



EN60335-1



ANSI/AAMI ES60601-1



EN60601-1



IEC60601-1



TPTC004



■ Features

- 2.06"x1.07" 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
- No load power consumption<0.1W
- Extremely low leakage current
- Wide operating temp. range -35 ~ +85°C
- EMI class B for class II configuration
- Protections:
 - Short circuit / Overload / Over voltage / Over temperature
- No minimum load required
- 3 years warranty

■ Applications

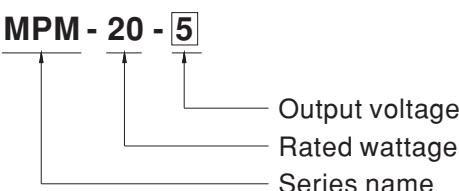
- Portable medical device
- Mobile clinical workstation
- Medical computer monitor
- Medical examination instrument

■ Description

MPM-20 is a 20W high density and small size (52.4*27.2*24mm) AC/DC module type medical power supply series offered in pin type. It features the operation for 80~264VAC, a low no load power consumption less than 0.1W, a high efficiency up to 87%, Class II (no FG) double insulation, outstanding dissipation and high lifespan thanks to the interior potting, 2G anti-vibration, high EMC performance, 4KVAC isolation, etc. The design observes IEC/EN60601-1 and ANSI/AAMI ES60601-1version three with 2xMOPP level and ultra-low leakage current (<80 μ A). It is very suitable for BF (patient contact) type medical device or relevant equipment.

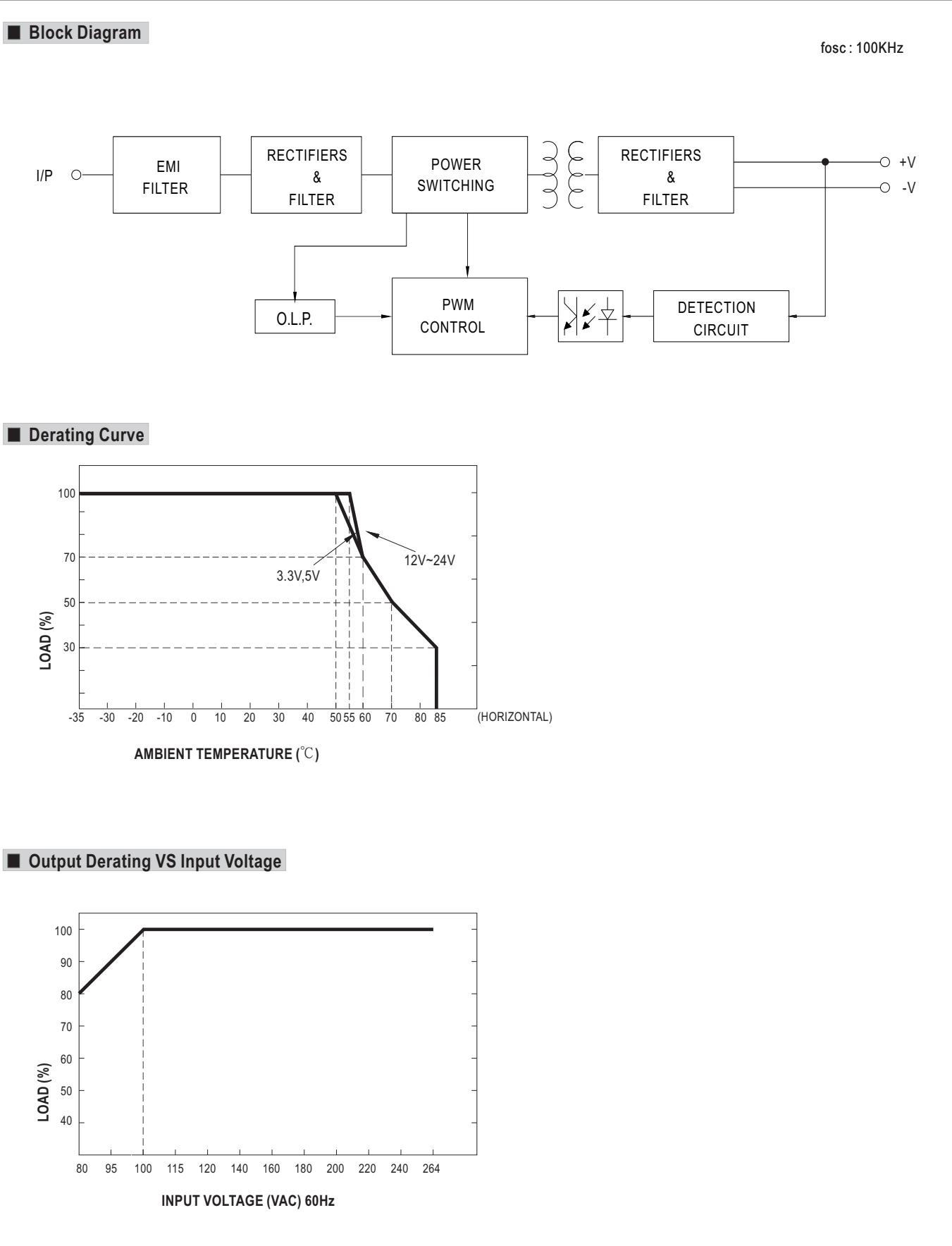
■ Model Encoding

MPM - 20 - 5



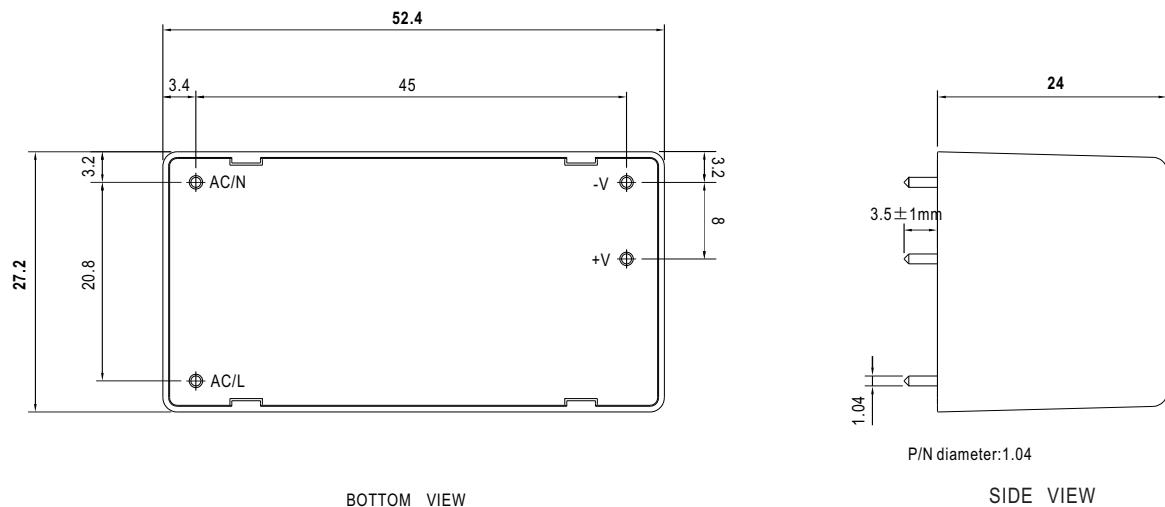
SPECIFICATION

MODEL	MPM-20-3.3	MPM-20-5	MPM-20-12	MPM-20-15	MPM-20-24		
OUTPUT	DC VOLTAGE	3.3V	5V	12V	15V		
	RATED CURRENT	4.5A	4A	1.8A	1.4A		
	CURRENT RANGE Note.2	0 ~ 4.5A	0 ~ 4A	0 ~ 1.8A	0 ~ 1.4A		
	PEAK CURRENT	4.95A	4.4A	1.98A	1.54A		
	RATED POWER	14.9W	20W	21.6W	21W		
	PEAK LOAD(10sec.) Note.3	16.3W	22W	23.8W	23.1W		
	RIPLPE & NOISE (max.) Note.4	150mVp-p	150mVp-p	150mVp-p	180mVp-p		
	VOLTAGE TOLERANCE Note.5	±2.0%	±2.0%	±2.0%	±2.0%		
	LINE REGULATION	±0.5%	±0.5%	±0.3%	±0.3%		
	LOAD REGULATION	±0.5%	±0.5%	±0.5%	±0.5%		
INPUT	SETUP, RISE TIME	1500ms, 30ms/230VAC	1500ms, 30ms/115VAC at full load				
	HOLD UP TIME (Typ.)	40ms/230VAC	10ms/115VAC at full load				
PROTECTION	VOLTAGE RANGE Note.6	80 ~ 264VAC					
	FREQUENCY RANGE	47 ~ 440Hz					
	EFFICIENCY (Typ.)	81%	85%	85.5%	87%		
	AC CURRENT (Typ.)	0.75A/115VAC	0.5A/230VAC				
	INRUSH CURRENT (Typ.)	COLD START	20A/115VAC	45A/230VAC			
ENVIRONMENT	LEAKAGE CURRENT (max.) Note.7	Touch current <80μA/264VAC					
	OVERLOAD	110% ~ 150% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	3.8 ~ 5V	5.8 ~ 6.8V	13.8 ~ 16.2V	17.3 ~ 20.3V		
	OVER TEMPERATURE	Protection type : Shut off o/p voltage, clamping by zener diode					
SAFETY & EMC (Note.9)	WORKING TEMP.	-35 ~ +85°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 ~ 55°C)					
	SOLDERING TEMPERATURE	260°C ±5°C/10sec.max.					
	VIBRATION	10 ~ 500Hz, 2G 10min./cycle, period for 60min. each along X, Y, Z axes					
	LEAD TEMPERATURE	260±5°C, 5s (max.)					
	OPERATING ALTITUDE Note.8	5000 meters					
OTHERS	SAFETY STANDARDS	IEC60601-1, EN60601-1, IEC60335-1, EN60335-1, EAC TP TC 004, UL ANSI/AAMI ES60601-1(3.1 version), CAN/CSA-C22 3 rd Edition approved					
	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			
	EMC IMMUNITY	Voltage flicker	EN61000-3-3	-----			
		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	100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods			
NOTE	MTBF	1210Khrs min. MIL-HDBK-217F (25°C)					
	DIMENSION	52.4*27.2*24mm (L*W*H) or 2.06"**1.07"**0.94" inch					
	PACKING	0.056Kg; 240pcs/14.4Kg/0.94CUFT					
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. 2. No minimum load required. 3. 33% Duty cycle maximum within every 30 seconds. Average output power should not exceed the rated power. 4. 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. 5. Tolerance : includes set up tolerance, line regulation and load regulation. 6. Derating may be needed under low input voltages. Please check the derating curve for more details. 7. Touch current was measured from primary input to DC output. 8. 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). 9. 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)							



■ Mechanical Specification

Case No.219A Unit:(mm)

**■ Installation Manual**Please refer to : <http://www.meanwell.com/manual.html>