

Features

- 3"×2" compact size
- Medical safety approved (2 x MOPP) according to ANSI/AAMI ES60601-1 and IEC/BS EN/EN60601-1
- Suitable for BF application with appropriate system consideration
- Cooling by free air convection
- EMI class B for class II configuration
- No load power consumption < 0.1W
- Extremely low leakage current
- Protections: Short circuit / Overload / Over voltage
- Lifetime > 50K hours
- Operating altitude up to 4000 meters
- 3 years warranty

Applications

- Oral irrigator
- Hemodialysis machine
- Medical computer monitors
- Sleep apnea devices

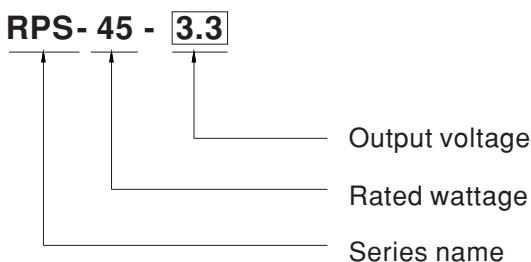
GTIN CODE

MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

Description

RPS-45 is a 45W highly reliable green PCB type medical power supply with a high power density on the 3" by 2" footprint. It accepts 80~264VAC input and offers various output voltages between 3.3V and 48V. The working efficiency is up to 91% and the extremely low no load power consumption is down below 0.1W. RPS-45 is able to be used for Class II (no FG) system design. The extremely low leakage current is less than 100µA. In addition, it conforms to international medical regulations (2*MOPP) and EMC BS EN/EN55011, perfectly fitting all kinds of BF rated "patient contact" medical system equipment.

Model Encoding

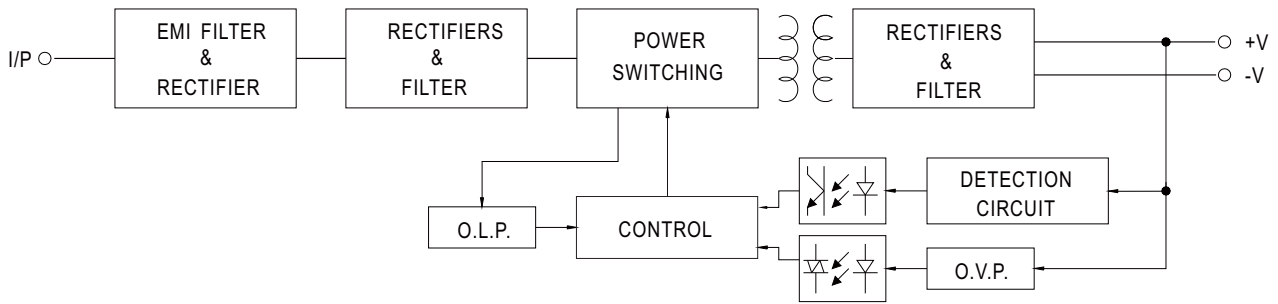


SPECIFICATION

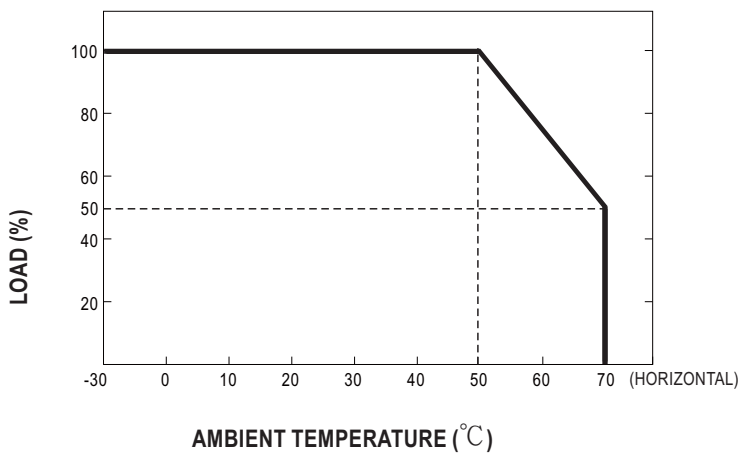
| ORDER NO. | | RPS-45-3.3 | RPS-45-5 | RPS-45-7.5 | RPS-45-12 | RPS-45-15 | RPS-45-24 | RPS-45-48 | |
|---------------------------|--|--|----------|-------------------------|---|------------|-------------------|------------|---|
| OUTPUT | DC VOLTAGE | 3.3V | 5V | 7.5V | 12V | 15V | 24V | 48V | |
| | RATED CURRENT | 8A | 8A | 5.4A | 3.8A | 3A | 1.9A | 0.94A | |
| | CURRENT RANGE | 0 ~ 8.8A | 0 ~ 8.8A | 0 ~ 5.95A | 0 ~ 4.18A | 0 ~ 3.3A | 0 ~ 2.1A | 0 ~ 1.03A | |
| | RATED POWER | 26.4W | 40W | 40.5W | 45.6W | 45W | 45.6W | 45.1W | |
| | PEAK LOAD(10sec.) Note.2 | 29W | 44W | 44.6W | 50.2W | 49.5W | 50.2W | 49.4W | |
| | RIPPLE & NOISE (max.) Note.3 | 60mVp-p | 60mVp-p | 80mVp-p | 100mVp-p | 100mVp-p | 120mVp-p | 120mVp-p | |
| | VOLTAGE ADJ. RANGE | 3.1~3.6V | 4.7~5.5V | 7.12~8.3V | 11.4~13.2V | 13.5~16.5V | 22.8~27.6V | 45.6~52.8V | |
| | VOLTAGE TOLERANCE Note.4 | ±2.0% | ±2.0% | ±2.0% | ±2.0% | ±1.0% | ±1.0% | ±1.0% | |
| | LINE REGULATION | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | |
| | LOAD REGULATION | ±2.0% | ±2.0% | ±2.0% | ±2.0% | ±1.0% | ±1.0% | ±1.0% | |
| | SETUP, RISE TIME | 500ms, 30ms / 230VAC 500ms, 30ms / 115VAC at full load | | | | | | | |
| HOLD UP TIME (Typ.) | 30ms / 230VAC 16ms / 115VAC at full load | | | | | | | | |
| INPUT | VOLTAGE RANGE Note.5 | 80 ~ 264VAC | | | | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | | | | |
| | EFFICIENCY (Typ.) | 80.5% | 83% | 85% | 88% | 89% | 90% | 91% | |
| | AC CURRENT (Typ.) | 1.2A / 115VAC 1A / 230VAC | | | | | | | |
| | INRUSH CURRENT (Typ.) | COLD STAR 30A/115VAC 60A/230VAC | | | | | | | |
| | LEAKAGE CURRENT(max.) Note.6 | Touch current < 100µA/264VAC | | | | | | | |
| PROTECTION | OVERLOAD | 115 ~ 150% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed | | | | | | | |
| | OVER VOLTAGE | 3.8~5V | 5.7~6.8V | 8.6~11.3V | 13.8~16.2V | 17.2~20.3V | 28.4~32.4V | 55.2~64.8V | Protection type : Shut down o/p voltage, re-power on to recover |
| ENVIRONMENT | WORKING TEMP. | -30 ~ +70°C (Refer to "Derating Curve") | | | | | | | |
| | WORKING HUMIDITY | 20% ~ 90% RH non-condensing | | | | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +85°C, 10 ~ 95% RH non-condensing | | | | | | | |
| | TEMP. COEFFICIENT | ±0.03% / °C (0 ~ 50°C) | | | | | | | |
| | VIBRATION | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes | | | | | | | |
| | OPERATING ALTITUDE Note.7 | 4000 meters | | | | | | | |
| SAFETY & EMC (Note. 8) | SAFETY STANDARDS | IEC60601-1, TUV BS EN/EN60601-1, EAC TP TC 004, UL ANSI / AAMI ES60601-1 (3.1 version), CAN/CSA-C22.2 No. 60601-1:14 - Edition 3 approved; Design refer to BS EN/EN60335-1 | | | | | | | |
| | ISOLATION LEVEL | Primary-Secondary: 2xMOPP | | | | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P: 4KVAC | | | | | | | |
| | ISOLATION RESISTANCE | I/P-O/P: 100M Ohms / 500VDC / 25°C / 70% RH | | | | | | | |
| | EMC EMISSION | Parameter | | Standard | | | Test Level / Note | | |
| | | Conducted emission | | BS EN/EN55011 (CISPR11) | | | Class B | | |
| | | Radiated emission | | BS EN/EN55011 (CISPR11) | | | Class B | | |
| | | Harmonic current | | BS EN/EN61000-3-2 | | | Class A | | |
| | | Voltage flicker | | BS EN/EN61000-3-3 | | | ----- | | |
| | EMC IMMUNITY | BS EN/EN55035, BS EN/EN60601-1-2 | | | | | | | |
| Parameter | | Standard | | | Test Level / Note | | | | |
| ESD | | BS EN/EN61000-4-2 | | | Level 4, 15KV air ; Level 4, 8KV contact | | | | |
| RF field susceptibility | | BS EN/EN61000-4-3 | | | Level 3, 10V/m(80MHz~2.7GHz) Table 9, 9~28V/m(385MHz~5.78GHz) | | | | |
| EFT bursts | | BS EN/EN61000-4-4 | | | Level 3, 2KV | | | | |
| Surge susceptibility | | BS EN/EN61000-4-5 | | | Level 4, 2KV/Line-Line | | | | |
| Conducted susceptibility | | BS EN/EN61000-4-6 | | | Level 3, 10V | | | | |
| Magnetic field immunity | | BS EN/EN61000-4-8 | | | Level 4, 30A/m | | | | |
| Voltage dip, interruption | | BS EN/EN61000-4-11 | | | 100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods | | | | |
| OTHERS | MTBF | 3334.3K hrs min. Telcordia SR-332 (Bellcore) ; 726.2K hrs min. MIL-HDBK-217F (25°C) | | | | | | | |
| | DIMENSION (L*W*H) | 76.2*50.8*24mm or 3" * 2" * 0.945" inch | | | | | | | |
| | PACKING | 0.11Kg; 120pcs/14.2Kg/0.94CUFT | | | | | | | |
| NOTE | <p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. 33% Duty cycle maximum within every 30 seconds. Average output power should not exceed the rated power.</p> <p>3. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µf & 47µf parallel capacitor.</p> <p>4. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>5. Derating may be needed under low input voltages. Please check the derating curve for more details.</p> <p>6. Touch current was measured from primary input to DC output.</p> <p>7. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).</p> <p>8. The power supply is considered a component which will be installed into a final equipment. "All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness." The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on http://www.meanwell.com)</p> <p>※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx</p> | | | | | | | | |

■ Block Diagram

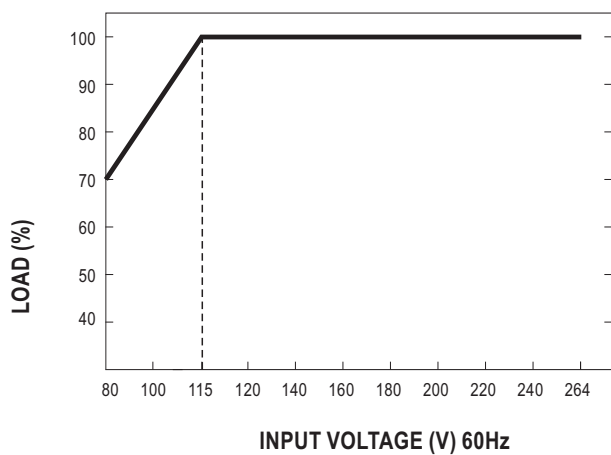
fosc : 65KHz



■ Derating Curve

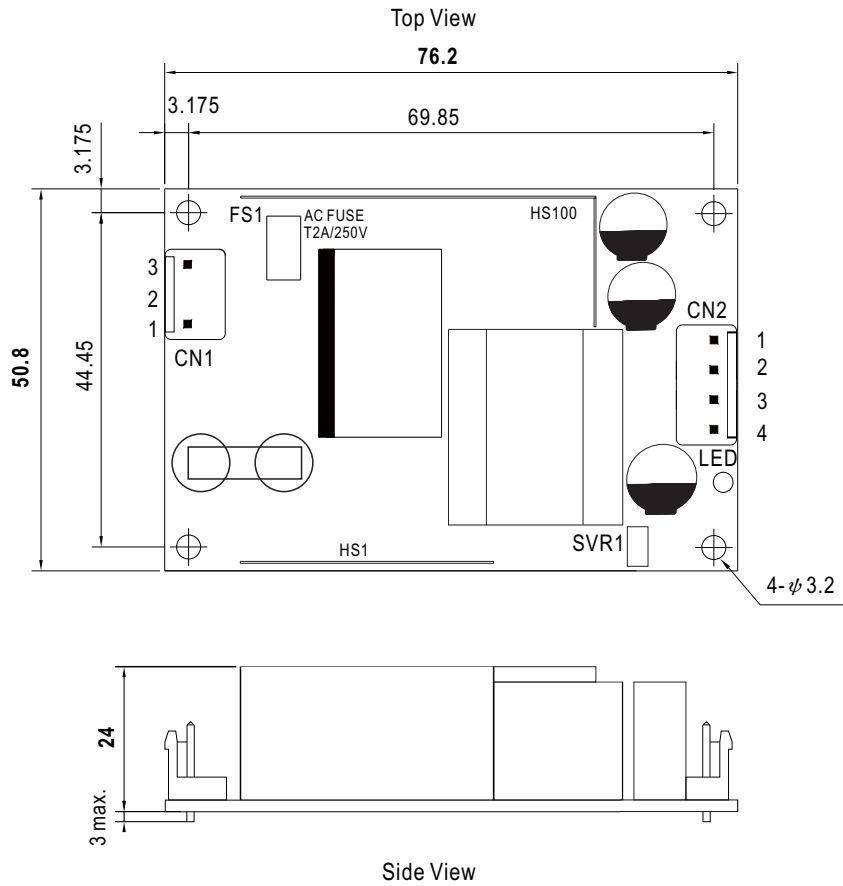


■ Static Characteristics



Mechanical Specification

Case No. Unit:mm



AC Input Connector (CN1) : JST B3P-VH or equivalent

| Pin No. | Assignment | Mating Housing | Terminal |
|---------|------------|--------------------------|-----------------------------------|
| 1 | AC/N | JST VHR or equivalent | JST SVH-21T-P1.1 or equivalent |
| 2 | No Pin | | |
| 3 | AC/L | | |

DC Output Connector (CN2) : JST B4P-VH or equivalent

| Pin No. | Assignment | Mating Housing | Terminal |
|---------|------------|--------------------------|-----------------------------------|
| 1 | +V | JST VHR or equivalent | JST SVH-21T-P1.1 or equivalent |
| 2 | +V | | |
| 3 | -V | | |
| 4 | -V | | |

Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>