

## DESCRIPTION

The PMP250 series of AC/DC switching power supplies are for 220-250 watts of continuous output power. They are enclosed in a 94V-0 rated polyphenylene-oxide case with an IEC320/C14 or C18 inlet to mate with interchangeable cord for world-wide use. All models meet EN 55011 class B emission limits, and are designed for medical applications.

## FEATURES

- BF class insulation
- Operating altitude up to 5000 meters
- Compliant with DoE level VI / CoC EPS V5 tier 2 requirements
- No load power consumption less than 0.15W
- With PFC circuit
- Wide input range 80 to 264 VAC
- 100% burn-in
- Overvoltage protection
- Overcurrent protection
- Compliant with RoHS requirements

## INPUT SPECIFICATIONS

Input voltage:	80-264 VAC
Power derating	Derate linearly from 100% at 90 VAC to 90% at 85Vac and 80% at 80 VAC
Input frequency:	47-63 Hz
Input current:	2.5 A (rms) for 115 VAC 1.25 A (rms) for 230 VAC
Earth leakage current:	220 $\mu$ A max. @ 264 VAC, 63 Hz
Touch current:	100 $\mu$ A max. @ 264 VAC, 63 Hz

## OUTPUT SPECIFICATIONS

Output voltage /current:	See rating chart.
Maximum output power:	See rating chart.
Ripple and noise:	1% peak to peak maximum
Overvoltage protection:	Provided and set at 112-140% of its nominal output voltage
Overcurrent protection:	Protected to short circuit conditions
Temperature coefficient:	$\pm 0.04\%$ / $^{\circ}$ C maximum
Transient response:	Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 us after a 25% step load change

## ENVIRONMENTAL SPECIFICATIONS

Operating temperature:	-20 $^{\circ}$ C to +60 $^{\circ}$ C
Atmospheric pressure	540 hPa to 1060 hPa
Storage temperature:	-40 $^{\circ}$ C to +85 $^{\circ}$ C
Relative humidity:	5% to 95% non-condensing
Temperature derating:	Derate from 100% at +40 $^{\circ}$ C linearly to 50% at +60 $^{\circ}$ C

## PMP250 SERIES

RoHS



## SAFETY STANDARD APPROVALS

## GENERAL SPECIFICATIONS

Switching frequency:	50-130 KHz
Power factor:	0.98 Typical at 115 VAC
Efficiency:	89% min. at full load
Hold-up time:	20 ms minimum at 100 VAC
Line regulation:	$\pm 0.5\%$ maximum at full load
Inrush current:	130 A @ 115 VAC or 260 A @ 230 VAC, at 25 $^{\circ}$ C cold start
Withstand voltage:	4000 VAC from input to output (2 MOPP) 1500 VAC from input to ground (1 MOPP) 500 VAC from output to ground (For class II models, 4000VAC from input to output)
MTBF:	100,000 hours at full load at 25 $^{\circ}$ C ambient , calculated per MIL-HDBK-217F

## EMC Performance (IEC60601-1-2)

EN55011:	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, $\pm 15$ KV air and $\pm 8$ KV contact
EN61000-4-3:	Radiated immunity, 10 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, 10 Vrms
EN61000-4-8:	Magnetic field immunity, 30 A/m
EN61000-4-11:	Voltage dip immunity, 30% reduction for 500 ms (criteria A @ 230VAC, criteria B @ 100VAC), 60% reduction for 100 ms (criteria A @ 230VAC, criteria B @ 100VAC) and >95% reduction for 20 ms

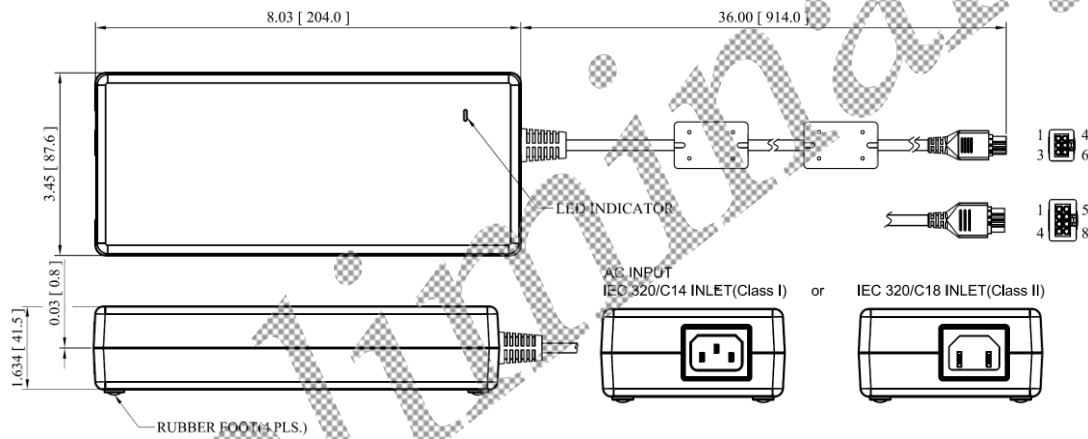
## OUTPUT VOLTAGE/CURRENT RATING CHART

Model <sup>(1)</sup>		Output						Average Active Efficiency (typical) @ 115 / 230 Vac
Class I	Class II	V1	Min. Current	Max. Current	Tol.	Ripple & Noise <sup>(2)</sup>	Max. Power	
PMP250-12	PMP250F-12	12 V	0 A	18.34 A	±5%	120 mV	220 W	89 /89%
PMP250-13	PMP250F-13	15 V	0 A	14.67 A	±5%	150 mV	220 W	89 /89%
PMP250-13-1	PMP250F-13-1	18 V	0 A	13.89 A	±5%	180 mV	250 W	89 /89%
PMP250-13-2	PMP250F-13-2	19 V	0 A	13.16 A	±5%	190 mV	250 W	89 /89%
PMP250-13-3	PMP250F-13-3	20 V	0 A	12.50 A	±5%	200 mV	250 W	89 /89%
PMP250-14	PMP250F-14	24 V	0 A	10.42 A	±5%	240 mV	250 W	90 /90%
PMP250-15	PMP250F-15	27 V	0 A	9.26 A	±5%	270 mV	250 W	90 /90%
PMP250-16	PMP250F-16	30 V	0 A	8.34 A	±5%	300 mV	250 W	90 /90%
PMP250-16-1	PMP250F-16-1	32 V	0 A	7.82 A	±5%	320 mV	250 W	90 /90%
PMP250-17	PMP250F-17	36 V	0 A	6.95 A	±5%	360 mV	250 W	90 /90%
PMP250-18	PMP250F-18	48 V	0 A	5.21 A	±5%	480 mV	250 W	90 /90%
PMP250-19	PMP250F-19	54 V	0 A	4.63 A	±5%	540 mV	250 W	90 /90%

**NOTES:**

- Class I models are equipped with IEC320/C14 inlet, and Class II models with IEC320/C18 inlet.
- 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 47 µF electrolytic capacitor in parallel with a 0.1 µF ceramic capacitor across the output.

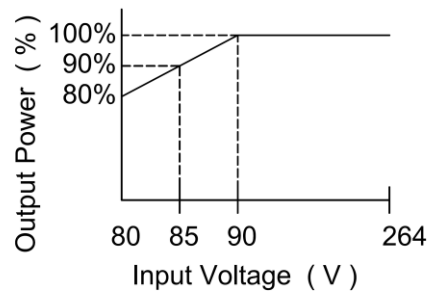
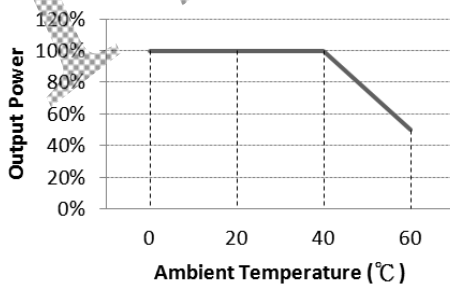
## MECHANICAL SPECIFICATIONS



**NOTES:**

- Dimensions shown in inches [mm]
- Tolerance 0.02 [0.5] maximum
- Weight: 1100 grams (2.425 lbs.) approx.
- Output connector is Molex Mini - Fit receptacle, P/N: 39-01-2060 (or P/N: 39-01-2080) with female terminal #5556 or equivalent, mating with Molex plug 39-01-2066 (or P/N: 39-01-2086) and male terminal #5558 or equivalent. It also mates with Molex headers #5566, #5569, or equivalent.

## OUTPUT POWER DERATING CURVE



## PIN CHART (output 18Vdc to 54Vdc)

PIN	1	2	3	4	5	6
1 3 4 6	+V1	V1 Return	V1 Return	+V1	+V1	V1 Return

## PIN CHART (output 12Vdc and 15Vdc)

PIN	1	2	3	4	5	6	7	8
1 4 5 8	+V1	V1 Return	V1 Return	V1 Return	+V1	+V1	+V1	V1 Return