

## 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 > 105K hours
- 3 years warranty

## Applications

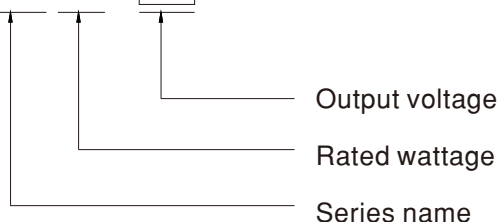
- Oral irrigator
- Hemodialysis machine
- Medical computer monitors
- Sleep apnea devices

## 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  $\mu$ A. 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

**RPS-30-3.3**

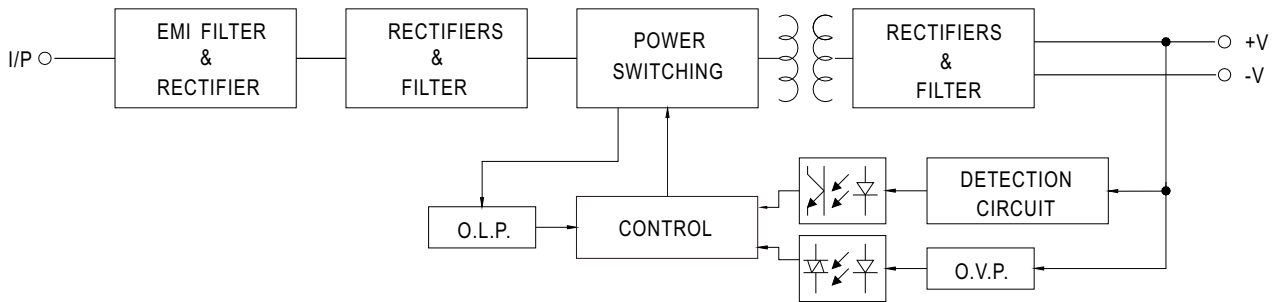


## SPECIFICATION

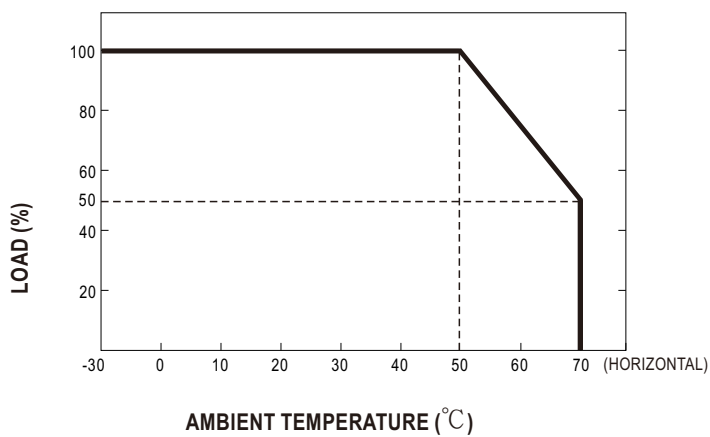
ORDER NO.		RPS-30-3.3	RPS-30-5	RPS-30-7.5	RPS-30-12	RPS-30-15	RPS-30-24	RPS-30-48	
OUTPUT	DC VOLTAGE	3.3V	5V	7.5V	12V	15V	24V	48V	
	RATED CURRENT	6A	6A	4A	2.5A	2A	1.25A	0.625A	
	CURRENT RANGE	0 ~ 6.6A	0 ~ 6.6A	0 ~ 4.4A	0 ~ 2.75A	0 ~ 2.2A	0 ~ 1.375A	0 ~ 0.687A	
	RATED POWER	19.8W	30W	30W	30W	30W	30W	30W	
	PEAK LOAD(10sec.) <small>Note.2</small>	21.8W	33W	33W	33W	33W	33W	33W	
	RIPPLE & NOISE (max.) <small>Note.3</small>	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 <small>Note.5</small>	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.) <small>Note.6</small>	Touch current< 80 $\mu$ A/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	
ENVIRONMENT	WORKING TEMP.	-30 ~ +70℃ (Refer to "Derating Curve")							
	WORKING HUMIDITY	20% ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH non-condensing							
	TEMP. COEFFICIENT	±0.03% / °C (0 ~ 50℃)							
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes							
	OPERATING ALTITUDE <small>Note.7</small>	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℃ / 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 ) 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, 100% interruptions 250 periods			
OTHERS	MTBF	628.7Khrs min. MIL-HDBK-217(25℃)							
	DIMENSION (L*W*H)	76.2*50.8*24mm or 3" * 2" *0.945" inch							
	PACKING	0.09Kg; 120pcs/11.8Kg/0.97CUFT							
NOTE		1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. 33% Duty cycle maximum within every 30 seconds. Average output power should not exceed the rated power. 3. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 $\mu$ f & 47 $\mu$ f parallel capacitor. 4. Tolerance : includes set up tolerance, line regulation and load regulation. 5. Derating may be needed under low input voltages. Please check the derating curve for more details. 6. Touch current was measured from primary input to DC output. 7. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft). 8. 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 <a href="http://www.meanwell.com">http://www.meanwell.com</a> )							

## Block Diagram

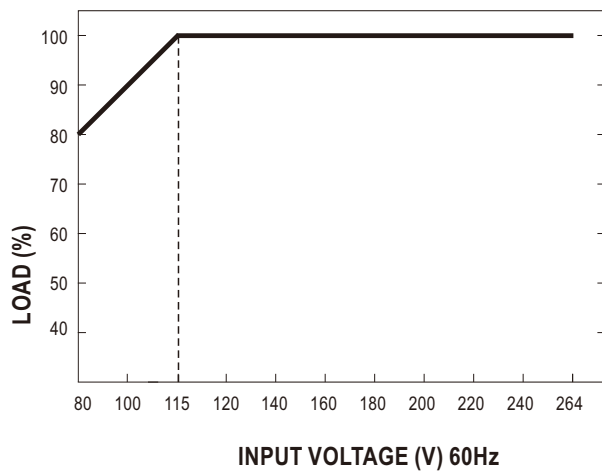
fosc : 65KHz



## Derating Curve

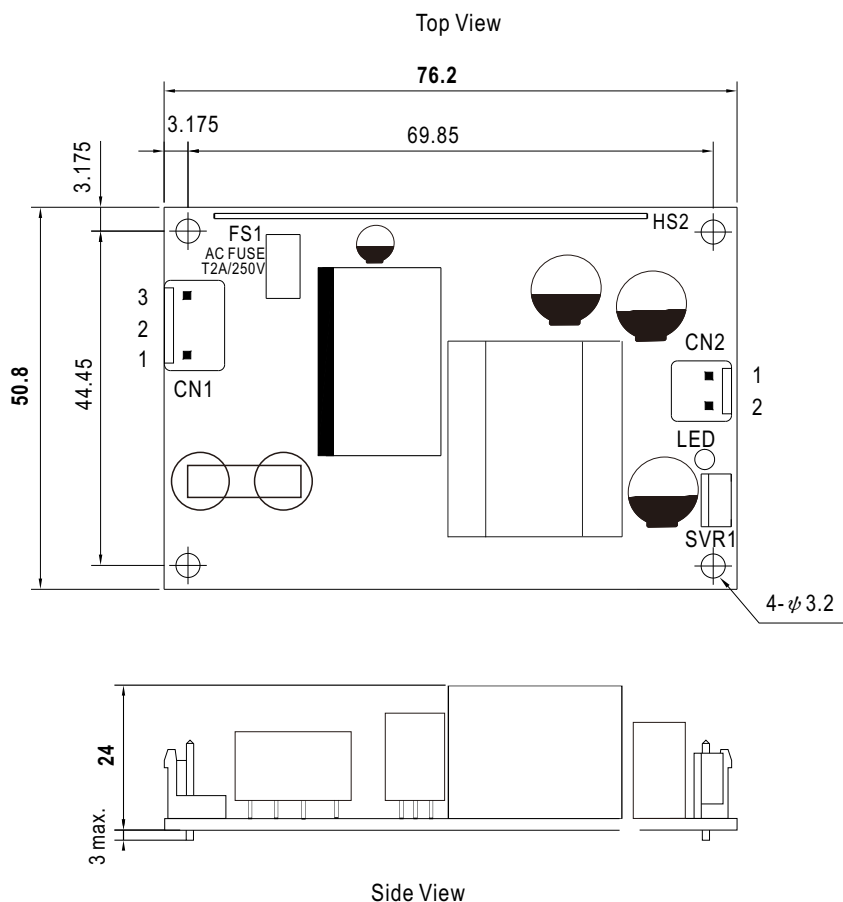


## Static Characteristics



# 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>