



**THE DATASHEET OF  
CHB100W-24S15**





# CHB100W SERIES

## 66 - 100 WATT 4:1 INPUT DC-DC CONVERTERS SINGLE OUTPUT



### FEATURES

- \* 66-100W Isolated Output
- \* Efficiency to 89%
- \* 250KHz Switching Frequency
- \* 4:1 Input Range
- \* Regulated Outputs
- \* Continuous Short Circuit Protection
- \* Five-Sided Metal Case
- \* Half-Brick Size Meet Industrial Standard
- \* UL60950-1 Approval (Except 28 Vout)



| MODEL NUMBER   | INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT |        | INPUT CURRENT |           | % EFF. | CAPACITOR LOAD MAX. |
|----------------|---------------|----------------|----------------|--------|---------------|-----------|--------|---------------------|
|                |               |                | MIN.           | MAX.   | NO LOAD       | FULL LOAD |        |                     |
| CHB100W-24S3V3 | 9-36 VDC      | 3.3 VDC        | 0 mA           | 20 A   | 35 mA         | 3333 mA   | 82.5   | 20000uF             |
| CHB100W-24S05  | 9-36 VDC      | 5.0 VDC        | 0 mA           | 20 A   | 35 mA         | 4931 mA   | 84.5   | 20000uF             |
| CHB100W-24S12  | 9-36 VDC      | 12 VDC         | 0 mA           | 8.3 A  | 35 mA         | 4854 mA   | 85.5   | 8300uF              |
| CHB100W-24S15  | 9-36 VDC      | 15 VDC         | 0 mA           | 6.7 A  | 35 mA         | 4813 mA   | 87     | 6700uF              |
| CHB100W-24S24  | 9-36 VDC      | 24 VDC         | 0 mA           | 4.17 A | 35 mA         | 4766 mA   | 87.5   | 1800uF              |
| CHB100W-24S28  | 9-36 VDC      | 28 VDC         | 0 mA           | 3.57 A | 50 mA         | 4845 mA   | 86     | 2200uF              |
| CHB100W-24S48  | 9-36 VDC      | 48 VDC         | 0 mA           | 2.08 A | 35 mA         | 5042 mA   | 82.5   | 470uF               |
| CHB100W-48S3V3 | 18-75 VDC     | 3.3 VDC        | 0 mA           | 20 A   | 30 mA         | 1667 mA   | 82.5   | 20000uF             |
| CHB100W-48S05  | 18-75 VDC     | 5.0 VDC        | 0 mA           | 20 A   | 30 mA         | 2422 mA   | 86     | 20000uF             |
| CHB100W-48S12  | 18-75 VDC     | 12 VDC         | 0 mA           | 8.3 A  | 30 mA         | 2371 mA   | 87.5   | 8300uF              |
| CHB100W-48S15  | 18-75 VDC     | 15 VDC         | 0 mA           | 6.7 A  | 30 mA         | 2379 mA   | 88     | 6700uF              |
| CHB100W-48S24  | 18-75 VDC     | 24 VDC         | 0 mA           | 4.17 A | 30 mA         | 2343 mA   | 89     | 2200uF              |
| CHB100W-48S28  | 18-75 VDC     | 28 VDC         | 0 mA           | 3.57 A | 50 mA         | 2422 mA   | 86     | 2200uF              |
| CHB100W-48S48  | 18-75 VDC     | 48 VDC         | 0 mA           | 2.08 A | 30 mA         | 2462 mA   | 84.5   | 470uF               |

NOTE: 1. Nominal Input Voltage 24, 48VDC

# 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      |
| 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 (note 4&5) |                  |             |
| Input Filter                            | Pi Type          |             |

## OUTPUT SPECIFICATIONS:

|   |                                  |
|---|----------------------------------|
| Voltage Accuracy                              | ±1.0% max.                       |
| 3.3V&48V (note7)                              | ±1.5% max.                       |
| Transient Response: 25% Step Load Change      | <500µs                           |
| External Trim Adj. Range                      | ±10%                             |
| Ripple & Noise, 20MHz BW (note3)              |                                  |
| 3.3V & 5V                                     | 40mV RMS max., 100mV pk-pk max.  |
| 12V & 15V                                     | 60mV RMS max., 150mV pk-pk max.  |
| 24V   | 100mV RMS max., 240mV pk-pk max. |
| 28V   | 100mV RMS max., 280mV pk-pk max. |
| 48V   | 200mV RMS max., 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                                 | 110% ~140% Nominal Output        |
| Start up Time                                 | 25ms typ.                        |

## GENERAL SPECIFICATIONS:

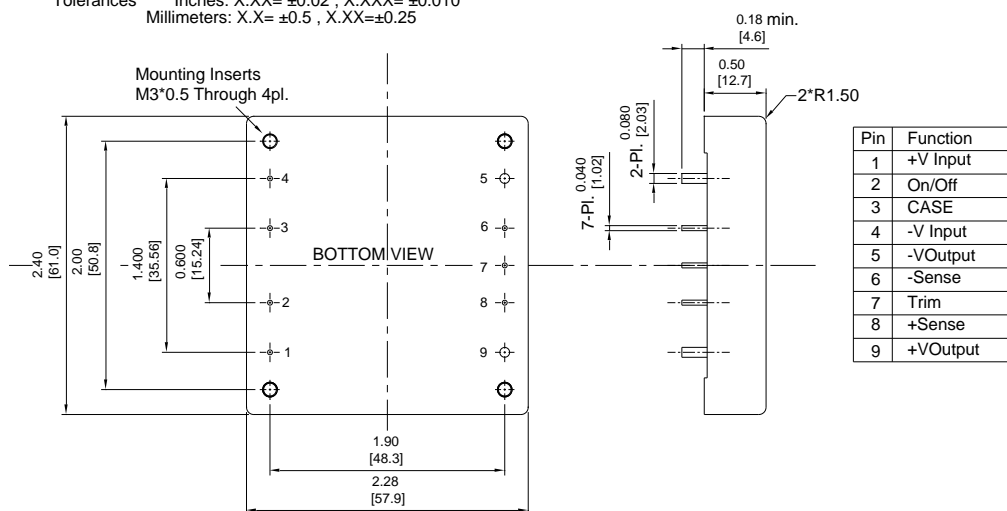
|                             |   |
|-----------------------------|---|
| Efficiency                  | See Table   |
| Isolation Voltage           | Input/Output, Input/Case, Output/Case ... 1500VDC min.. |
| Isolation Resistance        | 10 <sup>7</sup> ohm min.                                |
| Isolation Capacitance       | 1500pF typ.   |
| Switching Frequency         | 250KHz typ.   |
| Operating Case Temperature  | -40°C to 100°C  |
| Storage Temperature         | -55°C to +105°C   |
| Thermal Shutdown Case Temp. | 105°C typ.  |
| Humidity                    | 95% RH max. Non condensing                              |
| MTBF                        | MIL-HDBK-217F, GB, 25°C, Full Load ... 700Khrs typ.     |
| Dimensions                  | 2.28x2.40x0.50 inches (57.9x61.0x12.7 mm)               |
| Case Material               | Aluminum  |
| Weight                      | 95g   |

## NOTE:

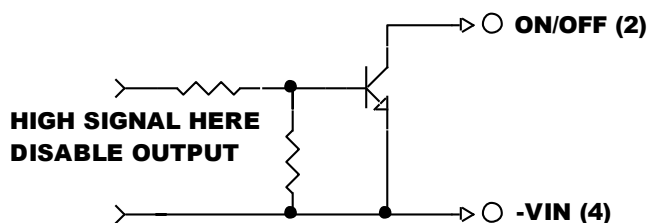
- Measured from high line to low line.
- Measured from full load to zero load.
- Output ripple and noise measured with 10uF tantalum and 1uF ceramic capacitor across output. (48V: 0.1uF ceramic cap. only)
- Logic Compatibility ..... open collector ref to -input  
 Module on ..... >3.5VDC or open circuit  
 Module off ..... 0 to<1.8VDC
- Suffix "N" to the model number with negative logic remote on/off  
 Module on ..... 0 to<1.8VDC  
 Module off ..... >3.5VDC or open circuit
- Suffix "-C" to the model number with clear mounting insert. (3.2mm DIA.)
- Require a 47uF aluminum capacitor connected between +Vout and -Vout for 48Vout models.

## CASE HB

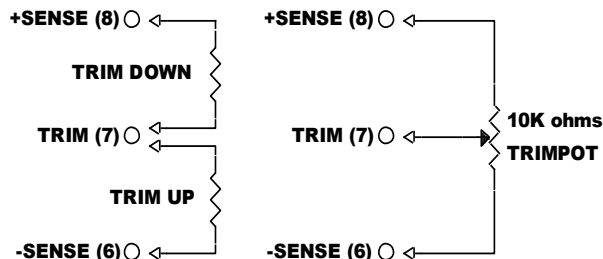
All Dimensions In Inches(mm)  
 Tolerances Inches: X.XX= ±0.02, X.XXX= ±0.010  
 Millimeters: X.X= ±0.5, X.XX=±0.25



## REMOTE ON/OFF CONTROL



## EXTERNAL OUTPUT TRIM



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