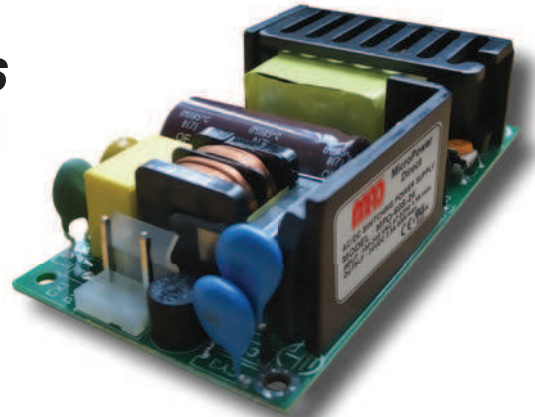


MPO-60S Series

Single Output, 60W Compact, Open Frame AC/DC Power Supplies



Key Features:

- 60W Output Power
- Universal 90-264 AC Input
- EN 60950 Approved (UL)
- Compact 2 x 4 In Package
- Eight Standard Models
- Meets EN 55022 B
- Meets EN 61000-4
- >200 kHour MTBF



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Electrical Specifications

Specifications typical @ +25°C, nominal input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

Input

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|-------------------------------|-------------------------------------|------|------|------|-------|
| Input Voltage Range | Universal | 90 | | 264 | VAC |
| | | 127 | | 373 | VDC |
| Input Frequency | | 47 | | 63 | Hz |
| Input Filter | Meets EN 55022 Class B; FCC Class B | | | | |
| Input Current | See Model Selection Guide | | | | |
| Inrush Current | Cold Start, 115 VAC | | | 32.0 | A Pk |
| | Cold Start, 230 VAC | | | 50.0 | |
| Safety Ground Leakage Current | 264 VAC | | | 3.5 | mA |

Output

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|--------------------------|---------------------------|------|-------|------|-------|
| Output Voltage/Current | See Model Selection Guide | | | | |
| Output Voltage Tolerance | See Note 1 | | ±1.0 | | % |
| Line Regulation | Vin = Min to Max | | ±0.5 | | % |
| Load Regulation | Iout = 10% to 100% | | ±1.0 | | % |
| Ripple & Noise (20 MHz) | See Note 2 | | ±1.0 | | % |
| Hold-Up Time | 115 VAC | 8 | | | mSec |
| | 230 VAC | 100 | | | |
| Temperature Coefficient | | | ±0.05 | | %/°C |
| Short Circuit Protection | Continuous (Autorecovery) | | | | |
| Overload Protection | See Note 3 | | 150 | | % |

General

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|-----------------------|--|-------|-------------------------------|------|------------------|
| Isolation Voltage | Input to Output | 3,000 | | | VAC |
| Isolation Resistance | 500 VDC | | 1,000 | | MΩ |
| Isolation Capacitance | | | 4,700 | | pF |
| EMC Compliance | Conducted | | EN 55022; EN 61000-3-2, -3 | | |
| | Electrostatic Discharge (ESD) | | IEC/EN 61000-4-2, -6, -8, -11 | | |
| | RF Field Susceptibility | | IEC/EN 61000-4-3 | | |
| | Electrical Fast Transients/Bursts On Mains | | IEC/EN 61000-4-4 | | |
| Switching Frequency | Surge | | | | IEC/EN 61000-4-5 |
| | Fixed | | 66 | | kHz |

Environmental

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|-----------------------------|--|------|------|------|-------|
| Operating Temperature Range | Ambient | 0 | +25 | +50 | °C |
| Storage Temperature Range | | -20 | | +85 | °C |
| Cooling | Free Air Convection (See Derating Curve) | | | | |
| Humidity | RH, Non-condensing | | | 95 | % |

Physical

| | | | | | |
|--------|---|--|--|--|--|
| Size | 4.00 x 2.00 x 1.20 Inches (101.60 x 50.08 x 30.48 mm) | | | | |
| Weight | 5.21 Oz (0.150 kg) | | | | |

Reliability Specifications

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|------------------|---|------|------|------|--------|
| MTBF | MIL HDBK 217F, 25°C, Gnd Benign | 200 | | | kHours |
| Safety Standards | UL 1950, EN 60950 | | | | |
| Vibration | Sinusoidal 50~500 Hz, 3.0 Grms, Period of 30 min each along X, Y & Z Axis | | | | |

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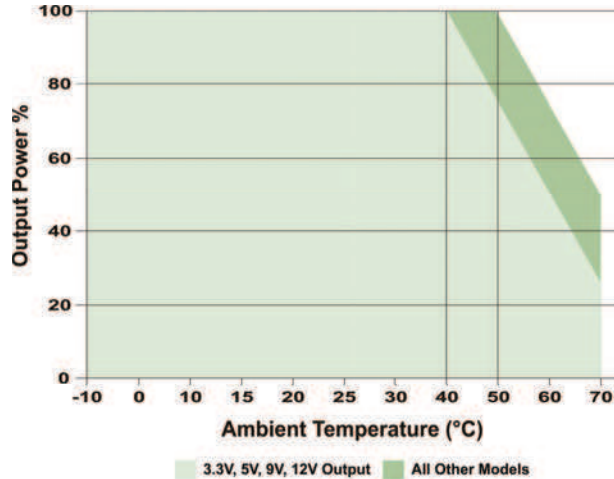
| Model Number | Input | | Voltage (VDC) | Output | | Max Output Power (W) | Max Output Capacitance (µF) | Efficiency (% Typ) |
|--------------|-------------|---------|---------------|-------------|------|----------------------|-----------------------------|--------------------|
| | Current (A) | | | Current (A) | | | | |
| | 115 VAC | 230 VAC | Rated | % Min. | | | | |
| MPO-60S-03 | 1.2 | 1.0 | 3.3 | 8.00 | 0.00 | 26 | 8,800 | 74 |
| MPO-60S-05 | 1.2 | 1.0 | 5.0 | 8.00 | 0.00 | 40 | 8,800 | 78 |
| MPO-60S-09 | 1.2 | 1.0 | 9.0 | 6.67 | 0.00 | 60 | 6,670 | 82 |
| MPO-60S-12 | 1.2 | 1.0 | 12.0 | 5.00 | 0.00 | 60 | 5,000 | 84 |
| MPO-60S-138 | 1.2 | 1.0 | 13.8 | 4.35 | 0.00 | 60 | 3,600 | 83 |
| MPO-60S-15 | 1.2 | 1.0 | 15.0 | 4.00 | 0.00 | 60 | 3,600 | 85 |
| MPO-60S-24 | 1.2 | 1.0 | 24.0 | 2.50 | 0.00 | 60 | 2,500 | 86 |
| MPO-60S-48 | 1.2 | 1.0 | 48.0 | 1.25 | 0.00 | 60 | 770 | 88 |

Other Models Are Available. Contact The Factory For Details

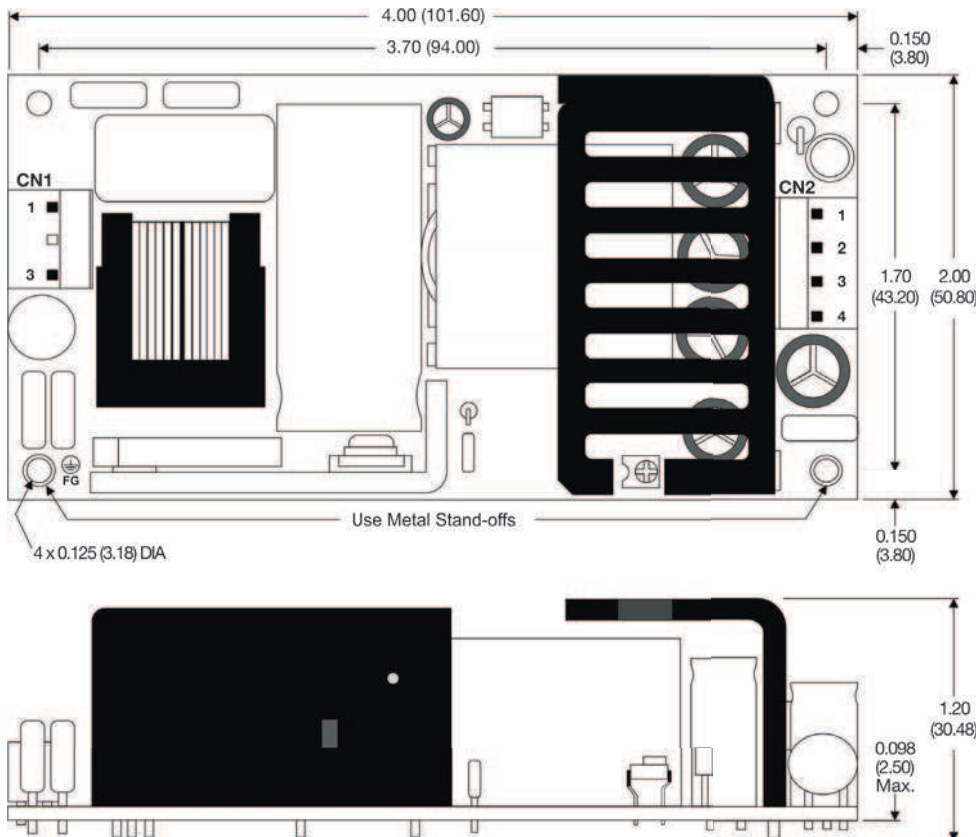
Notes:

1. Output voltage tolerance is measured at nominal input and 60% load.
2. Output ripple is measured at 20 MHz bandwidth using 0.1 µF and 10 µF capacitors connected in parallel as close to the power supply terminals as possible.
3. Overload protection is provided by an internal "hiccup" circuit. The unit recovers automatically when the fault condition is removed.
4. These units will operate at no load without damage. For most applications however, MPD recommends that a minimum load always be used. Contact the factory for more information.
5. Each unit includes an input fuse (250V/2A). Since this fuse is not field replaceable, it is recommended that an external fuse of the same size be used on the input of the power supply for protection.

Derating Curve



Mechanical Dimensions



Connections

Input Connector (CN1):

- Molex 5273-03A or equivalent (one pin removed)
- Mating Housing: Molex 5195-03 or equivalent
- Mating Terminal: Molex 5293 or equivalent

| Pin | Function |
|-----|------------|
| 1 | AC-Neutral |
| 2 | Removed |
| 3 | AC-Line |

Safety Ground:

The mounting holes marked "Use metal standoffs" should be connected to the system earth ground via metal spacers or a cable. The input side mounting hole marked "FG" provides the safety earth ground for the unit. This connection should be locked to prevent possible loosening. Connecting the output side mounting hole improves EMI.

Output Connector (CN2):

- Molex 5273-04A or equivalent
- Mating Housing: Molex 5195-04 or equivalent
- Mating Terminal: Molex 5293 or equivalent

| Pin | Function |
|-----|-------------------|
| 1 | +V _{OUT} |
| 2 | +V _{OUT} |
| 3 | -V _{OUT} |
| 4 | -V _{OUT} |

Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.02 (±0.50)



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