Size: 5.00 x 3.00 x 1.46 inches
(127.0 x 76.2 x 37.1 mm)

## FEATURES

- Class I
- RoHS2 Compliant
- High ESD Immunity
- Flammability Rating of UL94V-1
- Cooling by Free Air Convection
- 250 Watts Output Power
- Input to Output: 2MOPP
- Up to 94% High Efficiency
- Wide Input Voltage Range: 90~264VAC
- Short Circuit, Over Voltage, & Over Load Protection
- Meets FCC Part-18, CISPR-11, and EN55011 Class B Emission Limits
- IEC60601-1 Edition 3.1, ES60601-1:2005(R2012), CSAC22.2 NO. 60601-1:14, and EN60601-1:2006/A1:2013 Safety Approvals
- 100% Burn-in Tested

## APPLICATIONS

- Patient Monitor
- Ultrasound System
- Portable Medical Devices
- Blood Chemistry Analyzer
- Medical Imaging

## DESCRIPTION

The PSMBU250 series of class I medical AC/DC switching power supplies provides 250 Watts of continuous output power in a 5.00" x 3.00" x 1.46" open frame package. This series consists of single output models with a wide input voltage range of 90~264VAC. Some features include high efficiency up to 94%, 2MOPP insulation, and short circuit, over current and over load protection. All models meet FCC Part-18, CISPR-11, and EN55011 Class B emission limits. This series also has IEC60601-1 Edition 3.1, ES60601-1:2005(R2012), CSAC22.2 NO. 60601-1:14, and EN60601-1:2006/A1:2013 safety approvals. All models are RoHS2 compliant and have been 100% burn-in tested.

### MODEL SELECTION TABLE

| Model Number | Input Voltage Range | Output Voltage | Output Current | Ripple & Noise | Efficiency | Total Regulation | Output Power |
|---|---|---|---|---|---|---|---|
| PSMBU250-105 | 90 ~ 260 VAC | 12VDC | 20.83A | 120mVp-p | 91% | ±5% | 250W |
| PSMBU250-106 | | 15VDC | 16.66A | 150mVp-p | 92% | ±5% | |
| PSMBU250-107 | | 19VDC | 13.15A | 190mVp-p | 93% | ±5% | |
| PSMBU250-108 | | 24VDC | 10.41A | 240mVp-p | 94% | ±3% | |
| PSMBU250-109 | | 30VDC | 8.33A | 300mVp-p | 94% | ±2% | |
| PSMBU250-110 | | 36VDC | 6.94A | 300mVp-p | 94% | ±2% | |
| PSMBU250-111 | | 48VDC | 5.20A | 300mVp-p | 94% | ±2% | |

## SPECIFICATIONS

All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted.
We reserve the right to change specifications based on technological advances.

| SPECIFICATION | TEST CONDITIONS | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| **INPUT SPECIFICATIONS** | | | | | |
| Input Voltage | Safety Approval & Specification in Label | 100 | | 240 | VAC |
| | Operating Input Voltage Range | 90 | | 264 | |
| Input Frequency | Sine Wave | 47 | | 63 | Hz |
| Input Current | Low Line, 100VAC, full load | | 3 | | A |
| | High Line, 240VAC, full load | | 1.5 | | |
| Inrush Current | Low Line, 100VAC, full load, 25°C, cold start | | | 75 | A |
| | High Line, 240VAC, full load, 25°C, cold start | | | 150 | |
| Power Factor Correction | 240VAC, full load | 0.90 | | 1 | |
| No Load Consumption | | | 0.21 | | W |
| **OUTPUT SPECIFICATIONS** | | | | | |
| Output Voltage | | See Table | | | |
| Line Regulation[3] | Full load, Vin=100~120VAC or 200~240VAC | | | 1 | % |
| Total Regulation[4] | 12-19VDC Model | | ±5 | | % |
| | 24VDC Model | | ±3 | | |
| | 30-48VDC Model | | ±2 | | |
| Output Power | | | | 250 | W |
| Output Current | | See Table | | | |
| Ripple & Noise[5] | | See Table | | | |
| Hold-up Time[6] | 110VAC, full load | 16 | | | ms |
| Start-up Time | 100~240VAC, full load | | | 2 | s |
| Transient Response Time | 110VAC, Full load to half load | | | 4 | ms |
| Temperature Coefficient | All Conditions | | | ±0.04 | %/°C |
| **PROTECTION** | | | | | |
| Over Voltage Protection | Recovers automatically after fault condition is removed | 112 | | 132 | % |
| Over Load Protection | Recovers automatically after fault condition is removed | 105 | | 130 | % |
| Short Circuit Protection | | Automatic Recovery | | | |
| **GENERAL SPECIFICATIONS** | | | | | |
| Efficiency | 230VAC, full load | See Table | | | |
| Dielectric Withstanding Voltage | Primary to Secondary (Limit Current <10mA) | 4000 | | | VAC |
| | Primary to PE (Limit Current <10mA) | 1500 | | | |
| Insulation Resistance | | 50 | | | MΩ |
| Safety Ground Leakage Current | 264VAC/63Hz | | | 0.30 | mA |
| Surge Voltage | Line-Neutral | | | 1 | kV |
| | Line-PE & Neutral-PE | | | 2 | |

## SPECIFICATIONS

All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted.
We reserve the right to change specifications based on technological advances.

| SPECIFICATION | TEST CONDITIONS | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| ENVIRONMENTAL SPECIFICATIONS | | | | | |
| Operating Temperature | Derating linearly from 100% Load at 50°C to 50% load at 70°C | -40 | | +70 | °C |
| Storage Temperature | 10~95% RH | -40 | | +85 | °C |
| Operating Humidity | Non-Condensing | 0 | | 95 | % |
| Storage Humidity | | 0 | | 95 | % |
| Operating Altitude (Elevation) | All conditions | | | 5000 | m |
| Cooling | | Free air convection | | | |
| Vibration | 10~500Hz, 10min./1cycle, 60min. each along X, Y, Z axes | | | 5 | G |
| MTBF | MIL-HDBK-217F, Operating Temperature at 25°C | 200,000 | | | hours |
| PHYSICAL SPECIFICATIONS | | | | | |
| Weight | | 11.64oz (330g) | | | |
| Dimensions (L x W x H) | | 5.00in x 3.00in x 1.46in (127mm x 76.2mm x 37.1mm) | | | |
| SAFETY & EMC | | | | | |
| Safety Approvals | IEC60601-1 Edition 3.1, ES60601-1:2005(R2012), CSAC22.2 NO. 60601-1:14, EN60601-1:2006/A1:2013 | | | | |
| Protection Class | | Class I | | | |
| EMC Emission | Compliance to EN55011 (CISPR11), EN60601-1-2 | B | | | Class |
| Electro Static Discharge | Air Discharge, IEC61000-4-2 | | | 15 | kV |
| | Contact Discharge, IEC61000-4-2 | | | 8 | |

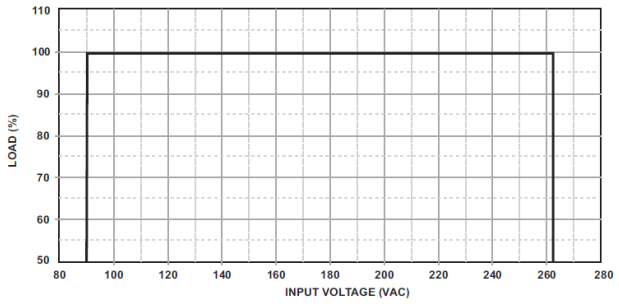
## NOTES

1. Output can provide up to peak load when power supply starts up. Staying in more than rated load continually is not allowed.
2. At factory in 60% rated load condition, each output is checked to be within voltage accuracy.
3. Line regulation is defined by changing ±10% of input voltage from nominal line at rated load.
4. Load regulation is defined by changing ±40% of measured output load from 60% rated load.
5. Ripple is measured from peak to peak with a bandwidth-limit of 20MHz (measured at the output connector with a 0.1uF ceramic capacitor and a 47uF electrolytic capacitor).
6. Hold up time is measured from the end of the last charging pulse to the time which the main output drops down to low limit of main output at rated load and nominal line.
7. Efficiency is measured at rated load and nominal line

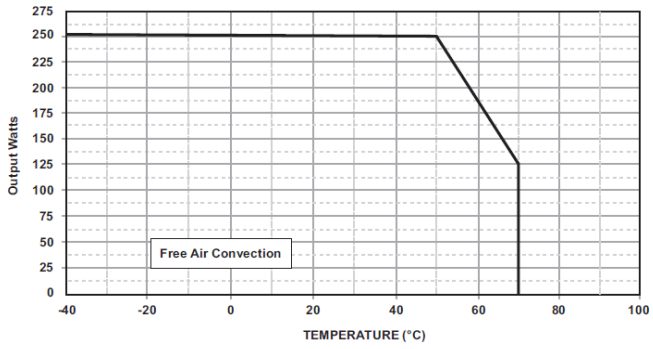
*Due to advances in technology, specifications subject to change without notice.*

## DERATING

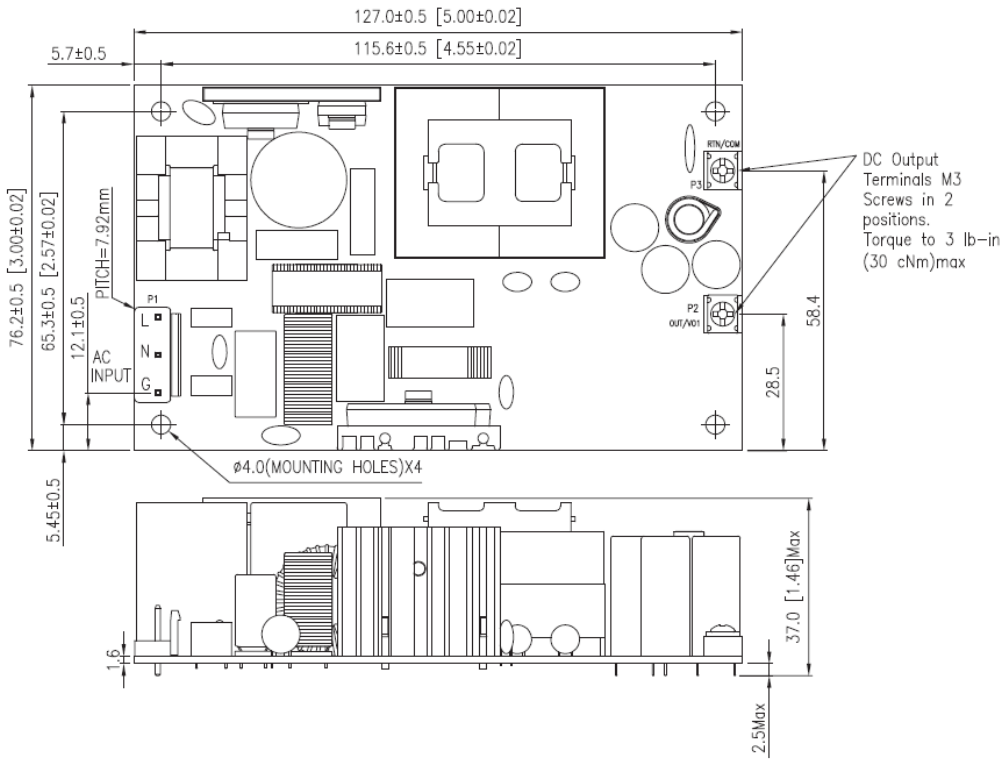
Input Voltage Derating Curve




Temperature Derating Curve



## MECHANICAL DRAWING




NOTES:
Input Connector mates with JST housing VHR-5N and JST SVH series crimp terminal.
Output connector mates with M3 screws in 2 positions torque to 3 lb-in (30 cNm) max.

## COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001: 2015 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

Contact **Wall Industries** for further information:

Phone: ☎(603)778-2300
Toll Free: ☎(888)597-9255
Fax: ☎(603)778-9797
E-mail: sales@wallindustries.com
Web: www.wallindustries.com
Address: 37 Industrial Drive
Exeter, NH 03833