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 IEC320/C14 inlet to mate with interchangeable cord for world-wide use. All models meet EN55011 and FCC class B emission limits, and are designed for medical applications.

PMP60 SERIES

FEATURES

- 12 standard desktop models
- Single, dual or triple outputs
- Optional output connectors
- Optional on /off switch
- 100% burn-in
- Wide input range 90-264 VAC
- Input surge current protection
- Overvoltage protection
- Over-temperature protection
- Overcurrent protection
- Single output models compliant with CEC and Energy Star Efficiency level IV requirements
  * No load power consumption less than 0.5 W
  * Average active efficiency ≧85%
- Compliant with RoHS requirement
- IEC 60601-1-2 4th Edition EMC Compliant

SAFETY STANDARD APPROVALS

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

TÜV EN 60601-1

INPUT SPECIFICATIONS

Input voltage:	90-264 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 μA max. @ 264 VAC, 63 Hz
Touch current:	100 μA max. @ 264 VAC, 63 Hz

OUTPUT SPECIFICATIONS

Output voltage /current:	See rating chart.
Maximum output power:	See rating chart.
Ripple and noise:	66 mVp-p maximum on 3.3 V output, 100 mVp-p maximum on 5 V output and 1% maximum on other voltage outputs (12 V, 15 V ⋯, 48 V etc.)
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 ±0.04% /℃ 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℃ to +60℃(See Deating)
Storage temperature:	-40℃ to +85℃
Relative humidity:	5% to 95% non-condensing
Derating:	Derate from 100% at +40℃ linearly to 50% at +60℃

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 ms minimum at 110 VAC
Line regulation:	±0.5% maximum at full load
Inrush current:	50 A @ 115 VAC or 100 A @ 230 VAC, at 25℃ cold start
Withstand voltage:	5600 VDC from input to output (2 MOPP) 2100 VDC from input to ground (1 MOPP) 700 VDC from output to ground (To verify AC strength, get correct test method to avoid power supply damage.)
MTBF:	150,000 hours minimum at full load at 25℃ ambient, calculated per MIL-HDBK-217F
Ingress Protection:	IP22 Compliant

EMC Performance (IEC60601-1-2:2014)

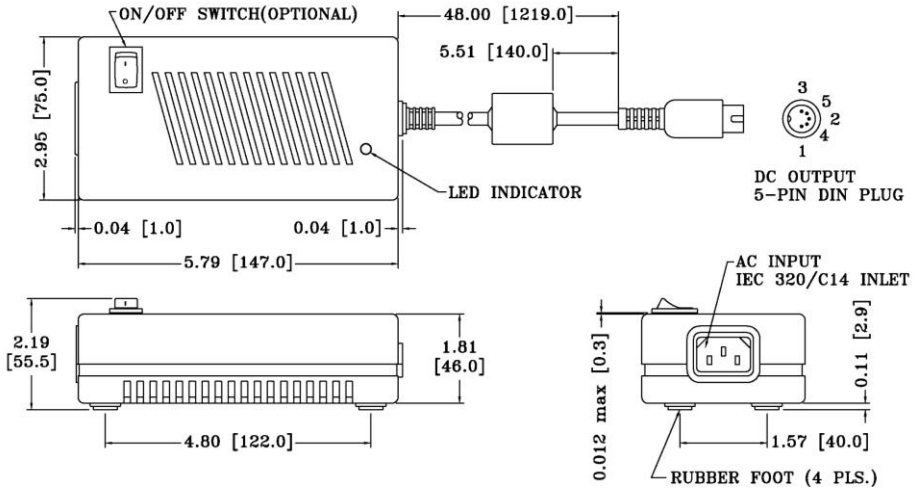
EN55011:	Class B conducted, class B radiated
FCC:	Class B conducted, class B radiated
VCCI:	Class B conducted, class B radiated
EN61000-3-2:	Harmonic distortion, class A and D
EN61000-3-3:	Line flicker
EN61000-4-2:	ESD, ±15 KV air and ±8 KV contact
EN61000-4-3:	Radiated immunity, 10 V/m
EN61000-4-4:	Fast transient/burst, ±2 KV
EN61000-4-5:	Surge, ±1 KV diff., ±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, 100% reduction for 10 ms

OUTPUT VOLTAGE/CURRENT RATING CHART

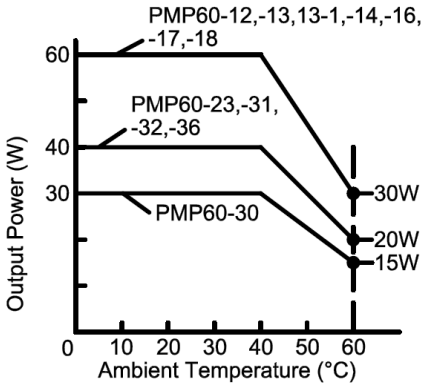
	Output #1				Output #2				Output #3				
Model	V1	Min. current	Max. current	Tol.	V2	Min. current	Max. current	Tol.	V3	Min. current	Max. current	Tol.	Max. Output Power
PMP60-12	11-13 V	0 A	5.46 A	±5%	(N/A)				(N/A)				60 W
PMP60-13	13-17 V	0 A	4.62 A	±5%	(N/A)				(N/A)				60 W
PMP60-13-1	17-21 V	0 A	3.53 A	±5%	(N/A)				(N/A)				60 W
PMP60-14	21-27 V	0 A	2.86 A	±5%	(N/A)				(N/A)				60 W
PMP60-16	27-33 V	0 A	2.23 A	±3%	(N/A)				(N/A)				60 W
PMP60-17	33-39 V	0 A	1.82 A	±3%	(N/A)				(N/A)				60 W
PMP60-18	46-50 V	0 A	1.31 A	±3%	(N/A)				(N/A)				60 W
PMP60-23	+5.0 V	1 A	5.0 A	±5%	+12 V	0.5 A	3.0 A	±5%	(N/A)				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	+5.0 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	+5.0 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	+5.0 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. 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.
2. 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



OUTPUT POWER DERATING CURVE



NOTES:
1. Dimensions shown in inches [mm]
2. Tolerance 0.02 [0.5] maximum
3. Weight: 600 grams (1.33 lbs.) approx.
4. Output connector is 5 pin DIN plug, mating with Switchcraft P/N 57GB5F receptacle or equivalent.
5. Refer to Section titled “OPTIONAL OUPUT 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.
6. 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 PMP60-14 PMP60-17 PMP60-13 PMP60-16 PMP60-18 PMP60-13-1	V1 Return	V1 Return	+V1	V1 Return	+V1
PMP60-23	Common Return	Common Return	V1	N.C.	V2
PMP60-30 PMP60-32 PMP60-36 PMP60-31	Common Return	Common Return	V1	V3	V2