

# COESOW

S E R I E S

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



### 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°C with Heat-sink M-C091 Natural Convention
- Over Temperature/Voltage/Current Protection
- CE Mark Meets 2004/108/EC
- Safety Meets UL60950-1, EN60950-1, and IEC60950-1

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

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 10µF 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 .....	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 ( see note 4 & 5 )		
Input Filter .....		PI Type

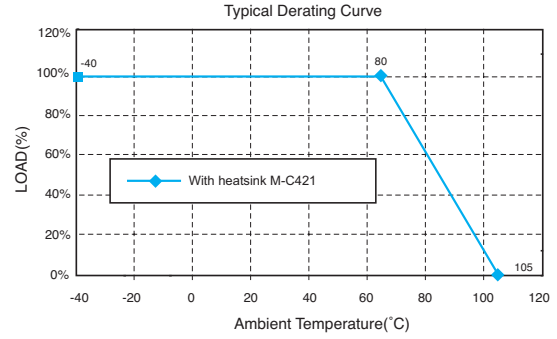
### OUTPUT SPECIFICATIONS:

Voltage Accuracy.....	±1.5% max.
Transient Response: 75% to 100% Step Load Change	
Error Band .....	±5% Vout
Recover Time.....	< 500µs
External Trim Adj. Range .....	±10%
Ripple & Noise, 20MHz BW <sup>3</sup>	
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 <sup>1</sup> .....	±0.2% max.
Load Regulation <sup>2</sup> .....	±0.2% max.
Over Voltage Protection trip Range, % Vo nom. ....	115-140%
Current Limit .....	110% -165% Nominal Output
Start up time .....	20ms typ.

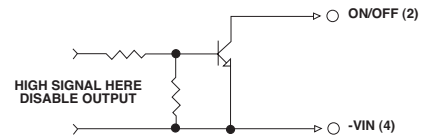
### GENERAL SPECIFICATIONS:

Efficiency .....	See Table
Isolation Voltage .....	Input/Output .....
	Input/Case .....
	Output/Case .....
Isolation Resistance .....	10 <sup>7</sup> 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..XXS24, XXS48..	800Khrs typ.
	Others .....
Dimensions .....	1.45x2.28x0.50 inches (36.8x57.9x12.7 mm)
Case Material .....	Aluminum with Non-Conducted Base
Weight .....	63g

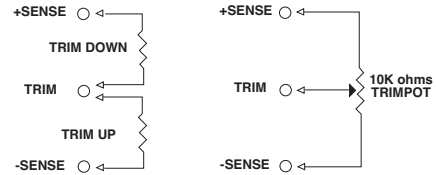
## CQE50W Series Derating Curve



### Remote On/Off Control



### External Output Trim

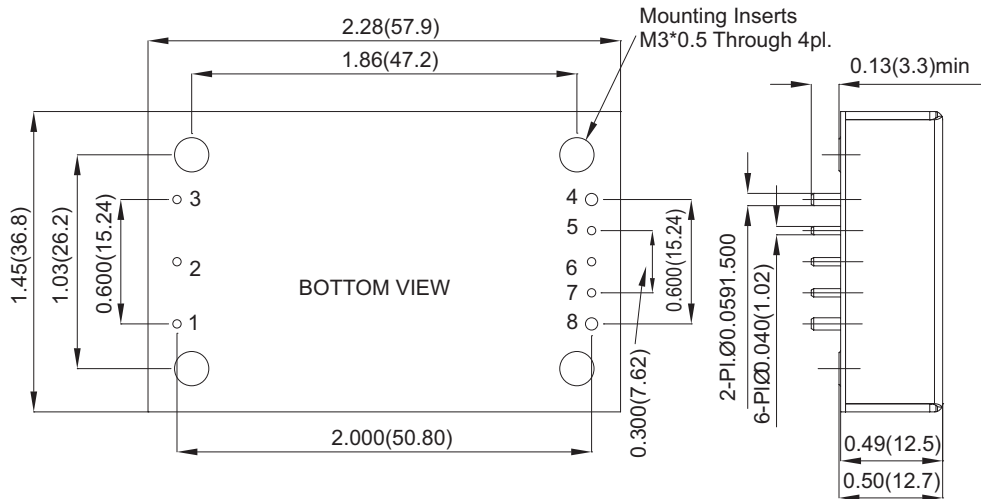


### NOTE:

1. Measured from high line to low line.
2. Measured from full load to zero load.
3. Output ripple and noise measured with 10µF aluminum and 1µF ceramic capacitor across output for 48Vout and with 10µF tantalum and 1µF ceramic capacitor for others.
4. Logic compatibility .....
5. Suffix "N" to the model number with negative logic remote on/off

## CASE QB

All Dimensions In Inches(mm)  
 Tolerance 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