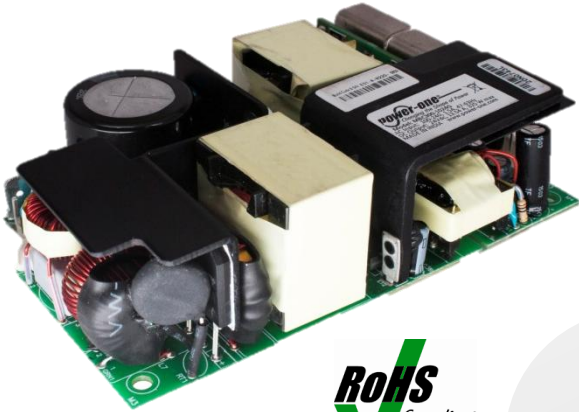


## MBC300 SERIES MEDICAL 300W AC/DC



### FEATURES

- 200 W convection cooled
- -20 to 50 deg C full load operation
- 3" x 5" x 1.5" (76.2 x 127 x 38.1 mm)
- No minimum load required
- 2 x MOPP
- 12 V fan & 5 V standby outputs
- Inhibit and Power Good signals
- Conducted EMI EN 55022-B, FCC Part 15 Level B
- Medical Safety Agency Approvals

### APPLICATIONS

- Diagnostic
- Drug Pump
- Dialysis
- Home Health Care
- Monitoring
- Imaging

## TECHNICAL DATA:

### Input

| PARAMETER                     | DESCRIPTION/CONDITION                      |                               |
|-------------------------------|--|-------------------------------|
| Input Voltage Range           | Universal Input                            | 90 - 264 Vac<br>120 – 390 Vdc |
| Input Frequency Range         | 47-63 Hz                                   |                               |
| Input Surge Current           | 230 Vac (cold start)                       | 65 A max.                     |
| Safety Ground Leakage Current | 264 Vac 50 / 60 Hz                         | < 250 µA max                  |
| Input Current                 | 120 Vac @ Full load<br>230 Vac @ Full load | 3.2 A<br>1.65 A               |

### Output

| PARAMETER                   | DESCRIPTION/CONDITION  |                               |
|-----------------------------|--|-------------------------------|
| Voltage Adjustment          | V1   | ± 3%                          |
| Transient Response          | Main output 50 to 100% load change, 50 Hz,<br>50% duty cycle, 0.1 A / µSec | < 10%, recovery time < 5 mSec |
| Over Voltage Protection     | V1   | 110 to 150% rated max         |
| Over Current Protection     | Rated output current   | 110 to 150% Typical           |
| Short Circuit Protection    | Automatic recovery   |                               |
| Set Point Tolerance         | ± 1%   |                               |
| Over Temperature Protection | 110°C on primary heatsink  | Auto Recovery                 |
| Rise Time                   | <100 mSec  |                               |

### Ordering Information

| PRODUCT FAMILY            | VOLTS (VDC) | MAX LOAD CONVECTION <sup>(2)</sup> | MAX LOAD 300 LFM <sup>(2)</sup> | MINIMUM LOAD (A) | RIPPLE & NOISE <sup>(4)</sup> | CONNECTOR      | TOTAL REGULATION |
|---------------------------|-------------|------------------------------------|---------------------------------|------------------|-------------------------------|----------------|------------------|
| MBC300-1T05G              | 5           | 28.0 A                             | 40.0 A                          | 0                | 2%                            | Screw Terminal | ± 2.5%           |
| MBC300-1T05G-2            | 5           | 28.0 A                             | 40.0 A                          | 0                | 2%                            | Screw Terminal | ± 2.5%           |
| MBC300-1T12G              | 12          | 15.0 A                             | 25.0 A                          | 0                | 2%                            | Screw Terminal | ± 2.5%           |
| MBC300-1T12G-2            | 12          | 15.0 A                             | 25.0 A                          | 0                | 2%                            | Screw Terminal | ± 2.5%           |
| MBC300-1T15G              | 15          | 12.0 A                             | 20.0 A                          | 0                | 2%                            | Screw Terminal | ± 2.5%           |
| MBC300-1T15G-2            | 15          | 12.0 A                             | 20.0 A                          | 0                | 2%                            | Screw Terminal | ± 2.5%           |
| MBC300-1T24G              | 24          | 7.5 A                              | 13.54 A                         | 0                | 2%                            | Screw Terminal | ± 2.5%           |
| MBC300-1T24G-2            | 24          | 7.5 A                              | 13.54 A                         | 0                | 2%                            | Screw Terminal | ± 2.5%           |
| MBC300-1T30G              | 30          | 6.0                                | 10.83 A                         | 0                | 2%                            | Screw Terminal | ± 2.5%           |
| MBC300-1T30G-2            | 30          | 6.0                                | 10.83 A                         | 0                | 2%                            | Screw Terminal | ± 2.5%           |
| MBC300-1T48G              | 48          | 3.75 A                             | 6.77 A                          | 0                | 2%                            | Screw Terminal | ± 2.5%           |
| MBC300-1T48G-2            | 48          | 3.75 A                             | 6.77 A                          | 0                | 2%                            | Screw Terminal | ± 2.5%           |
| <b>Vfan (all models)</b>  | <b>12</b>   | <b>0.5 A</b>                       | <b>0.5 A</b>                    |                  |                               |                | <b>± 20%</b>     |
| <b>V s/b (all models)</b> | <b>5</b>    | <b>2.0 A</b>                       | <b>2.0 A</b>                    |                  |                               |                | <b>± 5%</b>      |

**Notes:**

1. Peak current rating of 120% of max, < 30 Sec with max of 10% duty cycle.
2. Combined power from main output, Vfan and Vs/b should not exceed total power rating.
3. Fan output tolerance is  $\pm 20\%$ . When V1 full load, Vfan needs 20 mA load to be within regulation specification. Peak current for fan output is 1 A.
4. Ripple is 2% up to 20% load and less than 1% above 20% load. Output noise measurement is made with a 20 MHz bandwidth using a 6" twisted pair, terminated with a 10 uF.
5. Class 1 models have Earthing Tab J4. Class 2 products (-2 suffix) have no Earthing Tab.
6. Specifications are for nominal input voltage, 25°C and max load unless otherwise stated.
7. Air flow over length of supply recommended (either direction) for forced air rating.
8. Derate power linearly to 80% from 90 Vac to 80 Vac input.
9. Specifications subject to change without notice.
10. Warranty 2 years.

**General Specifications**

| PARAMETER           | DESCRIPTION/CONDITION         |  |
|---------------------|-------------------------------|--|
| Hold Up Time        | 120 Vac                       | 10 mSec  |
|                     | 230 Vac                       | 10 mSec  |
| MTBF                | >250 khrs                     | Bellcore TR-332  |
| Switching Frequency | PFC converter 80 kHz typical  | Resonant converter: Variable 35 to 250 kHz, 90 kHz typical |
| Isolation Voltage   | Input to Output: Min 5900 Vdc |  |
| Weight              | 450 g (0.99 lbs)              |  |

**Environmental**

| PARAMETER                      | DESCRIPTION/CONDITION        |  |
|--------------------------------|------------------------------|--|
| Operating Temperature          | Operating                    | -20 to +70°C. See derating charts below. |
|                                | Storage                      | -40 to +85°C                             |
| Altitude                       | Operating 10,000 ft.         | Non-operation 40,000 ft.                 |
| Conducted Emissions            | EN55022, FCC part 15 Level B |  |
| Relative Humidity              | 95%                          | Non-condensing                           |
| Radiated Emissions             | EN55022, FCC part 15 Level B |  |
| Electromagnetic Susceptibility | EN61000-4 3                  | 2, 3, 4, 5 level 3                       |
| Harmonic Current               | EN61000-3-2, Class D         |  |

**Signals**

| PARAMETER    | DESCRIPTION/CONDITION  |
|--------------|--|
| Power Good   | TTL signal goes high after main output is within regulation, delay is 0.1 to 0.3 sec |
| Inhibit      | To turn on power supply short J3 pin 1 to J3 pin 2 or J3 pin 7                       |
| Remote Sense | Compensates for 200 mV drop  |

**Safety**

| PARAMETER     | DESCRIPTION/CONDITION |
|---------------|-----------------------|
| EN / UL / CSA | 60601-1 3rd Edition   |

Figure 1 Output Power Vs. Temperature

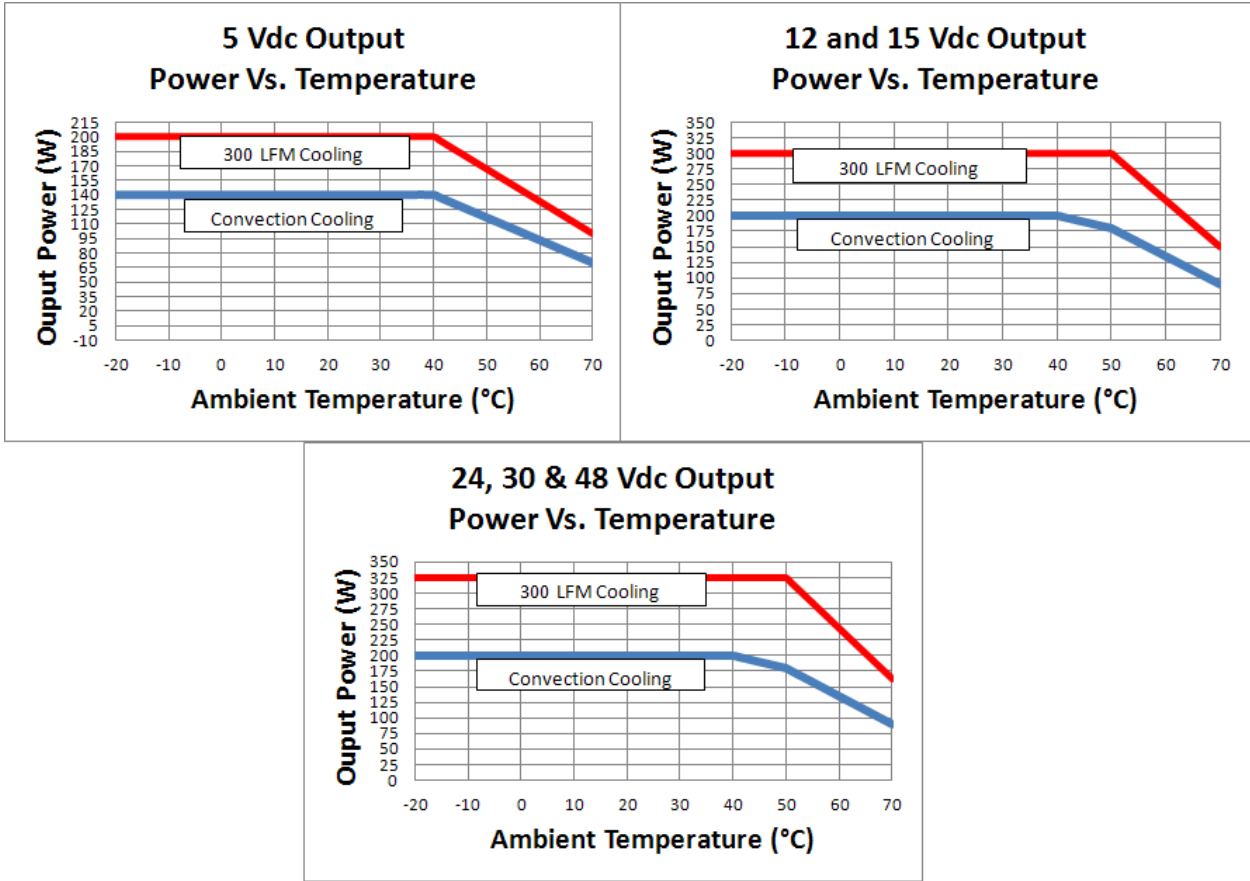
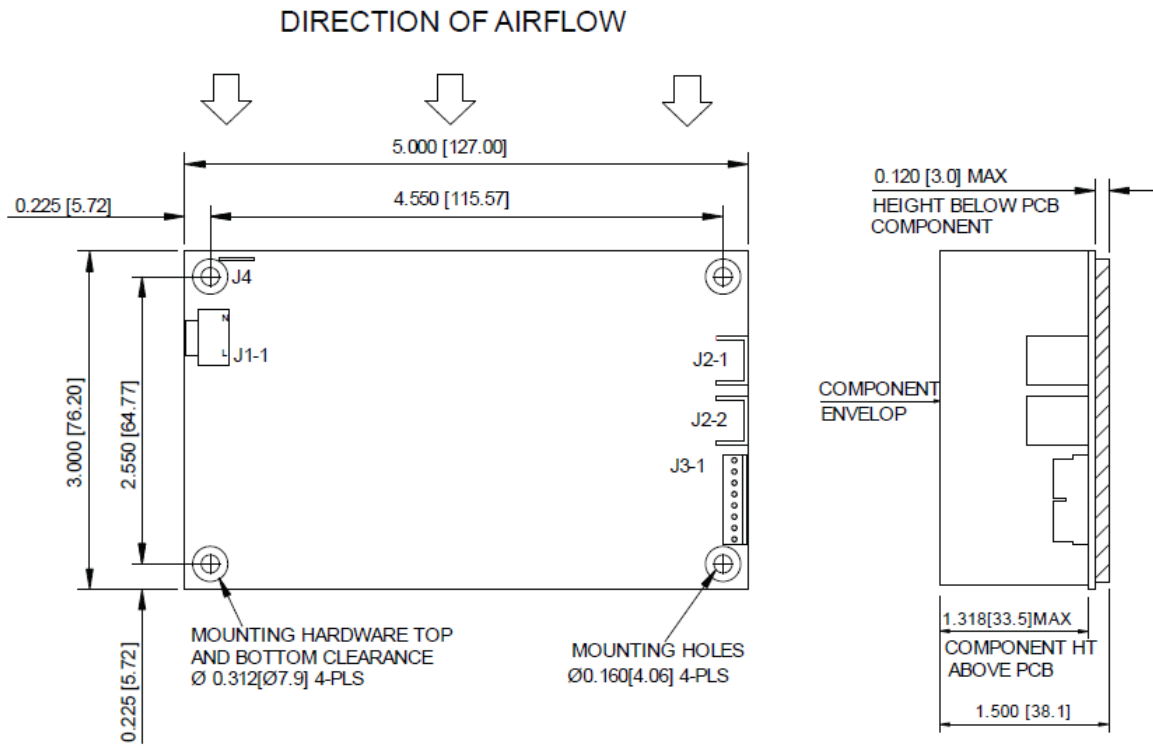


Figure 2 Dimension Drawing (Top and Side View)



**Mechanical**

| INPUT = J1   | EARTHING TAB = J4                     | DC OUTPUT = J2   | SIGNALS & AUX POWER= J3  |   |
|--|---------------------------------------|--|--|---|
| Pin 1: AC Line<br>Pin 2: Removed<br>Pin 3: AC Neutral      | Molex: 19705-4301                     | 2 x 6-32 inches Screw Pan Head.<br>Pin 1 = RTN<br>Pin 2 = V1                           | Pin 1 = Inhibit<br>Pin 2 = Signal Return<br>Pin 3 = Vfan (+12 V)<br>Pin 4 = - Remote Sense | Pin 5 = Vs/b (5 Vdc)<br>Pin 6 = + Remote Sense<br>Pin 7 = Signal Return<br>Pin 8 = Power Good |
| Mating Connector:<br>Molex: 09-50-3031<br>Pins: 08-50-0106 | Mating Connector:<br>Molex: 190030001 | Mating Connector:<br>16 AWG wire crimped to Ring<br>Tongue Terminal.<br>AMP: 8-31886-1 | Mating Connector:<br>Molex: 22-01-2087, Pins: 08-50-0113                                   |   |

Copyright © 2010 Power-One Inc. All rights reserved. Words and logos that are identified as trademarks and/or service marks are, unless noted otherwise, the trademarks and service marks of Power-One Inc. in the U.S. and other countries. All other product or service names are the property of their respective holders. Power-One products are protected under numerous U.S. and foreign patents and pending applications, maskwork rights, and copyrights. Power-One reserves the right to make changes to any products and services at any time without notice. Power-One assumes no responsibility or liability arising out of the application or use of any information, product, or service described herein except as expressly agreed to in writing by Power-One Inc.

**NUCLEAR AND MEDICAL APPLICATIONS** - Power-One products are not designed, intended for use in, or authorized for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems without the express written consent of the respective divisional president of Power-One, Inc.

**TECHNICAL REVISIONS** - The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.