



80~150W Open Frame Medical power supply < PM150

DESCRIPTION

The PM150 series of AC-DC switching power supplies in a package of 2 x 4 x 1.3 inches are capable of delivering 120-150 watts of continuous power at 30 CFM forced air cooling or 80-100 watts at convection cooling. The units are constructed on a printed circuit board. They are specially designed for medical applications, but not for life-supporting equipment. The units are certified also to IEC /EN /UL /CSA 60950-1 and suitable for data networking, computer and telecommunication applications.

FEATURES

- 2 x 4 inch footprint with 1.3 inch low profile
- 100-240 VAC input with active PFC
- Less than 275 μ A leakage current
- Meet EN55011 /55022 and FCC Class B
- Power Factor 0.98 typical
- 100% burn-in at full load
- Short-circuit protection
- Power Fail Detect (PFD) signal
- Compliant with RoHS requirements
- Efficiency greater than 87%
- No load power consumption less than 0.5W

INPUT SPECIFICATIONS

Input voltage: 90-264 VAC
 Input frequency: 47-63 Hz
 Input current: 1.7 A (rms) for 115 VAC
 0.85 A (rms) for 230 VAC
 Earth leakage current: 275 μ A max. @ 264 VAC, 63 Hz

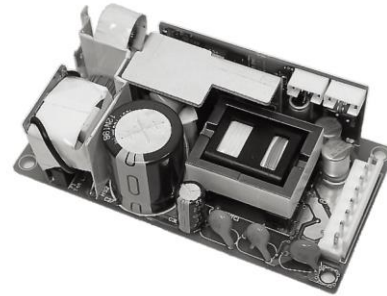
OUTPUT SPECIFICATIONS

Output voltage/current: See rating chart.
 Total output power: See rating chart.
 Ripple and noise: See rating chart.
 Overvoltage protection: set at 112-140% of its nominal output voltage
 Overcurrent protection: Output protected to short circuit conditions
 Temperature coefficient: All outputs \pm 0.04% / $^{\circ}$ C maximum
 Transient response: Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 μ s after a 25% step load change
 Fan power: 12 V at 1.0 A maximum (isolated)

ENVIRONMENTAL SPECIFICATIONS

Operating temperature: 0 $^{\circ}$ C to +70 $^{\circ}$ C
 Storage temperature: -40 $^{\circ}$ C to +85 $^{\circ}$ C
 Relative humidity: 5% to 95% non-condensing
 Derating: Derate from 100% at +50 $^{\circ}$ C linearly to 50% at +70 $^{\circ}$ C, applicable to convection and forced-air cooling conditions

PM150 SERIES



RoHS

SAFETY STANDARD APPROVAL

Pending

GENERAL SPECIFICATIONS

Switching frequency: 133 KHz (typical)
 Efficiency: See rating chart.
 Hold-up time: 10 ms minimum at 120 VAC
 Line regulation: \pm 0.5% maximum at full load
 Inrush current: 30 A @ 115 VAC or 60 A @ 230 VAC, at 25 $^{\circ}$ C cold start
 Withstand voltage: 5600 VDC from input to output, 2100 VDC from input to ground, 700 VDC from output to ground (To verify AC strength, get correct test method to avoid power supply damage.)
 MTBF: 250,000 hours at full load at 25 $^{\circ}$ C ambient, calculated per MIL-HDBK-217F
 EMC Performance
 EN55011/EN55022: Class B conducted, class B radiated
 FCC: Class B conducted, class B radiated
 VCCI: Class B conducted, class B radiated
 EN61000-3-2: Harmonic distortion, class A and D
 EN61000-3-3: Line flicker
 EN61000-4-2: ESD, \pm 8 KV air and \pm 6 KV contact
 EN61000-4-3: Radiated immunity, 3 V/m
 EN61000-4-4: Fast transient/burst, \pm 2 KV
 EN61000-4-5: Surge, \pm 1 KV diff., \pm 2 KV com
 EN61000-4-6: Conducted immunity, 3 Vrms
 EN61000-4-8: Magnetic field immunity, 3 A/m
 EN61000-4-11: Voltage dip immunity, 30% reduction for 500 ms, 60% reduction for 100 ms, >95% reduction for 10 ms



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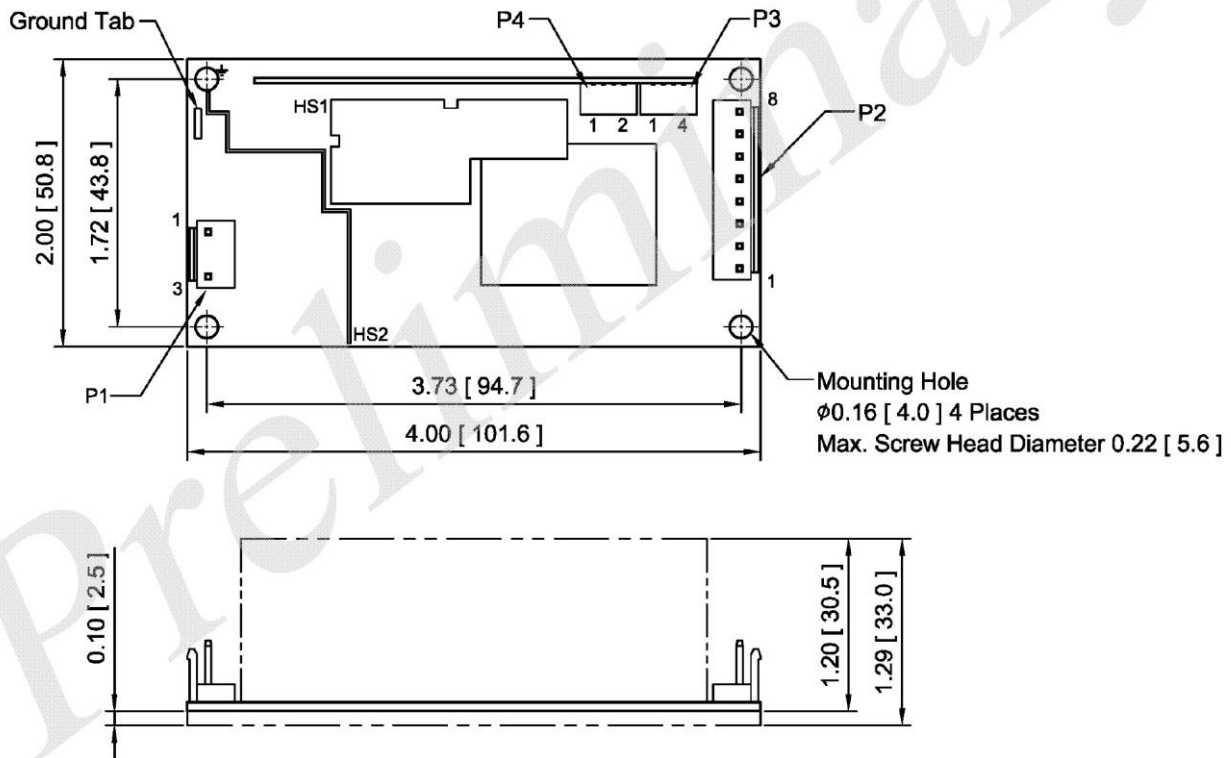
OUTPUT VOLTAGE/CURRENT RATING CHART

Model	Output							Efficiency (typical)		
	V1	Min. load	Max. Current at convection	Max. Current at 30 CFM	Peak ⁽¹⁾ Current	Tol.	Ripple & Noise ⁽³⁾	Max. Power ⁽²⁾	Max. Power at convection 115/230 Vac	Max. Power at 30 CFM 115/230 Vac
PM150-12A	12 V	0 A	8.3 A	12.5 A	14.0 A	±2%	120 mV	100 W /150 W	87 /89%	86 /88%
PM150-13A	15 V	0 A	6.7 A	10.0 A	11.0 A	±2%	150 mV	100 W /150 W	87 /89%	86 /88%
PM150-13-1A	18 V	0 A	5.56 A	8.34 A	9.2 A	±2%	180 mV	100 W /150 W	87 /89%	86 /88%
PM150-14A	24 V	0 A	4.2 A	6.3 A	7.0 A	±2%	240 mV	100 W /150 W	87 /89%	86 /88%
PM150-16A	30 V	0 A	3.34 A	5.0 A	5.6 A	±2%	300 mV	100 W /150 W	87 /89%	86 /88%
PM150-17A	36 V	0 A	2.78 A	4.17 A	4.6 A	±2%	360 mV	100 W /150 W	87 /89%	86 /88%
PM150-18A	48 V	0 A	2.1 A	3.1 A	3.5 A	±2%	480 mV	100 W /150 W	87 /89%	86 /88%

NOTES:

1. Peak output current with 10% duty cycle maximum for less than 15 seconds, average power not to exceed maximum power rating.
2. The first value of max. power is at convection cooling. The second value is with 30 CFM forced air provided by user.
3. Ripple and noise is maximum peak to peak voltage value measured at output within 20 MHz bandwidth, at rated line voltage and output load ranges, and with a 10 μF tantalum capacitor in parallel with a 0.1 μF ceramic capacitor across the output.

MECHANICAL SPECIFICATIONS



NOTES:

1. Dimensions shown in inches [mm]
2. Tolerance 0.02 [0.5] maximum
3. Input connector P1: JST header P/N V3P-VH-B, mating with JST housing P/N VHR-3N or equivalent.
4. Output connector P2: JST header P/N V8P-VH-B, mating with JST housing P/N VHR-8N or equivalent.
5. Connector P3: Molex header 53253-0470, mating with Molex housing 51065-400 or equivalent.
6. FAN connector P4: Molex header 53253-0270, mating with Molex housing 51065-0200 or equivalent.
7. Ground tab is 0.25 [6.35] × 0.032 [0.8] fast-on connector.
8. Weight: 200 grams (0.44 lbs.) approx.