



PROTEK POWER



Electronics

POWER PARTNERS

PMP60 Power Supply Series (30-60W)

Features:

- 12 standard desktop models
- Single, dual or triple outputs
- Optional output connectors
- Optional on/off switch
- 100% burn in
- Wide input range 90-264VAC
- Input surge current protection
- Overtoltage 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 0.5W
- Average active efficiency Compliant with RoHS requirement
- ICE 60601-1-2 4th Edition EMC Compliant



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.

| Model | Output 1 | | | | Output 2 | | | | Output 3 | | | | Max. Output Power |
|--------------|----------|-------------|-------------|-----|----------|-------------|-------------|-----|----------|-------------|-------------|------|-------------------|
| | V1 | Min Current | Max Current | Tol | V2 | Min Current | Max Current | Tol | V3 | Min Current | Max Current | Tol | |
| PMP60N1-12 | 11-13V | 0A | 5.46A | ±5% | | | | | | | | | 60W |
| PMP60N1-13 | 13-17V | 0A | 4.62A | ±5% | | | | | | | | | 60W |
| PMP60N1-13-1 | 17-21V | 0A | 3.53A | ±5% | | | | | | | | | 60W |
| PMP60N1-14 | 21-27V | 0A | 2.86A | ±5% | | | | | N/A | | | | 60W |
| PMP60N1-16 | 27-33V | 0A | 2.23A | ±3% | | | | | | | | | 60W |
| PMP60N1-17 | 33-39V | 0A | 1.82A | ±3% | | | | | | | | | 60W |
| PMP60N1-18 | 46-50V | 0A | 1.31A | ±3% | | | | | | | | | 60W |
| PMP60-23 | 5V | 1A | 5A | ±5% | 12V | 0.5A | 3A | ±5% | | | | | 40W |
| PMP60-30 | 3.3V | 1A | 6A | ±5% | 5V | 0.5A | 3A | ±5% | 12V | 0.1A | 0.7A | ±10% | 30W |
| PMP60-31 | 5V | 1A | 5A | ±5% | 12V | 0.5A | 3A | ±5% | -12V | 0.1A | 0.7A | ±10% | 40W |
| PMP60-32 | 5V | 1A | 5A | ±5% | 15V | 0.4A | 2.3A | ±5% | -15V | 0.1A | 0.7A | ±10% | 40W |
| PMP60-36 | 5V | 1A | 5A | ±5% | 24V | 0.3A | 1.5A | ±5% | 12V | 0.1A | 0.7A | ±10% | 40W |

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.



PROTEK POWER



Electronics

POWER PARTNERS

PMP60 Power Supply Series (30-60W)

| Specifications | |
|---|--|
| Safety Standards & EMC Specifications | |
| Safety Standard Approvals | UL ES 60601-1, CSA C22.2 No. 60601-1 File No. E178020 TÜV EN 60601-1 |
| EMI Standard | EN55011, FCC, and VCCI Class B (radiated and conducted) |
| EMC Performance | 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, 10V/m EN61000-4-4: Fast transient/burst, ± 2 KV EN61000-4-5: Surge, ± 1 KV diff., ± 2 KV com. EN61000-4-6: Conducted immunity, 10Vrms 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 |
| *Consult with TT Electronics for information on additional country safety approvals | |
| Input Specifications | |
| Input Voltage Range | 90 to 264VAC |
| Input Frequency Range: Input | 47 to 63Hz |
| Input Current | 1.22 A (rms) for 100 VAC 0.68 A (rms) for 240 VAC |
| Earth Leakage Current | 200 μ A max. @ 264VAC, 63Hz |
| Touch Current | 100 μ A max. @ 264 VAC, 63Hz |
| Output Specifications | |
| Ripple & Noise | 66 mVp-p maximum on 3.3 V output 100 mVp-p maximum on 5 V output 1% maximum on other voltage outputs (12 V, 15 V ..., 48 V etc.) |
| Oversupply 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 | $\pm 0.04\%/\text{°C}$ 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°C (See Derating) |
| Storage Temperature | -40°C to +85°C |
| Relative Humidity | 5% to 95% non-condensing |
| Temperature Derating | Derate from 100% at +40° linearly to 50% at +60° |
| General Specifications | |
| Switching Frequency | 20/40 KHz to 130 KHz |
| Efficiency | 85% minimum on single output models, 68-74% minimum on the others |
| Hold-up Time | 10ms minimum at 110 VAC |
| Line Regulation | $\pm 0.5\%$ maximum at full load |
| Inrush Current | 50 A @ 115 VAC or 100 A @ 230 VAC, at 25°C 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°C ambient, calculated per MIL-HDBK-217F Ingress Protection: IP22 Compliant |

General Note

All data sheets are subject to change without notice.

TT Electronics | Power Partners, Inc

43 Broad Street Suite B206, Hudson, MA 01749, USA. t: +1 (978) 567-9600



PROTEK POWER

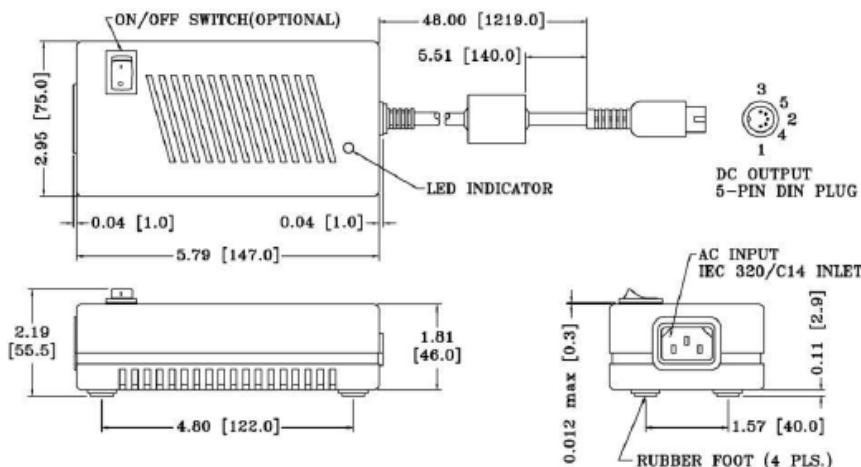


Electronics

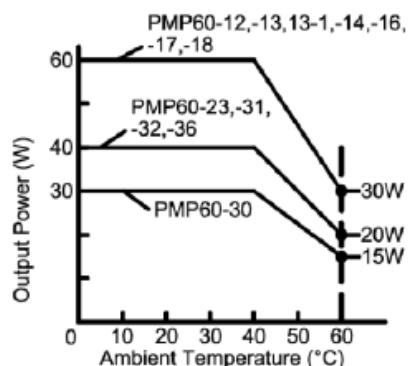
POWER PARTNERS

PMP60 Power Supply Series (30-60W)

MECHANICAL SPECIFICATIONS



OUTPUT POWER DERATING CURVE



NOTES:

- Dimensions shown in inches [mm]
- Tolerance 0.02 [0.5] maximum
- Weight: 600 grams (1.33 lbs.) approx.
- Output connector is 5 pin DIN plug, mating with Switchcraft P/N 57GB5F receptacle or equivalent.
- 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 PMP60-14 PMP60-17 | | | | | | |
| PMP60-13 PMP60-16 PMP60-13-1 PMP60-18 | 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 | |

General Note

All data sheets are subject to change without notice.