



## 20W Output Switching Power Supply

## PM-20 series



### ■ Features :

- Universal AC input / Full range
- Low leakage current <300 $\mu$ A
- Protections: Short circuit / Overload / Over voltage
- Ultra-miniature size, light weight
- Cooling by free air convection
- Medical safety approved (2 x MOPP between primary to secondary)
- No load power consumption<0.75W
- 100% full load burn-in test
- Fixed switching frequency at 90KHz
- High reliability
- Suitable for BF application with appropriate system consideration
- 3 years warranty

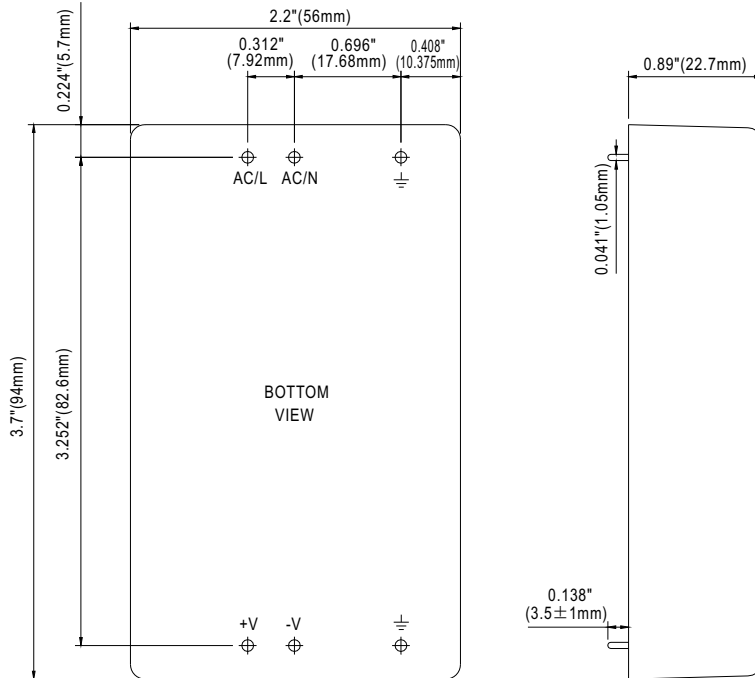


### SPECIFICATION

MODEL	PM-20-3.3	PM-20-5	PM-20-12	PM-20-15	PM-20-24	
OUTPUT	DC VOLTAGE	3.3V	5V	12V	15V	24V
	RATED CURRENT	4.5A	4.4A	1.8A	1.4A	0.92A
	CURRENT RANGE	0 ~ 4.5A	0 ~ 4.4A	0 ~ 1.8A	0 ~ 1.4A	0 ~ 0.92A
	RATED POWER	14.85W	22W	21.6W	21W	22.08W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	80mVp-p	150mVp-p	150mVp-p	240mVp-p
	VOLTAGE TOLERANCE Note.3	$\pm 3.0\%$	$\pm 2.0\%$	$\pm 2.0\%$	$\pm 2.0\%$	$\pm 2.0\%$
	LINE REGULATION	$\pm 1.0\%$	$\pm 1.0\%$	$\pm 0.5\%$	$\pm 0.5\%$	$\pm 0.5\%$
	LOAD REGULATION	$\pm 1.5\%$	$\pm 1.5\%$	$\pm 1.0\%$	$\pm 1.0\%$	$\pm 0.5\%$
	SETUP, RISE TIME	500ms, 20ms/230VAC 500ms, 20ms/115VAC at full load				
HOLD UP TIME (Typ.)	50ms/230VAC 15ms/115VAC at full load					
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC				
	FREQUENCY RANGE	47 ~ 440Hz				
	EFFICIENCY (Typ.)	71%	75%	81%	83%	84%
	AC CURRENT (Typ.)	0.6A/115VAC 0.4A/230VAC				
	INRUSH CURRENT (Typ.)	COLD START 30A/115VAC 65A/230VAC				
LEAKAGE CURRENT Note.6	Earth leakage current < 300 $\mu$ A/264VAC , Touch current < 100 $\mu$ A/264VAC					
PROTECTION	OVERLOAD	Above 105% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed				
	OVER VOLTAGE	3.8 ~ 4.46V	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V
ENVIRONMENT	WORKING TEMP.	-20 ~ +60 $^{\circ}$ C (Refer to "Derating Curve")				
	WORKING HUMIDITY	20 ~ 90% RH non-condensing				
	STORAGE TEMP., HUMIDITY	-40 ~ +85 $^{\circ}$ C, 10 ~ 95% RH				
	TEMP. COEFFICIENT	$\pm 0.03\%/^{\circ}$ C (0 ~ 50 $^{\circ}$ C)				
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes				
SAFETY & EMC (Note 4)	SAFETY STANDARDS	ANSI/AAMI ES60601-1, TUV EN60601-1, IEC60601-1 approved				
	ISOLATION LEVEL	Primary-Secondary: 2xMOPP, Primary-Earth:1xMOPP, Secondary-Earth:1xMOPP				
	WITHSTAND VOLTAGE	I/P-O/P:4KVAC I/P-FG:2KVAC O/P-FG:1.5KVAC				
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25 $^{\circ}$ C / 70% RH				
	EMC EMISSION	Compliance to EN55011(CISPR11),EN55022 (CISPR22) Class B, EN61000-3-2,-3				
OTHERS	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN60601-1-2, EN61204-3, medical level, criteria A				
	MTBF	487.8Khrs min. MIL-HDBK-217F (25 $^{\circ}$ C)				
	DIMENSION	94*56*22.7mm (L*W*H)				
	PACKING	0.18Kg; 90pcs/17.2Kg/0.97CUFT				
NOTE	<ol style="list-style-type: none"> <li>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25<math>^{\circ}</math>C of ambient temperature.</li> <li>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1<math>\mu</math>f &amp; 47<math>\mu</math>f parallel capacitor.</li> <li>3. Tolerance : includes set up tolerance, line regulation and load regulation.</li> <li>4. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. 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>)</li> <li>5. Touch current was measured from primary input to DC output.</li> </ol>					

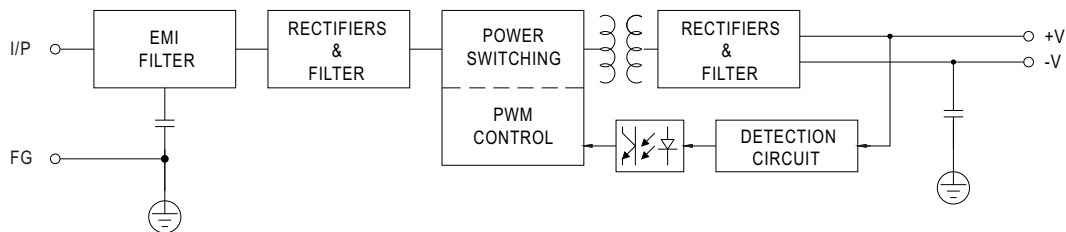
**Mechanical Specification**

Case No. 951A Unit:inch(mm)

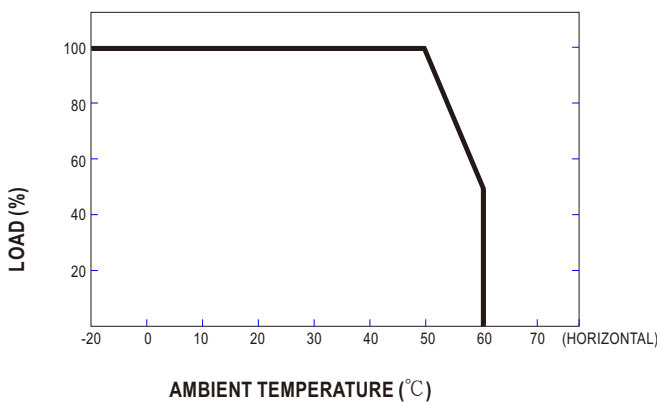


**Block Diagram**

fosc : 90KHz



**Derating Curve**



**Output Derating VS Input Voltage**

