

**Features**

- 3"x2" compact size
- Medical safety approved (2 x MOPP) according to ANSI/AAMI ES60601-1 and IEC/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

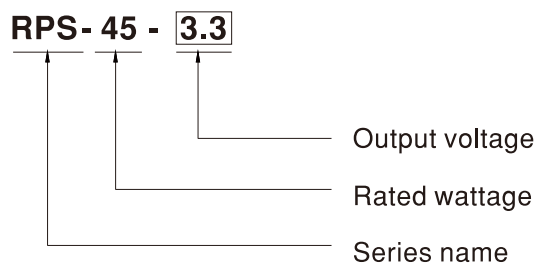
**Applications**

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

**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 EN55011, perfectly fitting all kinds of BF rated "patient contact" medical system equipment.

**Model Encoding**



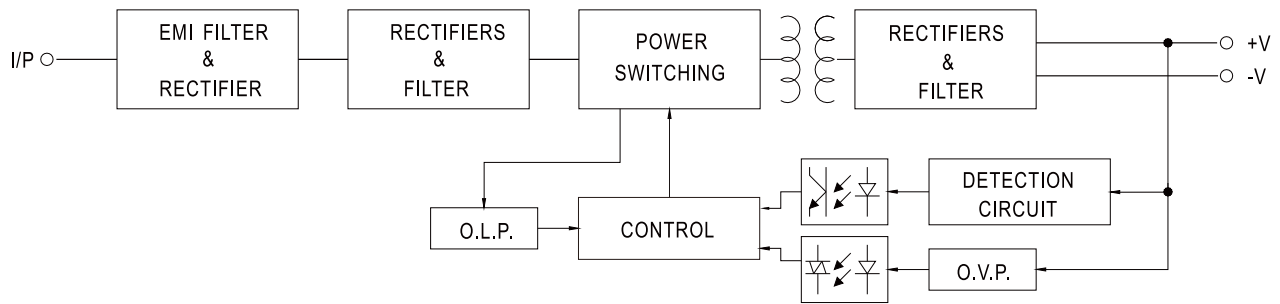
## SPECIFICATION

| 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<br>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 |
| 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 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 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   | EN55011 (CISPR11)                 |           |   |            | Class B           |            |
|                           |   | Radiated emission  | EN55011 (CISPR11)                 |           |   |            | Class B           |            |
|                           |   | Harmonic current   | EN61000-3-2                       |           |   |            | Class A           |            |
|                           |   | Voltage flicker  | EN61000-3-3                       |           |   |            | -----             |            |
|                           | EMC IMMUNITY                                | EN60601-1-2  | Parameter                         | Standard  |   |            | Test Level / Note |            |
| ESD                       |   | EN61000-4-2  |                                   |           | Level 4, 15KV air ; Level 4, 8KV contact                                  |            |                   |            |
| RF field susceptibility   |   | EN61000-4-3  |                                   |           | Level 3, 10V/m( 80MHz~2.7GHz )<br>Table 9, 9~28V/m( 385MHz~5.78GHz )      |            |                   |            |
| EFT bursts                |   | EN61000-4-4  |                                   |           | Level 3, 2KV  |            |                   |            |
| Surge susceptibility      |   | EN61000-4-5  |                                   |           | Level 4, 2KV/Line-Line  |            |                   |            |
| Conducted susceptibility  |   | EN61000-4-6  |                                   |           | Level 3, 10V  |            |                   |            |
| Magnetic field immunity   |   | EN61000-4-8  |                                   |           | Level 4, 30A/m  |            |                   |            |
| Voltage dip, interruption |   | EN61000-4-11   |                                   |           | 100% dip 1 periods, 30% dip 25 periods,<br>100% interruptions 250 periods |            |                   |            |
| OTHERS                    |   | MTBF   | 726.2Khrs min. MIL-HDBK-217(25°C) |           |   |            |                   |            |
|                           | DIMENSION (L*W*H)                           | 76.2*50.8*24mm or 3" * 2" * 0.945" inch  |                                   |           |   |            |                   |            |
|                           | PACKING                                     | 0.11Kg; 120pcs/14.2Kg/0.97CUFT   |                                   |           |   |            |                   |            |

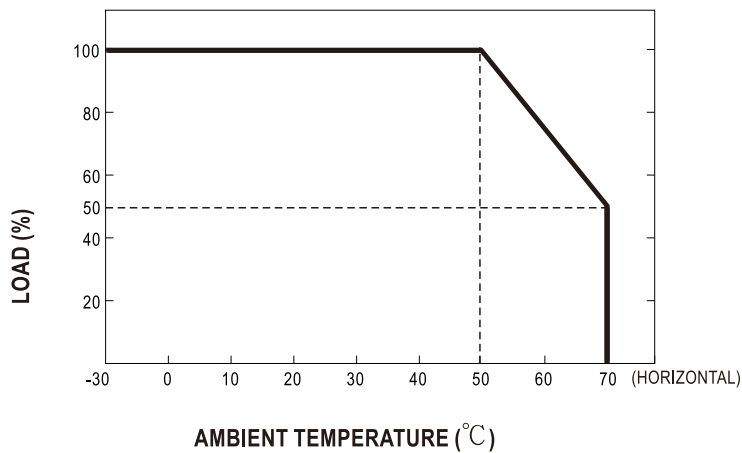
- NOTE**
- All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
  - 33% Duty cycle maximum within every 30 seconds. Average output power should not exceed the rated power.
  - Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µf & 47µf parallel capacitor.
  - Tolerance : includes set up tolerance, line regulation and load regulation.
  - Derating may be needed under low input voltages. Please check the derating curve for more details.
  - Touch current was measured from primary input to DC output.
  - 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).
  - 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>)

■ Block Diagram

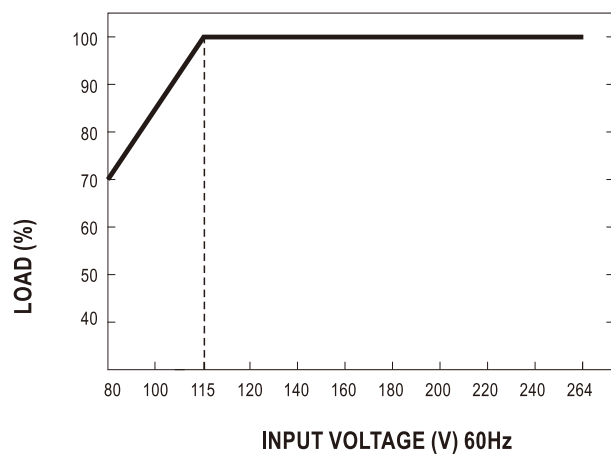
fosc : 65KHz



■ Derating Curve

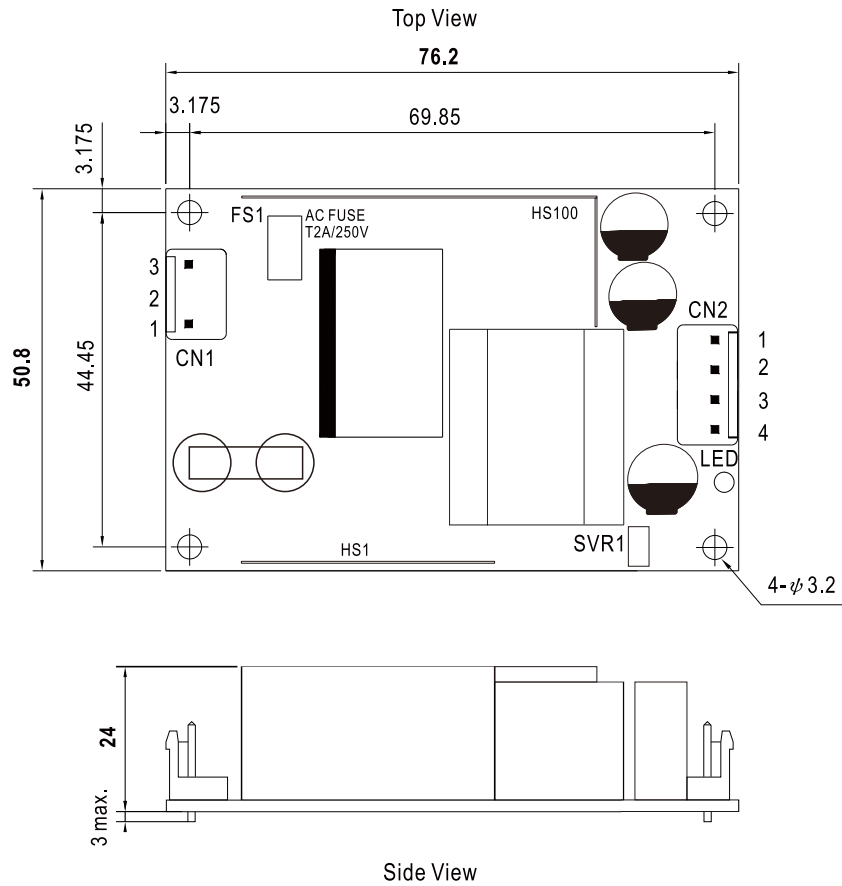


■ Static Characteristics



■ 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<br>or equivalent | JST SVH-21T-P1.1<br>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<br>or equivalent | JST SVH-21T-P1.1<br>or equivalent |
| 2       | +V         |                          |                                   |
| 3       | -V         |                          |                                   |
| 4       | -V         |                          |                                   |

■ Installation Manual

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



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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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