&5)

Input Filter ..... PI Type

## OUTPUT SPECIFICATIONS:

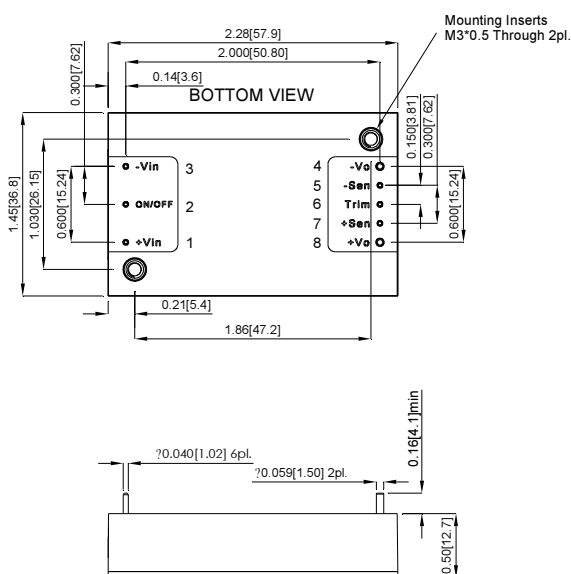
Voltage Accuracy	±1.0% max.
Transient Response (25% Step Load Change)	<250µs
External Trim Adj. Range	-20%, +10%
Ripple & Noise, 20MHz BW (note3)	40mV RMS, 100mV pk-pk max.
Temperature Coefficient	±0.02%/°C max.
Short Circuit Protection	Continuous
Line Regulation (note1)	±0.2% max.
Load Regulation (note2)	±0.2% max.
Over Voltage Protection trip Range, % Vo nom.	115-140%
Current Limit	110% - 220% Nominal Output
Start up time	30ms 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 22µF aluminum solid capacitor and 1µF ceramic capacitor across output.
4. Logic compatibility ..... open collector ref to -Input  
Module on..... > 3.5VDC to 160VDC or open circuit  
Module off ..... 0 to <1.2 VDC
5. Suffix "N" to the model number with negative logic remote on/off  
Module on ..... 0 to <1.2 VDC  
Module off ..... >4.0VDC to 160VDC or open circuit
6. Suffix "-C" to the model number with clear mounting insert (3.2mm DIA.)
7. An external input capacitor 68µF for all models are recommended to reduce input ripple voltage
8. For information about EN50155 and RIA12, refer to application note.

All Dimensions In Inches(mm)

Tolerances Inches: X.XX= ±0.02 , X.XXX= ±0.010  
Millimeters: X.X= ±0.5 , X.XX=±0.25

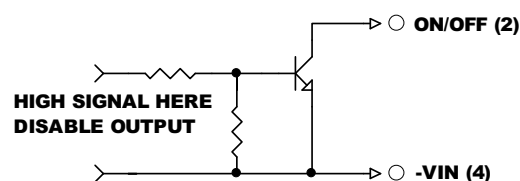


PIN CONNECTION	
PIN	Function
1	+V Input
2	On/Off
3	-V Input
4	-V Output
5	-Sense
6	Trim
7	+Sense
8	+V Output

## GENERAL SPECIFICATIONS:

Efficiency	See Table
Isolation Voltage	Input/Output ..... 3000VDC min. Input/Case ..... 2500VDC min. Output/Case ..... 500VAC min.
Isolation Resistance	10 <sup>8</sup> ohm min.
Isolation Capacitance	1000pF typ.
Switching Frequency	240KHz typ.
Operating Case Temperature	-40°C to +100°C
Storage Temperature	-55°C to +125°C
Thermal Shutdown, Case Temp.	110°C typ.
Humidity	95% RH max. Non condensing
Operating Altitude	5000m
MTBF	MIL-HDBK-217F, GB, 25°C, Full Load ..... 780Khrs typ.
Safety	UL60950-1 2 <sup>nd</sup> (Basic insulation)
EMC (note8)	EN50155 (EN50121-3-2) with external filter
Shock/Vibration	EN50155 (EN61373)
Environmental	EN50155(EN60068-2-1)
Fire & Smoke	EN45545-2
Dimensions	2.28×1.45×0.50 inches (57.9×36.8×12.7 mm)
Case Material	Aluminum Baseplate with Plastic Case
Weight	61.5 g

## REMOTE ON/OFF CONTROL



## EXTERNAL OUTPUT TRIM

