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65W AC-DC High Reliable PCB-Mount Green Medical Power Module MPM-65 series



(MPM-65)



(MPM-65-xxST)

ANSI/AAMI ES60601-1 EN60601-1 IEC60601-1 TPTC004

ECO Medical 2xMOPP BF rated

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℃
- 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)
- 71W peak(10 sec.)
- 3 years warranty

Applications

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

Description

MPM-65 is a 65W 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 93%, Class Ⅱ (no FG) double insulation, outstanding dissipation, 2~5G anti-vibration by model, high EMC performance, 4KVAC isolation, etc. The design observes IEC/EN60601-1 and ANSI/AAMI ES60601-1version 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

MPM - 65 - 5 ST

- ST : Screw terminal style
- Blank : PCB mounting style

- 5 : Output voltage
- 65 : Rated wattage
- MPM : Series name

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SPECIFICATION

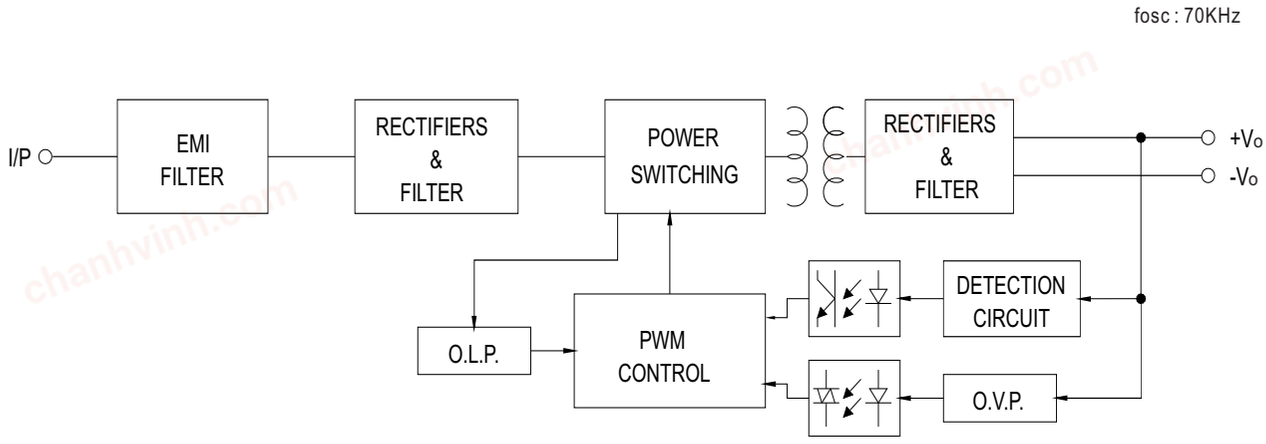
MODEL			MPM-65-5 ☐	MPM-65-12 ☐	MPM-65-15 ☐	MPM-65-24 ☐	MPM-65-48 ☐
OUTPUT	DC VOLTAGE		5V	12V	15V	24V	48V
	CURRENT	Peak(10 sec.)	11A	5.96A	4.77A	2.98A	1.49A
		Convection	10A	5.42A	4.33A	2.71A	1.36A
	RATED POWER	Peak(10 sec.)Note.2	55W	71.5W	71.6W	71.5W	71.5W
		Convection	50W	65W	65W	65W	65.3W
	RIPPLE & NOISE (max.) Note.3		80mVp-p	120mVp-p	120mVp-p	200mVp-p	240mVp-p
	VOLTAGE TOLERANCE Note.4		±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 Note.5		80 ~ 264VAC 113 ~ 370VDC				
	FREQUENCY RANGE		47 ~ 63Hz				
	EFFICIENCY (Typ.)		86.5%	92.5%	92.5%	93%	92%
	AC CURRENT (Typ.)		1.5A/115VAC 1A/230VAC				
	INRUSH CURRENT (Typ.)		COLD START 30A/115VAC 65A/230VAC				
	LEAKAGE CURRENT (max.) Note.6		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
			Protection type : Shut down o/p voltage, re-power on to recover				
	OVER TEMPERATURE		Protection type : Shut down o/p voltage, re-power on to recover				
ENVIRONMENT	WORKING TEMP.		-30 ~ +80℃ (Refer to "Derating Curve")				
	WORKING HUMIDITY		20 ~ 90% RH non-condensing				
	STORAGE TEMP.		-40 ~ +85℃				
	TEMP. COEFFICIENT		±0.03%/℃ (0 ~ 50℃)				
	SOLDERING TEMPERATURE		260℃ ±5℃/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 Note.7		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 3rd 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℃/ 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℃); 1530.14Khrs min. Telcordia TR/SR-332 (Bellcore) (25℃)				
	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 : 0.191Kg;60pcs/12.5Kg/0.97CUFT Screw terminal style :0.216Kg;50pcs/11.8Kg/0.55CUFT				

NOTE

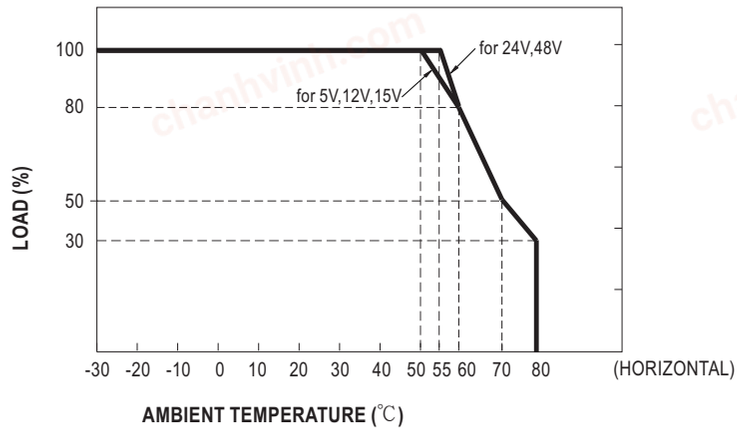
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. 33% Duty cycle maximum within every 30 seconds. Average output power should not exceed the rated power.
3. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 μf & 47 μf 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 http://www.meanwell.com)

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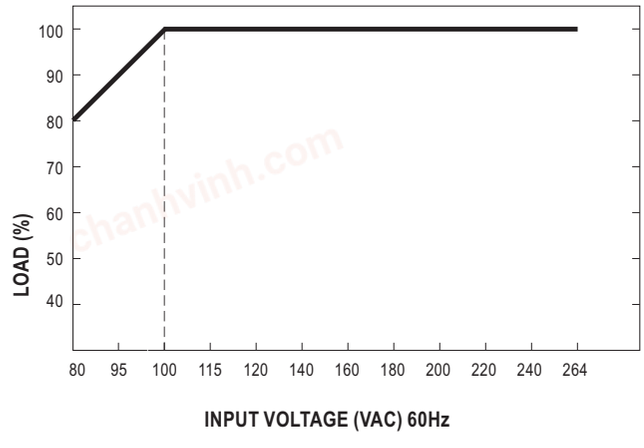
■ Block Diagram



■ Derating Curve



■ Output Derating VS Input Voltage

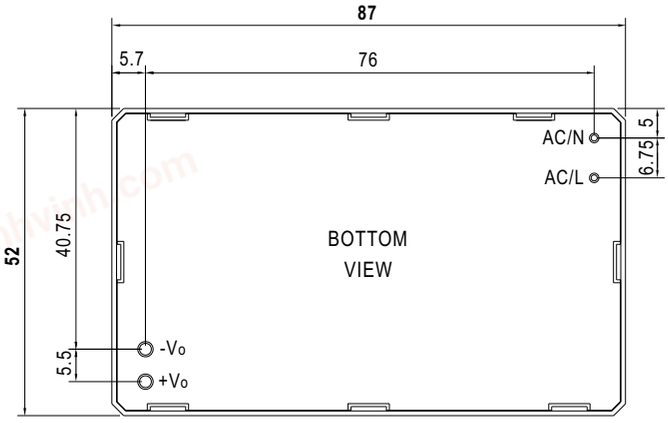


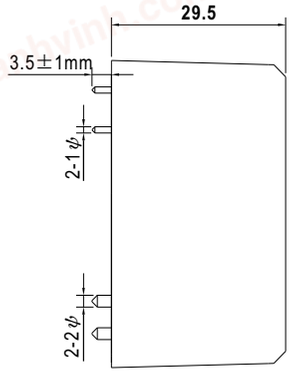
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■ Mechanical Specification

Case No.IRM60 Unit:mm

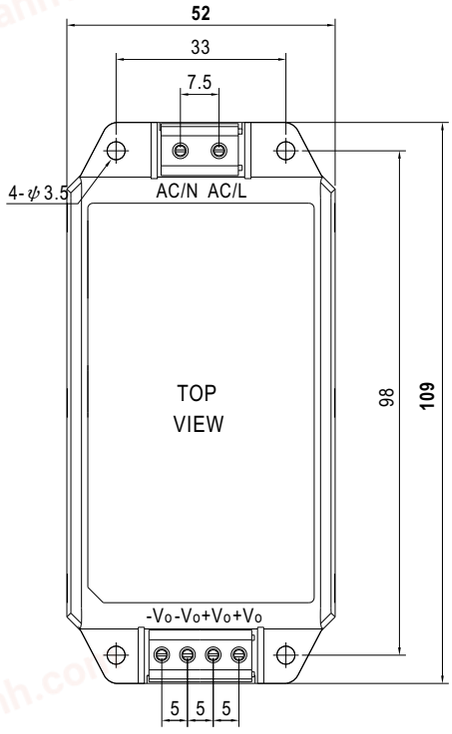
- **PCB mounting style (MPM-65)**

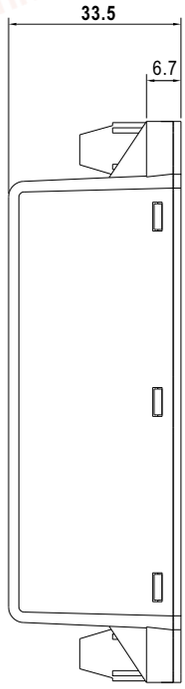




AC/L, AC/N P/N diameter:1ψ
+Vo, -Vo P/N diameter:2ψ

- **Screw terminal style (MPM-65-xxST)**





■ Installation Manual

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