

50 WATT 4:1 INPUT DC-DC CONVERTER



Features:

- 50W Isolated Output
- No Tantalum Capacitor Inside
- Quarter-Brick Size, Six-Sided Shield Metal Case
- High Efficiency up to 92%
- 300KHz Switching Frequency
- 4 : 1 Input Range, single output
- Regulated Outputs
- Continuous Short Circuit Protection
- Full Load Operation up to 80°C with Heat-sink M-C091 Natural Convection
- Over Temperature/Voltage/Current Protection
- CE Mark Meets 2004/108/EC
- Safety Meets UL60950-1, EN60950-1, and IEC60950-1

Electrical Characteristics:

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.		CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD	(2)	(3)	
CQE50W-24S3V3	9-36 VDC	3.3 VDC	0 mA	10 A	100 mA	1528 mA	90	90.5	10000uF
CQE50W-24S05	9-36 VDC	5.0 VDC	0 mA	10 A	100 mA	2277 mA	91	91.5	10000uF
CQE50W-24S12	9-36 VDC	12 VDC	0 mA	4.16 A	100 mA	2261 mA	91	91.5	4160uF
CQE50W-24S15	9-36 VDC	15 VDC	0 mA	3.33 A	100 mA	2287 mA	91.5	91.5	3330uF
CQE50W-24S24	9-36 VDC	24 VDC	0 mA	2.08 A	60 mA	2311 mA	90	90	2080uF
CQE50W-24S48	9-36 VDC	48 VDC	0 mA	1.04 A	60 mA	2311 mA	88.5	88.5	1040uF (4)
CQE50W-48S3V3	18-75 VDC	3.3 VDC	0 mA	10 A	60 mA	764 mA	90	90	10000uF
CQE50W-48S05	18-75 VDC	5.0 VDC	0 mA	10 A	60 mA	1132 mA	91.5	92	10000uF
CQE50W-48S12	18-75 VDC	12 VDC	0 mA	4.16 A	60 mA	1130 mA	92	92	4160uF
CQE50W-48S15	18-75 VDC	15 VDC	0 mA	3.33 A	60 mA	1144 mA	91	91	3330uF
CQE50W-48S24	18-75 VDC	24 VDC	0 mA	2.08 A	60 mA	1156 mA	91	90.5	2080uF
CQE50W-48S48	18-75 VDC	48 VDC	0 mA	1.04 A	60 mA	1156 mA	89	89	1040uF (4)

- NOTE:
1. Nominal Input Voltage 24, 48VDC
 2. Measured at 12VDC for 24SXX, 24VDC for 48SXX
 3. Measured at Nominal Input Voltage
 4. Require a 10uF Aluminum Capacitor Connected Between +Vout and -Vout for 48Vout Models

Specifications

INPUT SPECIFICATIONS:

Input Voltage Range	24V	9-36V
	48V	18-75V
Input Surge Voltage (100ms max.)	24V	500Vdc max.
	48V	100Vdc max.
Under voltage lockout	24Vin power up	8.8V
	24Vin power down	8.0V
	48Vin power up	17V
	48Vin power down	16V
Positive Logic Remote ON/OFF (see note 4 & 5)		
Input Filter		PI Type

OUTPUT SPECIFICATIONS:

Voltage Accuracy:	±1.5% max.
Transient Response: 75% to 100% Step Load Change	
Error Band	±5% Vout
Recover Time	<500us
External Trim Adj. Range	±10%
Ripple & Noise, 20MHz BW (see note 3)	
3.3V & 5V	40mV RMS, 100mV pk-pk max.
12V & 15V	60mV RMS, 150mV pk-pk max.
24V	100mV RMS, 240mV pk-pk max.
48V	200mV 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	110% ~165% Nominal Output
Start up time	20ms typ.

GENERAL SPECIFICATIONS:

Efficiency		See Table
Isolation Voltage	Input/Output	1500VDC min.
	Input/Case	1500VDC min.
	Output/Case	1500VDC min.
Isolation Resistance		10 ⁷ ohm min.
Isolation Capacitance		1000pF typ
Switching Frequency		300KHz typ.
Operating Case Temperature		-40°C to 105°C
Storage Temperature		-55°C to +125°C
Thermal Shutdown, Case Temp.		110°C typ.
Humidity		95% RH max. Non condensing
MTBF	MIL-STD-217F, GB, 25°C, Full Load	T.B.D. hrs
Dimensions		1.45 x 2.28 x 0.50 inches(36.8 x 57.9 x 12.7 mm)
Case Material		Aluminum with Non-Conducted Base
Weight		63g

NOTE:

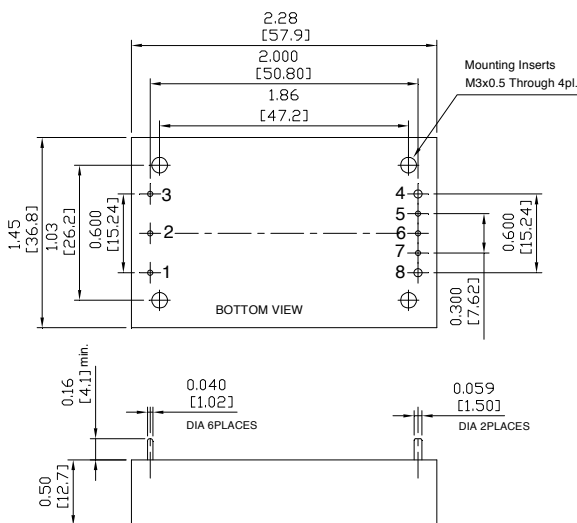
1. Measured From High Line to Low Line
2. Measured From Full Load to Zero Load
3. Output Ripple and Noise measured with 10uF aluminum and 1uF ceramic capacitor across output for 48Vout, and with 10uF tantalum and 1uF ceramic capacitor for others.
4. Logic Compatibility Open Collector ref to -Input
 - 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

Typical at nominal line, full load and 25°C unless otherwise specified

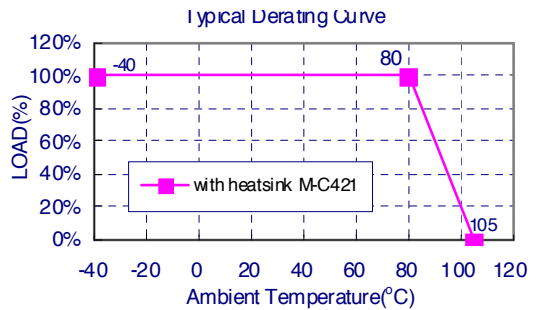
CQE50W Series

CASE QB

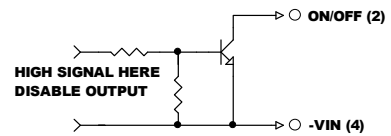
All Dimensions In Inches(mm)
 Tolerances Inches: X.XX= ±0.02 , X.XXX= ±0.010
 Millimeters: X.X= ±0.5 , X.XX=±0.25



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



REMOTE ON/OFF CONTROL



External Output Trim

