

AC-DC Medical Power Module

VPM20 SERIES 20 Watts

KEY FEATURES

- Switching Power Module for PCB Mountable
- Fully Encapsulated Plastic Case
- Universal Input Range 90-264VAC
- Regulated Output and Low Ripple and Low Noise
- Isolation Class II
- Low Standby <0.1W
- Small Size
- CE, CB, UL, cUL Approvals



ELECTRICAL SPECIFICATIONS

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Model No.	VPM20-12S	VPM20-24S	
Max Output Wattage (W)	20W		
Input	Voltage	90-264 VAC or 120-370 VDC, " N " to DC " + " ; " L " to DC " - "	
	Frequency (Hz)	47-440 Hz	
	Current (Full load)	440 mA max. (115 VAC) / 287 mA max. (230 VAC)	
	Leakage Current	< 0.1mA / 264 VAC (Touch Current)	
	Inrush Current (<2ms,Cold Start)	20 A max. (115 VAC) / 40 A max. (230 VAC)	
Output	Voltage (V.DC.)	12V	24V
	Voltage Accuracy	±2%	
	Current (mA) max	1667	833
	Maximum Capacitive Load (at 230 VAC)	1500uF	470uF
	Line Regulation (LL-HL) (typ.)	±0.5%	
	Load Regulation (5-100%) (typ.)	±1%	
	Ripple & Noise (Full load)	150 mVp-p	240 mVp-p
	Efficiency (at 230 VAC)	83%	82%
Hold-up Time(typ)	6 ms (115VAC) / 46ms (230VAC)		
Protection	Over Power Protection	Hiccup technique, auto-recovery	
	Over Voltage Protection	Zener diode clamp	
	Short Circuit Protection	Hiccup mode, indefinite (automatic recovery)	
Isolation	Input-Output (V.AC)	4000V	
Environment	Operating Temperature	-40°C...+80°C (Case Temperature max. +95°C)	
	Storage Temperature	-40°C...+90°C	
	Temperature Coefficient	±0.05%/°C	
	Altitude During Operation	5000m	
	Humidity	up to 95% RH	
	MTBF	>350,000 h @ 25°C (MIL-HDBK-217F)	
	Atmospheric Pressure	70 kPa to 106 kPa	
Physical	Dimension (L x W x H)	2.07 x 1.08 x 0.93 Inches (52.5 x 27.5 x 23.5 mm) Tolerance ±0.5 mm	
	Case Material	Plastic resin (flammability to UL 94V-0)	
	Weight	59 g	
	Cooling Method	Free air convection	



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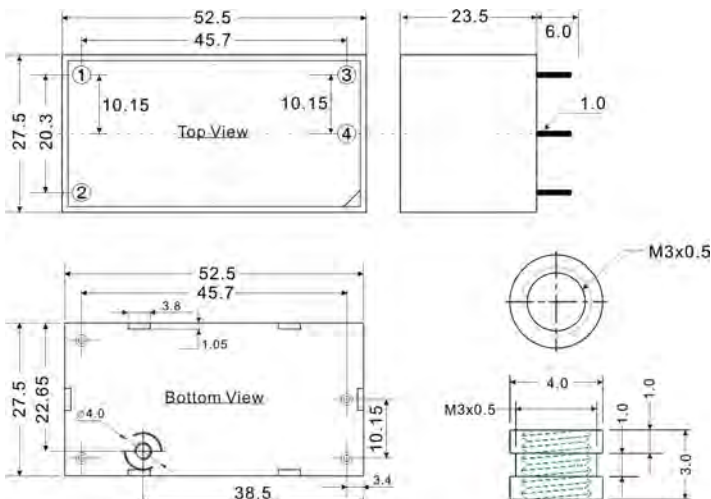
All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Model No.		VPM20-125	VPM20-245
Safety	Approval	cUL / UL Standard: UL 60950-1, CAN/CSA C22.2 No. 60950-1-07 ANSI/AAMI ES60601-1 (2005 + C1:09 + A2:10), CAN/CSA-C22.2 No. 60601-1 (2008), 2 x MOPP CB Standard: IEC 60950-1:2005 (2nd Edition) + Am 1:2009 + Am 2:2013 IEC 60601-1:2005 (3rd Edition) + CORR. 1 (2006) + CORR. 2 (2007) + AM1 (2012) or IEC 60601-1 (2012 reprint), 2 x MOPP	
EMC	Conducted and radiated EMI	EN55011 (Pending)	
	ESD	EN61000-4-2 (Pending)	
	Radiated Immunity	EN61000-4-3 (Pending)	
	Fast Transient	EN61000-4-4 (Pending)	
	Surge	EN61000-4-5 (Pending)	
	Conducted Immunity	EN61000-4-6 (Pending)	
	PFMF	EN61000-4-8 (Pending)	
	Dips	EN61000-4-11 (Pending)	
	Interruption	EN61000-4-11 (Pending)	

NOTE

- This product is not designed for use in critical life support systems, equipment used in hazardous environment, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet.
- Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
- Safety approvals cover frequency 47-63 Hz.
- That "natural convection" is about 20LFM but is not equal to still air (0 LFM).
- It's recommended to add Varistor 14S471K at L / N input side in parallel.

MECHANICAL DIMENSION



PIN#	Single
1	AC IN (L)
2	AC IN (N)
3	+DC OUT
4	-DC OUT

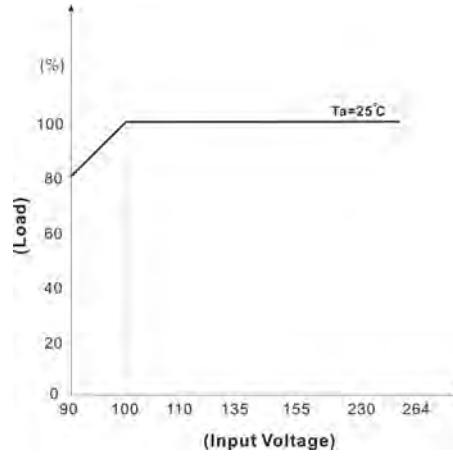
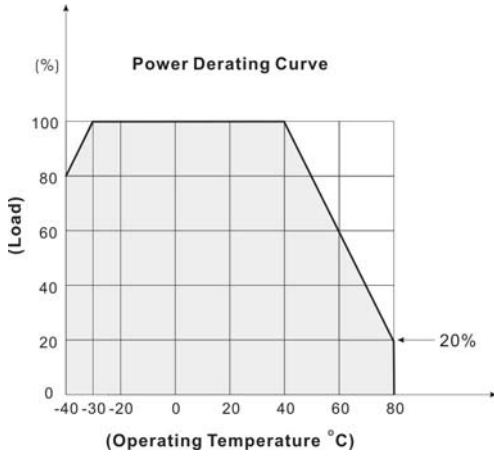
Maximum Torque 1 2 { 1.2 1 } (k g f . c m { N.m })



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DERATING



BLOCK DIAGRAM

Single Output

