

DESCRIPTION

The PMP60 series of AC/DC switching power supplies are for 30-60 watts of continuous output power. They are enclosed in a 94V-1 rated polyphenylene-oxide case with an IEC 320 / C14 inlet to mate with interchangeable cord for world-wide use. All models meet CISPR 11 and FCC class B emission limits, and are designed for medical applications, not for life supporting equipment.

FEATURES

- 12 standard desktop models
- Single, dual or triple outputs
- Optional output connectors
- Optional on/off switch
- 100% burn-in
- Wide input range 85-264 VAC
- Input surge current protection
- Overvoltage protection
- Overcurrent protection
- Compliant with CEC and Energy Star Efficiency level IV requirements for the products with single output
- * No load power consumption less than 0.5W
- * Average active efficiency $\geq 85\%$
- Compliant with RoHS requirement

INPUT SPECIFICATIONS

Input voltage: 85-264 VAC
 Input frequency: 47-63 Hz
 Input current: 1.22 A (rms) for 100 VAC
 0.68 A (rms) for 240 VAC
 Earth leakage current: 200 uA max. @ 264 VAC, 63 Hz

OUTPUT SPECIFICATIONS

Output voltage/current: See rating chart.
 Total output power: See rating chart.
 Ripple and noise: 100mV peak to peak on 3.3V & 5.0V models, 1% peak to peak on other models
 Overvoltage protection: Provided on output #1 only; set at 112-140% of its nominal output voltage
 Overcurrent protection: All outputs protected to short circuit conditions
 Temperature coefficient: All outputs $\pm 0.04\% / ^\circ\text{C}$ 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: 0°C to $+60^\circ\text{C}$
 Storage temperature: -40°C to $+85^\circ\text{C}$
 Relative humidity: 5% to 95% non-condensing
 Derating: Derate from 100% at $+40^\circ\text{C}$ linearly to 50% at $+60^\circ\text{C}$


PMP60 SERIES




CE (LVD)
RoHS

SAFETY STANDARD APPROVALS

 **UL 60601-1, CSA C22.2 No. 601.1**
 File No. E178020

 **TÜV EN60601-1**

 **UL 60950-1, CSA C22.2 No. 60950-1**
 (except PMP60-14 by UL)

 **TÜV EN60950-1**

GENERAL SPECIFICATIONS

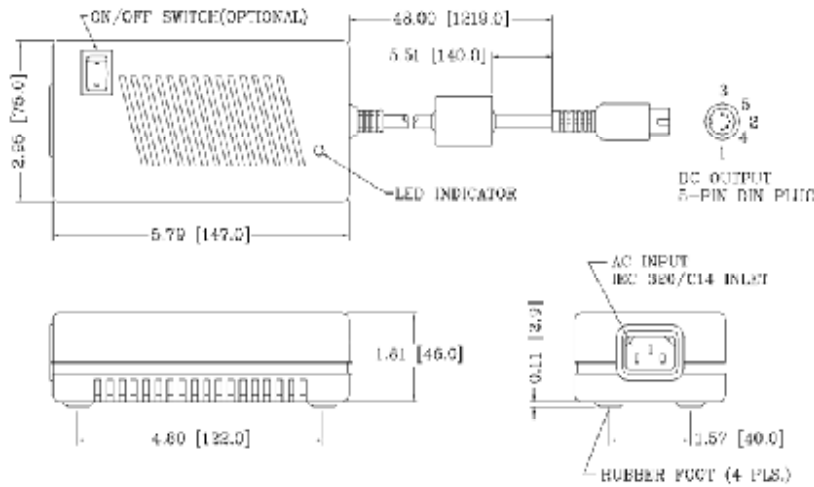
Switching frequency: 40 KHz-130 KHz
 Efficiency: 85% minimum on single output models, 68-74% minimum on the others
 Hold-up time: 10 msec minimum at 110 VAC
 Line regulation: $\pm 0.5\%$ maximum at full load
 Inrush current: 60 A @ 115 VAC or 100 A @ 230 VAC, at 25°C cold start
 Withstand voltage: 4000 VAC from input to output
 1500 VAC from input to ground
 500 VAC from output to ground
 MTBF: 150,000 hours minimum at full load at 25°C ambient, calculated per MIL-HDBK-217F
 EMC Performance (EN60601-1-2)
 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, ± 8 KV air and ± 6 KV contact
 EN61000-4-3: Radiated immunity, 3 V/m for 80-2500 MHz
 EN61000-4-4: Fast transient/burst, ± 2 KV
 EN61000-4-5: Surge, ± 1 KV diff., ± 2 KV com
 EN61000-4-6: Conducted immunity, 3 Vrms
 EN61000-4-8: Magnetic field immunity, 3 A/m
 EN61000-4-11: Voltage dips, 30% reduction for 500 ms
 60% reduction for 100 ms

OUTPUT VOLTAGE/CURRENT RATING CHART

MODEL	Output #1				Output #2				Output #3				Maximum Output Power
	Vnom.	Imin	Imax.	Tol.	Vnom.	Imin.	Imax.	Tol.	Vnom.	Imin.	Imax.	Tol.	
PMP60-12	11-13 V	0 A	5.46 A	5%			(N/A)						60 W
PMP60-13	13-17 V	0 A	4.62 A	5%			(N/A)						60 W
PMP60-13-1	17-21 V	0 A	3.53 A	5%			(N/A)						60 W
PMP60-14	21-27 V	0 A	2.86 A	5%			(N/A)						60 W
PMP60-16	27-33 V	0 A	2.23 A	3%			(N/A)						60 W
PMP60-17	33-39 V	0 A	1.82 A	3%			(N/A)						60 W
PMP60-18	46-50 V	0 A	1.31 A	3%			(N/A)						60 W
PMP60-23	+5 V	1 A	5.0 A	5%	+12 V	0.5 A	3.0 A	5%					40 W
PMP60-30	+3.3 V	1 A	6.0 A	5%	+5 V	0.5 A	3.0 A	5%	+12 V	0.1 A	0.7 A	10%	30 W
PMP60-31	+5 V	1 A	5.0 A	5%	+12 V	0.5 A	3.0 A	5%	-12 V	0.1 A	0.7 A	10%	40 W
PMP60-32	+5 V	1 A	5.0 A	5%	+15 V	0.4 A	2.3 A	5%	-15 V	0.1 A	0.7 A	10%	40 W
PMP60-36	+5 V	1 A	5.0 A	5%	+24 V	0.3 A	1.5 A	5%	+12 V	0.1 A	0.7 A	10%	40 W

- NOTES: 1. Ripple and noise: Peak to peak with 20 MHz bandwidth and 10 uF tantalum capacitor in parallel with a 0.1 uF ceramic capacitor at rated line voltage and load ranges.
2. The output voltages of a multiple output model may go outside of the stated tolerance when an output load current is out of stated limits. All models may be operated at no-load without damage.

MECHANICAL SPECIFICATIONS



NOTES:

- Dimensions shown in inches [mm]
- Tolerance 0.02 [0.5] maximum
- Weight: 600 grams (1.33 lbs.) approx
- Refer to Section titled "OPTIONAL OUTPUT CONNECTORS" for optional output connectors. Add the suffix assigned for a selected connector to a wanted model number, e.g. PMP60-12-B2, for ordering.
- To order a model with on / off switch, add suffix "S" to the model number, e.g. PMP60-12-B2-S

PIN CHART

MODEL \ PIN	1	2	3	4	5
PMP60-12 PMP60-13 PMP60-13-1 PMP60-14 PMP60-16 PMP60-17 PMP60-18	RETURN	RETURN	OUTPUT #1	RETURN	OUTPUT #1
PMP60-23	COMMON RETURN	COMMON RETURN	OUTPUT #1	N.C.	OUTPUT #2
PMP60-30 PMP60-31 PMP60-32 PMP60-36	COMMON RETURN	COMMON RETURN	OUTPUT #1	OUTPUT #3	OUTPUT #2