



# CHB200 SERIES

## 165 TO 200 WATT 2:1 INPUT DC-DC CONVERTERS SINGLE OUTPUT



### FEATURE

- \* 165 - 200W Isolated Output
- \* Efficiency to 93%
- \* Fixed Switching Frequency
- \* Input under-voltage Protection
- \* Over Temperature Protection
- \* Over Voltage/Current Protection
- \* Remote On/Off
- \* Industry Standard Half-Brick Package
- \* Fully Isolated 1500VDC
- \* No Tantalum Capacitor Inside



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.	CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD		
CHB200-24S3V3	18-36 VDC	3.3 VDC	0 mA	50 A	140 mA	7.64 A	90	10000 $\mu$ F
CHB200-24S05	18-36 VDC	5 VDC	0 mA	40 A	240 mA	9.16 A	91	10000 $\mu$ F
CHB200-24S12	18-36 VDC	12 VDC	0 mA	16.7 A	230 mA	9.03 A	92.5	10000 $\mu$ F
CHB200-24S24	18-36 VDC	24 VDC	0 mA	8.3 A	40 mA	9.12 A	91	2200 $\mu$ F
CHB200-24S48	18-36 VDC	48 VDC	0 mA	4.2 A	70 mA	9.23 A	91	2000 $\mu$ F
CHB200-48S3V3	36-75 VDC	3.3 VDC	0 mA	50 A	80 mA	3.80 A	90.5	10000 $\mu$ F
CHB200-48S05	36-75 VDC	5 VDC	0 mA	40 A	120 mA	4.55 A	91.5	10000 $\mu$ F
CHB200-48S12	36-75 VDC	12 VDC	0 mA	16.7 A	90 mA	4.49 A	93	10000 $\mu$ F
CHB200-48S24	36-75 VDC	24 VDC	0 mA	8.3 A	50 mA	4.56 A	91	2200 $\mu$ F
CHB200-48S48	36-75 VDC	48 VDC	0 mA	4.2 A	60 mA	4.59 A	91.5	2000 $\mu$ F

NOTE: 1. Nominal Input Voltage 24, 48 VDC

2. The output terminal of 48Vout models required a minimum capacitor 47 $\mu$ F to maintain specified regulation.

# SPECIFICATIONS

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

## INPUT SPECIFICATIONS:

Input Voltage Range	24V	18-36V
	48V	36-75V
Input Surge Voltage (100ms max.)	24V	50Vdc max.
	48V	100Vdc max.
Under voltage lockout	24Vin power up	17V
	24Vin power down	16V
	48Vin power up	35V
	48Vin power down	33V

Positive Logic Remote On/Off:

Logic Compatibility	Open Collector ref to -Input
Module on	> 3.5Vdc to 75Vdc or Open Circuit
Module off	0 to < 1.2Vdc

Input Filter ..... PI Type

## OUTPUT SPECIFICATIONS:

Voltage Accuracy: ..... ±1.5% max.

Transient Response:25% Step Load Change ..... <500u sec.

External Trim Adj. Range (note 5) ..... ±10%

Ripple & Noise, 20MHz BW

3.3V & 5V	40mV RMS, 100mV pk-pk max.,
12V	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(note 1) ..... ±0.2% max.

Load Regulation(note 2) ..... ±0.2% max.

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

Current Limit ..... 105% ~140% Nominal Output

Start up time ..... 150ms 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, Input/Case, Output/Case	1500VDC min.	
Isolation Resistance	10 <sup>7</sup> ohm min.	
Isolation Capacitance	1000pF typ.	
Switching Frequency..... 3V3	200KHz typ.	
	5V	300KHz typ.
	12V&24V&48V	330kHz typ.

Operating Case Temperature ..... -40°C to 100°C

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

Thermal Shutdown, Case Temp..... 110°C typ.

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

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

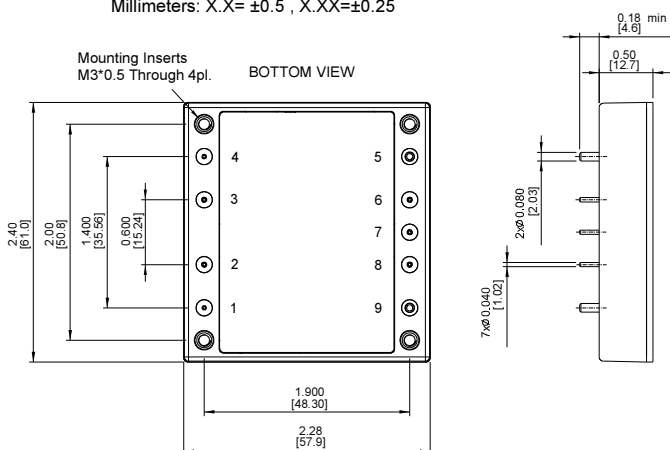
Dimensions ..... 2.28x2.40x0.50 inches (57.9x61.0x12.7 mm)

Case Material ..... Aluminum Baseplate with Plastic Case

Weight ..... 114g

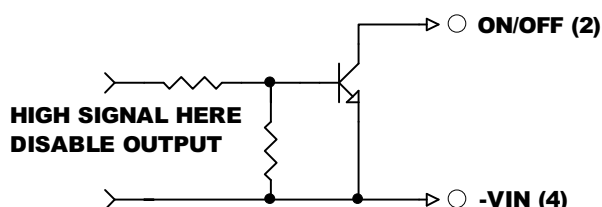
## NOTE:

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.
4. 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
5. Trim-up ..... connect a resistor between the trim pin and +sense.  
Trim-down ..... connect a resistor between the trim pin and -sense.
6. The input terminal recommend to parallel with 100uF for 48Vin and 220uF for 24Vin ESR<0.7Ω to reduce the input ripple voltage.



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

## REMOTE ON/OFF CONTROL



## EXTERNAL OUTPUT TRIM

