



# CHE100/CHE100W SERIES

## 100 WATT 2:1/4:1 INPUT DC-DC CONVERTERS

### SINGLE OUTPUT



## FEATURES

- \* 100W Isolated Output
- \* Half-Brick Size, Six-Sided Shield Metal Case
- \* High Efficiency to 93%
- \* 2:1/4:1 Input Range
- \* Regulated Outputs
- \* 250KHz Switching Frequency
- \* Continuous Short Circuit Protection
- \* Input Under Voltage Protection
- \* Over Temperature/Voltage/Current Protection
- \* Remote On/Off
- \* Full Load Operation up to 60°C with Heat-sink M-C091 Natural Convection
- \* No Tantalum Capacitor Inside
- \* CE Mark Meets 2004/108/EC
- \* Safety Meets UL60950-1, EN60950-1 and IEC60950-1

### CHE100 Series

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.	CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD		
CHE100-24S12	18-36 VDC	12 VDC	0 mA	8.4 A	200 mA	4.57 A	92	8400µF
CHE100-24S24	18-36 VDC	24 VDC	0 mA	4.2 A	100 mA	4.57 A	92	4200µF <sup>(2)</sup>

### CHE100W Series

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		(4)	(3)	CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD			
CHE100W-24S3V3	9-36 VDC	3.3 VDC	0 mA	25 A	200 mA	3.94 A	85.5	87	25000µF
CHE100W-24S05	9-36 VDC	5 VDC	0 mA	20 A	150 mA	4.66 A	88.5	89.5	20000µF
CHE100W-24S12	9-36 VDC	12 VDC	0 mA	8.4 A	200 mA	4.62 A	90	90.5	8400µF
CHE100W-24S15	9-36 VDC	15 VDC	0 mA	6.7 A	200 mA	4.62 A	89.5	90.5	6700µF
CHE100W-24S24	9-36 VDC	24 VDC	0 mA	4.2 A	100 mA	4.76 A	88.5	89	4200µF <sup>(2)</sup>
CHE100W-24S48	9-36 VDC	48 VDC	0 mA	2.1 A	100 mA	4.76 A	89.5	88.5	2100µF <sup>(2)</sup>
CHE100W-48S3V3	18-75 VDC	3.3 VDC	0 mA	25 A	130 mA	1.96 A	87.5	88	25000µF
CHE100W-48S05	18-75 VDC	5 VDC	0 mA	20 A	130 mA	2.28 A	91.5	92	20000µF
CHE100W-48S12	18-75 VDC	12 VDC	0 mA	8.4 A	100 mA	2.26 A	92.5	93	8400µF
CHE100W-48S15	18-75 VDC	15 VDC	0 mA	6.7 A	100 mA	2.26 A	91.5	92.5	6700µF
CHE100W-48S24	18-75 VDC	24 VDC	0 mA	4.2 A	100 mA	2.32 A	91	91	4200µF <sup>(2)</sup>
CHE100W-48S48	18-75 VDC	48 VDC	0 mA	2.1 A	100 mA	2.32 A	91.5	90.5	2100µF <sup>(2)</sup>

NOTE: 1. Nominal Input Voltage 24, 48 VDC

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

# 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
	CHE100-24SXX	..... 18-36V

Input Surge Voltage (100ms max.)	24V	..... 50Vdc max.
	48V	..... 100Vdc max.

Under voltage lockout	24Vin power up	..... 8.8V
	24Vin power down	..... 8.0V
	CHE100-24SXX/48Vin power up	..... 17V
	CHE100-24SXX/48Vin power down	..... 16V

Positive Logic Remote ON/OFF (see note4&5)

Input Filter ..... Pi Type

## OUTPUT SPECIFICATIONS:

Voltage Accuracy ..... ±1.5% max.

Transient Response: 25% Step Load Change ..... <500µs

External Trim Adj. Range ..... ±10%

Ripple & Noise, 20MHz BW

3.3V & 5V	..... 40mV RMS, 100mV pk-pk max.
12V & 15V	..... 60mV RMS, 120mV 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 (note1) ..... ±0.2% max.

Load Regulation (note2) ..... ±0.2% max.

Over Voltage Protection Trip Range, % Vo nom. ..... 115-140%

Current Limit ..... 110%-140% Nominal Output

Start up time ..... 10mS typ.

## GENERAL SPECIFICATIONS:

Efficiency ..... See Table

Isolation Voltage ..... Input/Output ..... 1500VDC min.  
Input/Case, Output/Case ..... 1500VDC min.

Isolation Resistance ..... 10<sup>7</sup> ohm min.

Isolation Capacitance ..... 1000pF typ.

Switching Frequency ..... 250KHz typ.

Operating Case Temperature ..... -40°C to 105°C

Storage Temperature ..... -55°C to +105°C

Thermal Shutdown Case Temperature ..... 110°C typ.

Humidity ..... 95% RH max. Non condensing

MTBF ..... MIL-STD-217F, GB, 25°C, Full Load ..... XXS05: 750Khrs typ.

Others: 880Khrs typ.

Dimensions ..... 2.28×2.40×0.50 inches (57.9x61.0x12.7 mm)

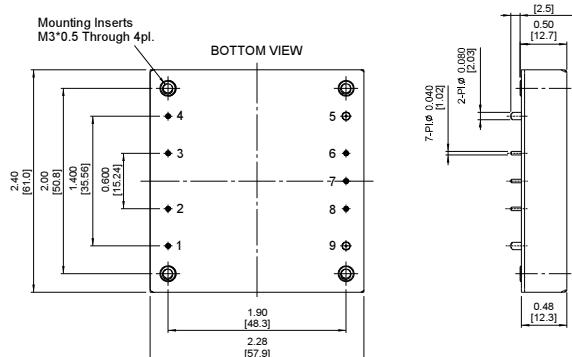
Case Material ..... Aluminum with Non-Conducted Base

Weight ..... 95g

## NOTE:

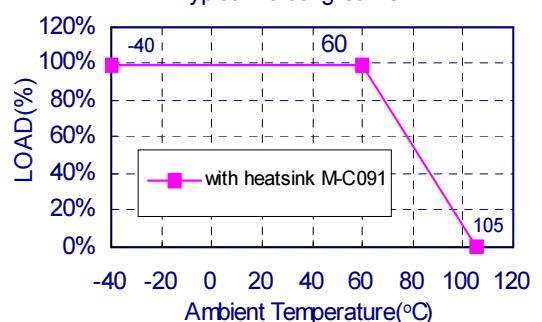
1. Measured from high line to low line.
2. Measured from full load to zero load.
3. Output ripple and noise measured with 10uF tantalum and 1uF ceramic capacitor across output.  
(24V&48V: 10uF aluminum and 1uF ceramic capacitor across output.)
4. Logic compatibility ..... open collector refer to -Vin  
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 HB  
All Dimensions In Inches/mm  
Tolerances Inches: X.XX= ±0.02 , X.XXX= ±0.010  
Millimeters: X.X= ±0.5 , XXX=±0.25

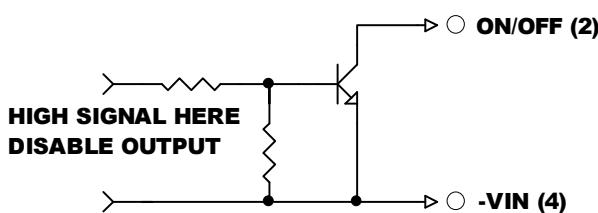


Pin	Function
1	+V Input
2	On/Off
3	CASE
4	-V Input
5	-V Output
6	-Sense
7	Trim
8	+Sense
9	+VOutput

Typical Derating Curve



## REMOTE ON/OFF CONTROL



## EXTERNAL OUTPUT TRIM

