



# CHB50 SERIES

## 33 - 50 WATT WIDE INPUT DC-DC CONVERTERS SINGLE OUTPUT



### FEATURES

- \* 33W-50W Isolated Output
- \* Efficiency to 89%
- \* 300/400KHz Switching Frequency
- \* 2 : 1 Input Range
- \* Regulated Outputs
- \* Continuous Short Circuit Protection
- \* Five-Sided Metal Case
- \* Half-Brick Size Meet Industrial Standard
- \* CE Mark Meets 2006/95/EC, 93/68/EEC, and 89/336/EEC
- \* Safety Meets UL60950-1, EN60950-1 and IEC60950-1
- \* UL60950-1 Approval



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.	CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD		
CHB50-12S33	9 -18 VDC	3.3 VDC	0 mA	10 A	50 mA	3481 mA	79	10000uF
CHB50-12S05	9 -18 VDC	5 VDC	0 mA	10 A	50 mA	5020 mA	83	10000uF
CHB50-12S12	9 -18 VDC	12 VDC	0 mA	4.16 A	50 mA	4781 mA	87	4000uF
CHB50-12S15	9 -18 VDC	15 VDC	0 mA	3.33 A	50 mA	4781 mA	87	2000uF
CHB50-12S24	9 -18 VDC	24 VDC	0 mA	2.08 A	50 mA	4781 mA	87	1500uF
CHB50-24S33	18-36 VDC	3.3 VDC	0 mA	10 A	50 mA	1698 mA	81	10000uF
CHB50-24S05	18-36 VDC	5 VDC	0 mA	10 A	50 mA	2450 mA	85	10000uF
CHB50-24S12	18-36 VDC	12 VDC	0 mA	4.16 A	50 mA	2363 mA	88	10000uF
CHB50-24S15	18-36 VDC	15 VDC	0 mA	3.33 A	50 mA	2363 mA	88	4000uF
CHB50-24S24	18-36 VDC	24 VDC	0 mA	2.08 A	50 mA	2363 mA	88	2000uF
CHB50-48S33	36-75 VDC	3.3 VDC	0 mA	10 A	50 mA	848 mA	81	10000uF
CHB50-48S05	36-75 VDC	5 VDC	0 mA	10 A	50 mA	1240 mA	84	10000uF
CHB50-48S12	36-75 VDC	12 VDC	0 mA	4.16 A	50 mA	1181 mA	88	10000uF
CHB50-48S15	36-75 VDC	15 VDC	0 mA	3.33 A	50 mA	1181 mA	88	4000uF
CHB50-48S24	36-75 VDC	24 VDC	0 mA	2.08 A	50 mA	1168 mA	89	2000uF

NOTE: 1. Nominal Input Voltage 12, 24 or 48VDC

# SPECIFICATIONS

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

## INPUT SPECIFICATIONS:

Input Voltage Range	12V	9-18V
	24V	18-36V
	48V	36-75V
Input Surge Voltage (100ms max.)	12V	25Vdc max.
	24V	50Vdc max.
	48V	100Vdc max.

### Under Voltage Lockout:

12Vin	power up	>>>8.8V	power down	>>>>8V
24Vin	power up	>>>17V	power down	>>>>16V
48Vin	power up	>>>34V	power down	>>>>32.5V

Positive Logic Remote ON/OFF (see note3&4)

Input Filter ..... Pi Type

## OUTPUT SPECIFICATIONS:

Voltage Accuracy	±1.0% max.
Transient Response: 25% Step Load Change	<500µs
External Trim Adj. Range	±10%
Ripple & Noise, 20MHz BW(see note5)	

3.3V & 5V	20mV RMS max.
	75mV pk-pk max.
12V & 15V	30mV RMS max.
	100mV pk-pk max.
24V	100mV RMS max.
	240mV pk-pk max.

Temperature Coefficient	±0.03%/°C
Short Circuit Protection	Continuous
Line Regulation (see note1)	±0.2% max.
Load Regulation (see note2)	±0.2% max.
Over Voltage Protection Trip Range, % Vo nom.	115-140%
Current Limit	110% ~150% Nominal Output
Start up time	5ms typ.

CASE HB

All Dimensions In Inches(mm)

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

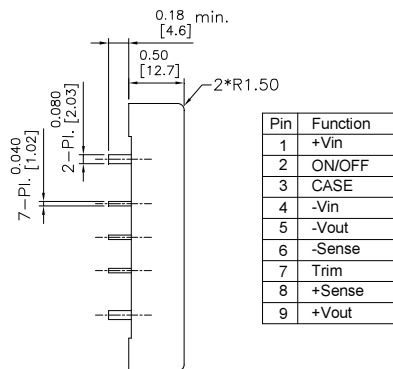
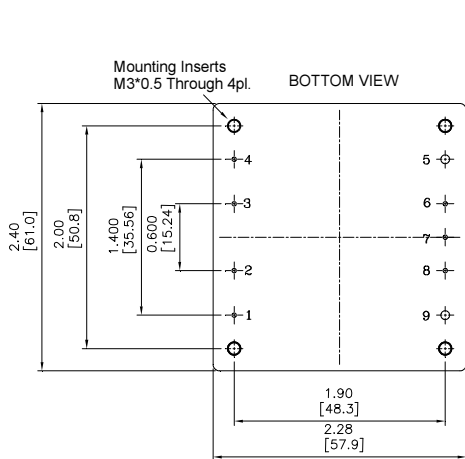
Millimeters: X.X= ±0.5 , X.XX=±0.25

## GENERAL SPECIFICATIONS:

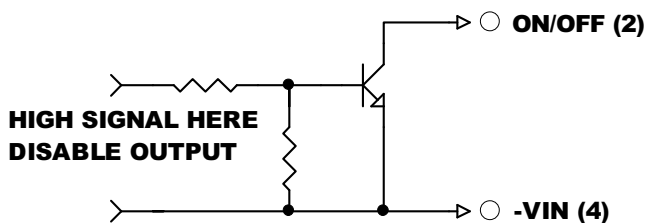
Efficiency	See Table
Isolation Voltage	Input/Output 1500VDC min.
	Input/Case 1500VDC min.
	Output/Case 1500VDC min.
Isolation Capacitance	1000pF typ.
Isolation Resistance	10 <sup>7</sup> ohm min.
Switching Frequency	(12/24)Vin 400KHz typ.
	48Vin 300KHz typ.
Operating Case Temperature	-40°C to 100°C
Storage Temperature	-55°C to +105°C
Thermal Shutdown Case Temp.	100°C typ.
Humidity	95% RH max. Non condensing
MTBF	MIL-STD-217F, GB, 25°C, Full Load 1000Khrs typ.
Dimensions	2.28x2.40x0.50 inches (57.9x61.0x12.7 mm)
Case Material	Aluminum
Weight	88g

## NOTE:

1. Measured from high line to low line.
2. Measured from full load to zero load.
3. Logic compatibility ..... open collector ref to -Input  
 Module on ..... open circuit  
 Module off ..... < 0.8VDC
4. Suffix "N" to the model number with negative logic remote on/off.
5. Output ripple and noise measured with 10uF tantalum and 1uF ceramic capacitor across output.
6. Suffix "-C" to the model number with clear mounting Insert (3.2mm DIA.)
7. ON/OFF Pin is not directly applied voltage, please refer to remote on / off control circuit.



## REMOTE ON/OFF CONTROL



## EXTERNAL OUTPUT TRIM

