CHB50W SERIES
33 TO 50 WATT WIDE INPUT
DC-DC CONVERTERS
SINGLE OUTPUT

FEATURES

* 33-50W Isolated Output
* Efficiency to 87%
* 300KHz Switching Frequency
* 4:1 Input Range
* Regulated Outputs
* Continuous Short Circuit Protection
* Five-Sided Shield Metal Case
* Half-Brick Size Meet Industrial Standard
* UL60950-1 Approval (Except 28 Vout)
* Safety Meets IEC/EN/UL62368-1

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>INPUT VOLTAGE</th>
<th>OUTPUT VOLTAGE</th>
<th>OUTPUT CURRENT</th>
<th>INPUT CURRENT</th>
<th>% EFF.</th>
<th>CAPACITOR LOAD MAX.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHB50W-24S33</td>
<td>9-36 VDC</td>
<td>3.3 VDC</td>
<td>0 mA</td>
<td>10 A</td>
<td>50 mA</td>
<td>1740 mA</td>
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<tr>
<td>CHB50W-24S05</td>
<td>9-36 VDC</td>
<td>5 VDC</td>
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<td>10 A</td>
<td>50 mA</td>
<td>2570 mA</td>
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<tr>
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<td>12 VDC</td>
<td>0 mA</td>
<td>4.16 A</td>
<td>50 mA</td>
<td>2510 mA</td>
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<tr>
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<td>0 mA</td>
<td>3.33 A</td>
<td>50 mA</td>
<td>2448 mA</td>
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<tr>
<td>CHB50W-24S24</td>
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<td>24 VDC</td>
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<td>2.08 A</td>
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<td>2476 mA</td>
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<tr>
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<td>1.78 A</td>
<td>50 mA</td>
<td>2510 mA</td>
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<tr>
<td>CHB50W-24S48</td>
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<td>1.04 A</td>
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<td>2506 mA</td>
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<tr>
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<td>3.3 VDC</td>
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<td>10 A</td>
<td>50 mA</td>
<td>848 mA</td>
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<td>1255 mA</td>
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<td>0 mA</td>
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<td>1238 mA</td>
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</tbody>
</table>

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

Under Voltage Lockout:

- 24Vin: power up: 8.8V, power down: 8V
- 48Vin: power up: 17V, power down: 16V

Positive Logic Remote On/Off (note3&4)

- Thermal Shutdown Case Temp.: 100 °C

Input Filter: Pi Type

OUTPUT SPECIFICATIONS:

- Voltage Accuracy (note7): ±1.0% max.
- Transient Response: 25% Step Load Change: <500μs
- Ripple & Noise, 20MHz BW (note5): 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&7): ±0.2% max.

Load Regulation (note2&7): ±0.2% max.

Load Protection Trip Range, % Vo nom.: 115-140%

Current Limit: 110% - 160% Nominal Output

Start up Time: 5ms typ.

Remote On/Off Control:

- HIGH SIGNAL HERE
- DISABLE OUTPUT

- ON/OFF (2)
- -VIN (4)

External Output Trim:

- TRIM UP (7)
- TRIM DOWN (7)
- SENSE (6)

- TRIMPOT 10K ohms

Genral Specifications:

- Efficiency: See Table
- Isolation Voltage, Input/Output, Input/Case, Output/Case: 1500VDC min.
- Isolation Resistance: 10² ohm min.
- Isolation Capacitance: 1000pF typ.
- Switching Frequency: 300KHz typ.

- Operating Case Temperature: -40 °C to 100 °C
- Storage Temperature: -55 °C to +105 °C


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: >3.5VDC to 75VDC or open circuit Module off: 0 to <0.8VDC
4. Suffix “N” to the model number with negative logic remote on/off.
5. Suffix “-C” to the model number with clear mounting insert (3.2mm DIA.)
6. Output Ripple and noise measured with 10uF tantalum and 1uF ceramic capacitor across output. (48V: 1uF ceramic cap. only)
7. Require a 47uF aluminum capacitor connected between +Vout and –Vout for 48Vout models.

NOTE:

- Requires a 47uF aluminum capacitor connected between +Vout and –Vout for 48Vout models.
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