CQE50W SERIES

50 WATT 4:1 INPUT DC-DC CONVERTERS SINGLE OUTPUT

E176177

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
* Regulated Outputs
* Continuous Short Circuit Protection
* Full Load Operation up to 80℃
  with Heat-sink QBT210 (M-C421) Natural Convention
* Over Temperature/Voltage/Current Protection
* UL60950-1 2nd Approval
* Safety Meets IEC/EN/UL62368-1

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	10000μF
CQE50W-24S05	9-36 VDC	5.0 VDC	0 mA	10 A	100 mA	2277 mA	91	91.5	10000μF
CQE50W-24S12	9-36 VDC	12 VDC	0 mA	4.16 A	100 mA	2261 mA	91	91.5	4160μF
CQE50W-24S15	9-36 VDC	15 VDC	0 mA	3.33 A	100 mA	2287 mA	91.5	91.5	3330μF
CQE50W-24S24	9-36 VDC	24 VDC	0 mA	2.08 A	60 mA	2311 mA	90	90	2080μF
CQE50W-24S48	9-36VDC	48 VDC	0 mA	1.04 A	60 mA	2311 mA	88.5	88.5	1040μF**(4)**
CQE50W-48S3V3	18-75VDC	3.3 VDC	0 mA	10 A	60 mA	764 mA	90	90	10000μF
CQE50W-48S05	18-75VDC	5.0 VDC	0 mA	10 A	60 mA	1132 mA	91.5	92	10000μF
CQE50W-48S12	18-75VDC	12 VDC	0 mA	4.16 A	60 mA	1130 mA	92	92	4160μF
CQE50W-48S15	18-75VDC	15 VDC	0 mA	3.33 A	60 mA	1144 mA	91	91	3330μF
CQE50W-48S24	18-75VDC	24 VDC	0 mA	2.08 A	60 mA	1156 mA	91	90.5	2080μF
CQE50W-48S48	18-75VDC	48 VDC	0 mA	1.04 A	60 mA	1156 mA	89	89	1040μF**(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

All Specifications Typical at Nominal Line, Full Load, and 25℃ 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
24Vin power down 8.0V
48Vin power up 17V
48Vin power down 16V
Positive Logic Remote On/Off (note 4 & 5)
Input Filter ..... PI Type

OUTPUT SPECIFICATIONS:

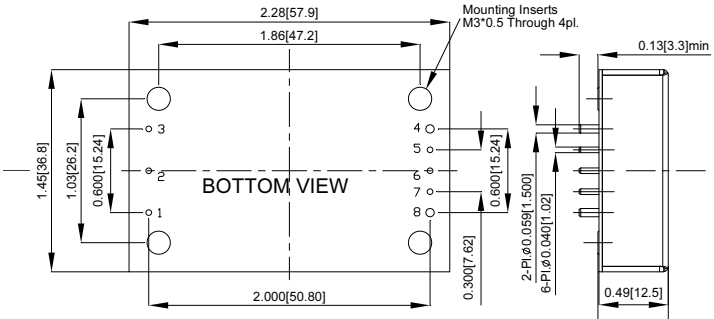
Voltage Accuracy ..... ±1.0% max.
Transient Response: 75% -100% Step Load Change
Error Band ..... ±5% Vout
Recover Time.....<500us
External Trim Adj. Range ..... ±10%
Ripple & Noise, 20MHz BW (note3)
3.3V & 5V ..... 40mV RMS, 100mV pk-pk max.
12V & 15V ..... 60mV RMS, 150mV pk-pk max.
24V ..... 100mV RMS, 240mV pk-pk max.
48V ..... 200mV RMS, 480mV 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% ~165% Nominal Output
Start up Time ..... 20ms typ.

GENRAL 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℃ to 105℃
Storage Temperature ..... -55℃ to +125℃
Thermal Shutdown, Case Temp. ..... 110℃ typ.
Humidity ..... 95% RH max. Non Condensing
MTBF ... MIL-HDBK-217F. GB. 25℃. Full Load ..... XXS24. XXS48 .... 800Khrs typ.
Others ..... 600Khrs typ.
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 ..... 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

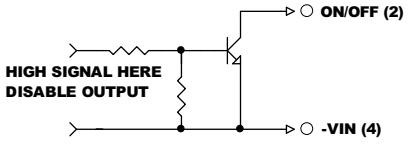


CASE QB

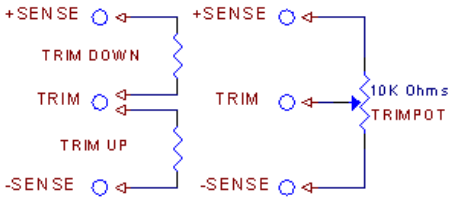
All Dimensions In Inches(mm)
Tolerances Inches: X.XX= ±0.02 , X.XXX= ±0.010
Millimeters: X.X= ±0.5 , X.XX=±0.25

PIN CONNECTION	
Pin	Function
1	+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



Typical Derating Curve

