



(MPM-45)



(MPM-45-xxST)



■ Features

- 3.43"x2.05" compact size
- PCB chassis or screw terminal mounting version
- Medical safety approved (2 x MOPP) according to ANSI/AAMI ES60601-1 and IEC/EN60601-1
- Suitable for BF application with appropriate system consideration
- No load power consumption < 0.1W
- Extremely low leakage current
- Wide operating temp. range -30 ~ +80°C
- EMI Class B without additional components
- Isolation Class II
- Protections: Short circuit / Overload / Over voltage
- No minimum load required
- Operating altitude up to 4000 meters(Note.7)
- 50W peak(10 sec.)
- 3 years warranty

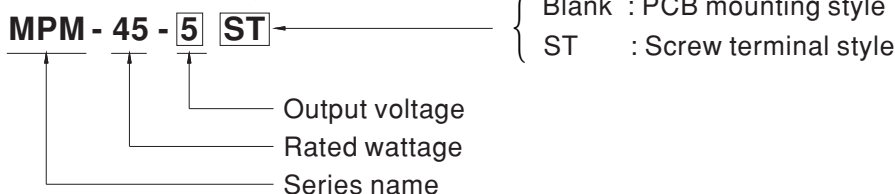
■ Applications

- Portable medical device
- Mobile clinical workstation
- Medical computer monitor
- Medical examination instrument

■ Description

MPM-45 is a 45W high density and small size (87x52x29.5mm) AC/DC PCB-mount type medical grade power supply. It features the operation for 80~264VAC, a low no load power consumption less than 0.1W, a high efficiency up to 92.5%, Class II (no FG) double insulation, outstanding dissipation, 5G anti-vibration, high EMC performance, 4KVAC isolation, etc. The design observes IEC/EN60601-1 and ANSI/AAMI ES60601-1 version three with 2 x MOPP level and ultra-low leakage current (<100µA). It is very suitable for BF (patient contact) type medical device or relevant equipment.

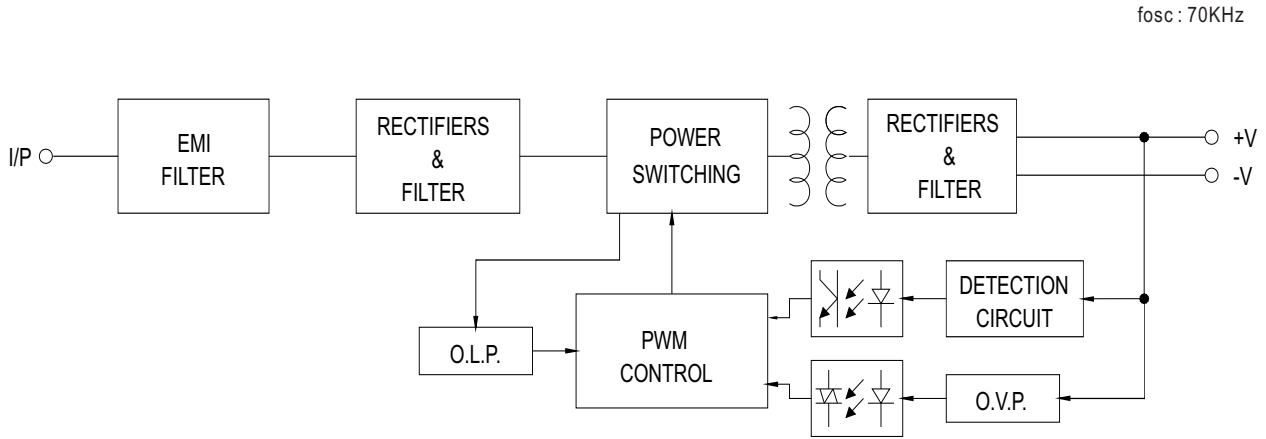
■ Model Encoding



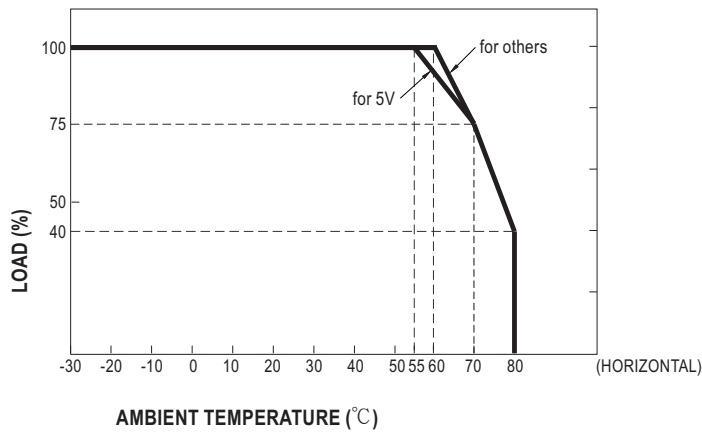
SPECIFICATION

MODEL		MPM-45-5 <input type="checkbox"/>	MPM-45-12 <input type="checkbox"/>	MPM-45-15 <input type="checkbox"/>	MPM-45-24 <input type="checkbox"/>	MPM-45-48 <input type="checkbox"/>			
OUTPUT	DC VOLTAGE	5V	12V	15V	24V	48V			
	CURRENT	Peak(10 sec.)	8.8A	4.13A	3.3A	2.1A	1.05A		
		Convection	8A	3.75A	3A	1.88A	0.94A		
	RATED POWER	Peak(10 sec.) <small>Note.2</small>	44W	49.5W	49.5W	50.4W	50.4W		
		Convection	40W	45W	45W	45.1W	45.1W		
	RIPPLE & NOISE (max.) <small>Note.3</small>	80mVp-p	120mVp-p	120mVp-p	200mVp-p	240mVp-p			
	VOLTAGE TOLERANCE <small>Note.4</small>	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%			
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%			
	LOAD REGULATION	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%			
SETUP, RISE TIME	1000ms, 30ms/230VAC	1000ms, 30ms/115VAC at full load							
HOLD UP TIME (Typ.)	50ms/230VAC	12ms/115VAC at full load							
INPUT	VOLTAGE RANGE <small>Note.5</small>	80 ~ 264VAC	113 ~ 370VDC						
	FREQUENCY RANGE	47 ~ 63Hz							
	EFFICIENCY (Typ.)	88%	91.5%	92.5%	92.5%	92%			
	AC CURRENT (Typ.)	1.2A/115VAC	0.6A/230VAC						
	INRUSH CURRENT (Typ.)	COLD START	30A/115VAC	60A/230VAC					
	LEAKAGE CURRENT (max.) <small>Note.6</small>	Touch current <100µA/264VAC							
PROTECTION	OVERLOAD	115% ~ 135% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed							
	OVER VOLTAGE	5.3 ~ 7.2V	12.6 ~ 16.2V	15.8 ~ 20.3V	25.2 ~ 32.4V	50.4 ~ 64.8V			
	OVER TEMPERATURE	Protection type : Shut down o/p voltage, re-power on to recover							
ENVIRONMENT	WORKING TEMP.	-30 ~ +80°C (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP.	-40 ~ +85°C							
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 60°C)							
	SOLDERING TEMPERATURE	260°C ±5°C/10sec.max.							
	VIBRATION	Blank:10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes ST:10 ~ 500Hz, 5G 10min./1cycle, period for 60min. each along X, Y, Z axes							
	OPERATING ALTITUDE <small>Note.7</small>	4000 meters / OVC II							
SAFETY & EMC (Note 8)	SAFETY STANDARDS	IEC60601-1, EN60601-1, EAC TP TC 004, UL ANSI/AAMI ES60601-1(3.1 version), CAN/CSA-C22 3 rd Edition approved; Design refer to EN60335-1(by request)							
	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	EN55011 (CISPR11)			Class B			
		Radiated	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 3, 1KV/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			>95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods				
OTHERS	MTBF	563.44Khrs min. MIL-HDBK-217F (25°C);	1530.14Khrs min. Telcordia TR/SR-332 (Bellcore) (25°C)						
	DIMENSION	PCB mounting style : 87*52*29.5mm (L*W*H)			Screw terminal style : 109*52*33.5mm (L*W*H)				
	PACKING	PCB mounting style : 0.185Kg;60pcs/12.1Kg/0.97CUFT			Screw terminal style : 0.206Kg;50pcs/11.3Kg/0.55CUFT				
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 0.1 µf & 47 µf 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. 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>								

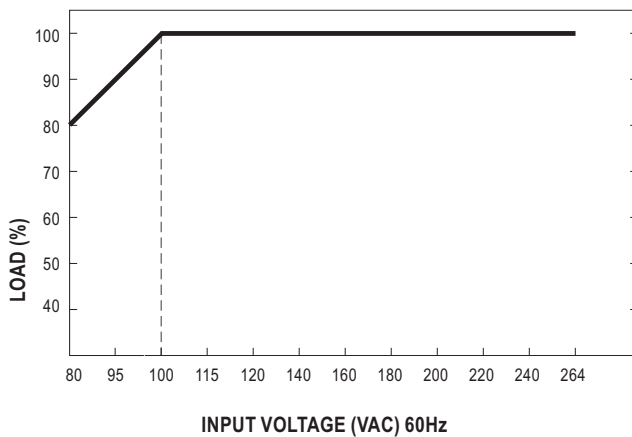
■ Block Diagram



■ Derating Curve



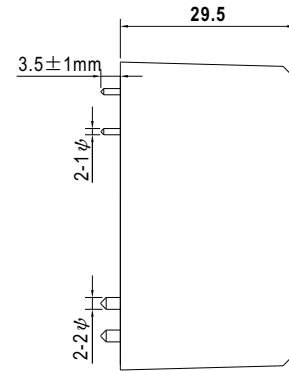
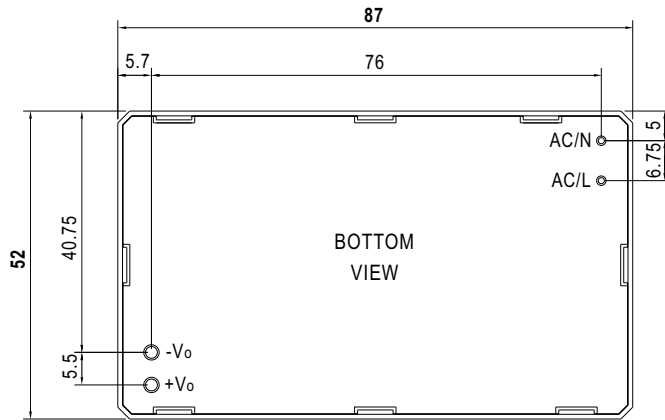
■ Output Derating VS Input Voltage



Mechanical Specification

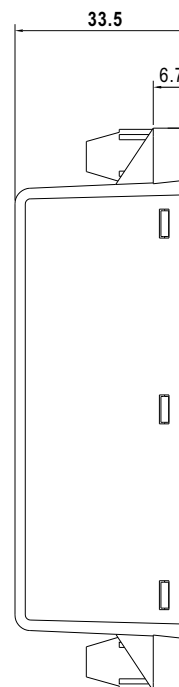
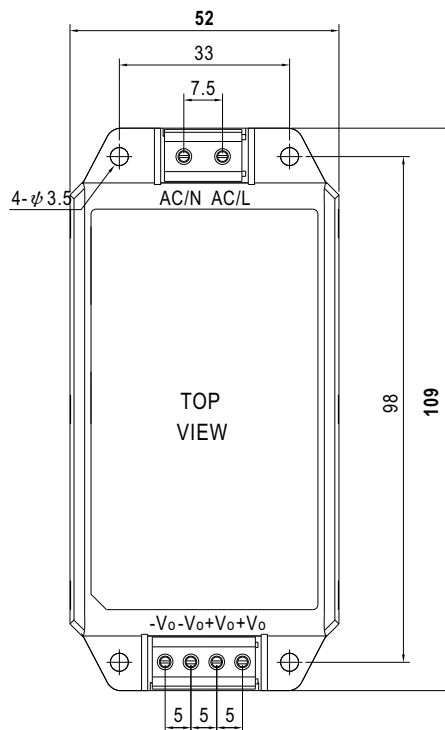
Case No. IRM60 Unit:mm

- PCB mounting style (MPM-45)



AC/L, AC/N P/N diameter: 1 φ
+Vo, -Vo P/N diameter: 2 φ

- Screw terminal style (MPM-45-xxST)



Installation Manual

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