# 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 | 10000μF |
| CHB200-24S05 | 18-36 VDC | 5 VDC | 0 mA | 40 A | 240 mA | 9.16 A | 91 | 10000μF |
| CHB200-24S12 | 18-36 VDC | 12 VDC | 0 mA | 16.7 A | 230 mA | 9.03 A | 92.5 | 10000μF |
| CHB200-24S24 | 18-36 VDC | 24 VDC | 0 mA | 8.3 A | 40 mA | 9.12 A | 91 | 2200μF |
| CHB200-24S48 | 18-36 VDC | 48 VDC | 0 mA | 4.2 A | 70 mA | 9.23 A | 91 | 2000μF |
| CHB200-48S3V3 | 36-75 VDC | 3.3 VDC | 0 mA | 50 A | 80 mA | 3.80 A | 90.5 | 10000μF |
| CHB200-48S05 | 36-75 VDC | 5 VDC | 0 mA | 40 A | 120 mA | 4.55 A | 91.5 | 10000μF |
| CHB200-48S12 | 36-75 VDC | 12 VDC | 0 mA | 16.7 A | 90 mA | 4.49 A | 93 | 10000μF |
| CHB200-48S24 | 36-75 VDC | 24 VDC | 0 mA | 8.3 A | 50 mA | 4.56 A | 91 | 2200μF |
| CHB200-48S48 | 36-75 VDC | 48 VDC | 0 mA | 4.2 A | 60 mA | 4.59 A | 91.5 | 2000μF |

NOTE:
1. Nominal Input Voltage 24, 48 VDC
2. The output terminal of 48Vout models required a minimum capacitor 47uF to maintain specified regulation.

# SPECIFICATIONS

All Specifications Typical At Nominal Line, Full Load, and 25℃ 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 (note 6) ..... PI Type

## OUTPUT SPECIFICATIONS:

Voltage Accuracy: ..... ±1.0% max.
Transient Response: 25% Step Load Change .....<500u sec.
External Trim Adj. Range (note5) ..... ±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 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 ..... 105% ~140% Nominal Output
Start up Time ..... 150ms typ.

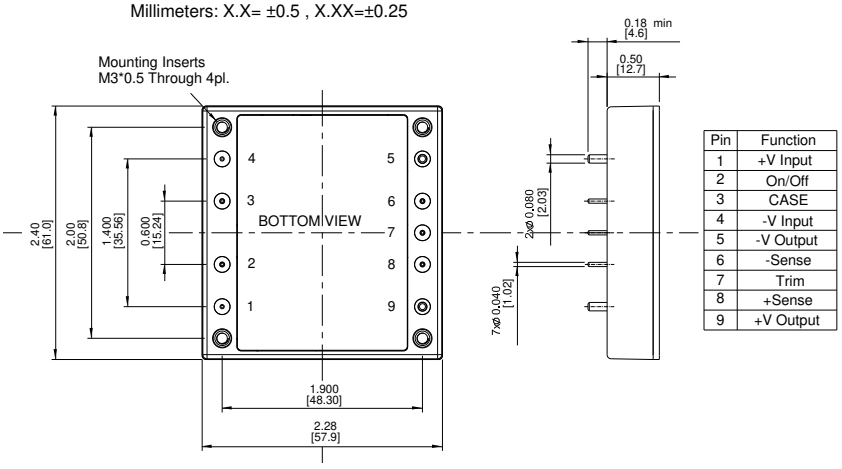
## GENRAL SPECIFICATIONS:

Efficiency ..... See Table
Isolation Voltage ... Input/Ouput, Input/Case, Output/Case ... 1500VDC min.
Isolation Resistance ..... $10^7$ ohm min.
Isolation Capacitance ..... 1000pF typ.
Switching Frequency..... 3V3 ..... 200KHz typ.
5V ..... 300KHz typ.
12V&24V&48V ..... 330kHz typ.
Operating Case Temperature ..... -40℃ to 100℃
Storage Temperature ..... -55℃ to +105℃
Thermal Shutdown, Case Temp..... 110℃ typ.
Humidity.....95% RH max. Non condensing
MTBF ..... MIL-STD-217F, GB, 25℃, Full Load ..... 750Khrs typ.
Dimensions ..... 2.28×2.40x0.50 inches (57.9x61.0×12.7 mm)
Case Material ..... Aluminum Baseplate with Plastic Case
Weight ..... 114g

## NOTE:

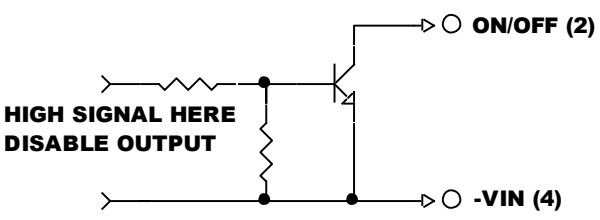
1. Measured from high line to low line.
2. Measured from full load to zero load.
3. Output ripple and noise measured with 10uF tantalum and 1uF ceramic capacitor across output.
4. Suffix "N" to the model number with negative logic remote on/off
   Module on ..... 0 to < 1.2Vdc
   Module off ..... >3.5Vdc 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.

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




| 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

