

■ Features

- 3"x2" 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 > 105K hours
- Operating altitude up to 4000 meters
- 3 years warranty

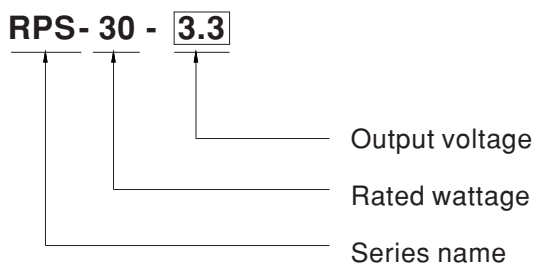
■ Applications

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

■ Description

RPS-30 is a 30W 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 92% and the extremely low no load power consumption is down below 0.1W. RPS-30 is able to be used for Class II (no FG) system design. The extremely low leakage current is less than 80 μ A. 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

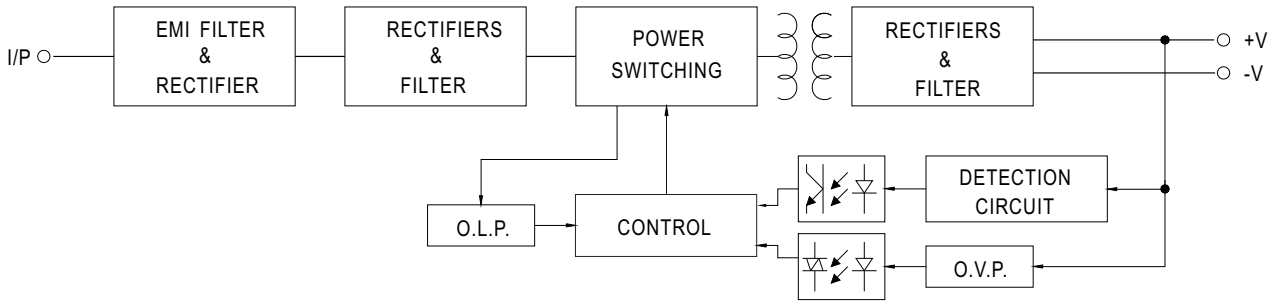
| ORDER NO. | | RPS-30-3.3 | RPS-30-5 | RPS-30-7.5 | RPS-30-12 | RPS-30-15 | RPS-30-24 | RPS-30-48 | |
|------------------------------|---|--|-------------------------|------------|---|--|-------------------|------------|--|
| OUTPUT | DC VOLTAGE | 3.3V | 5V | 7.5V | 12V | 15V | 24V | 48V | |
| | RATED CURRENT | 6A | 6A | 4A | 2.5A | 2A | 1.25A | 0.625A | |
| | CURRENT RANGE | 0 ~ 6.6A | 0 ~ 6.6A | 0 ~ 4.4A | 0 ~ 2.75A | 0 ~ 2.2A | 0 ~ 1.375A | 0 ~ 0.687A | |
| | RATED POWER | 19.8W | 30W | 30W | 30W | 30W | 30W | 30W | |
| | PEAK LOAD(10sec.) Note.2 | 21.8W | 33W | 33W | 33W | 33W | 33W | 33W | |
| | RIPPLE & NOISE (max.) Note.3 | 80mVp-p | 80mVp-p | 80mVp-p | 100mVp-p | 100mVp-p | 150mVp-p | 150mVp-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 | ±2.0% | ±2.0% | ±2.0% | ±2.0% | ±2.0% | ±1.0% | ±1.0% | |
| | LINE REGULATION | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | |
| | LOAD REGULATION | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | ±1.0% | |
| SETUP, RISE TIME | 200ms, 30ms / 230VAC 200ms, 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% | 82% | 84% | 88% | 89% | 89.5% | 92% | |
| | AC CURRENT (Typ.) | 1A / 115VAC 0.5A / 230VAC | | | | | | | |
| | INRUSH CURRENT (Typ.) | COLD STAR 30A/115VAC 60A/230VAC | | | | | | | |
| LEAKAGE CURRENT(max.) Note.6 | Touch current < 80 μA/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/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 | 628.7Khrs min. MIL-HDBK-217(25°C) | | | | | | | |
| | DIMENSION (L*W*H) | 76.2*50.8*24mm or 3" * 2" *0.945" inch | | | | | | | |
| | PACKING | 0.09Kg; 120pcs/11.8Kg/0.94CUFT | | | | | | | |

NOTE

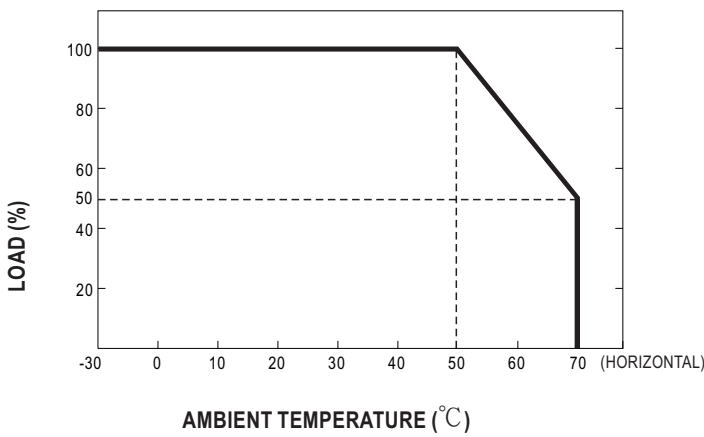
- All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
 - 33% Duty cycle maximum within every 30 seconds. Average output power should not exceed the rated power.
 - Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire 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. 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>)
- ※ Product Liability Disclaimer : For detailed information, please refer to <https://www.meanwell.com/serviceDisclaimer.aspx>

■ Block Diagram

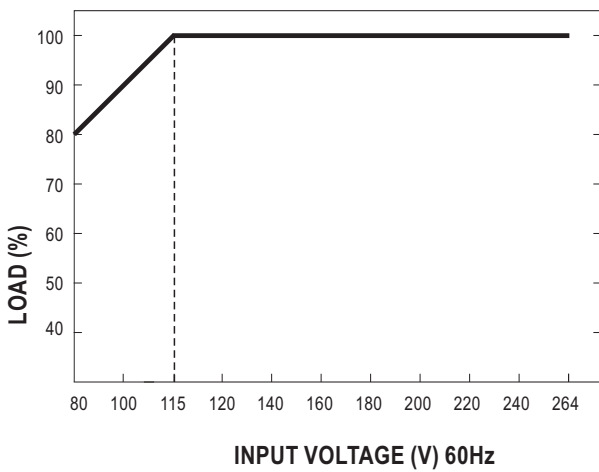
fosc : 65KHz



■ Derating Curve

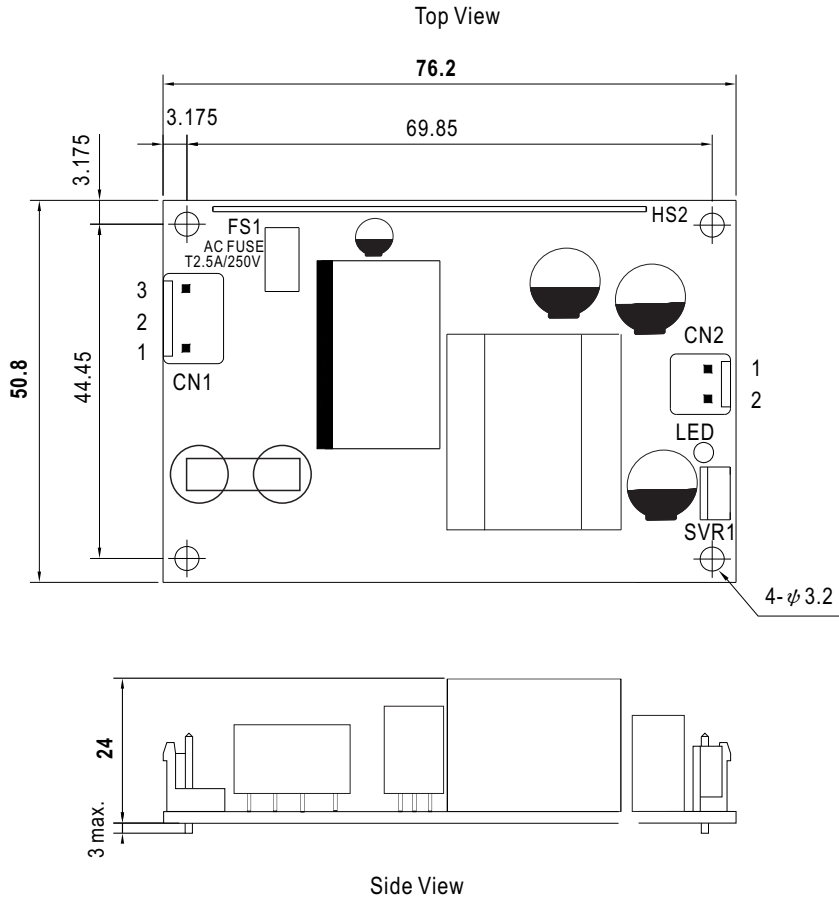


■ Static Characteristics



■ 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 B2P-VH or equivalent

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

■ Installation Manual

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

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