



# MicroPower Direct

Go Direct - **MicroPower Direct** - For Product, Performance and Price

## 350W AC-DC ACTIVE PFC SWITCHING POWER SUPPLY MPA350x SERIES

### FEATURES:

- ◆ Low leakage current 500uA max. at 240Vac or 200uA max. at 120Vac
- ◆ Providing Peak Power 600W within 500uS duty duration
- ◆ Power Factor Corrected to EN61000-3-2 class D
- ◆ Compact Size: 4.25W X 8L X 2H inches
- ◆ Approved to UL CUL TUV CE and CB
- ◆ Optional Top Cover & Built-in Fan
- ◆ Universal AC input



### PRODUCT SPECIFICATIONS:

**Input Voltage:** 47~63 Hz, 90 - 264 VAC full range.

**Input Current:** 5.5A at 90 VAC full load.

**Inrush Current:** 70A peak maximum (Measuring at 230 VAC and full load cold start).

**PFC:** Power factor correction meets EN61000-3-2 Class D.

**Fan Drive:** 12 VDC/160 mA offering to drive an external fan.

**Transient Response:** output voltage returns to within 1% in less than 2.5 mS for a 50% dynamic load peak. Does not exceed 5%.

**Overshoot:** Turn on-off overshoot does not exceed 5% nominal voltage.

**Efficiency:** 70% for 3.3V, 75% for 5V, 80% for 12V and 82% minimum for other outputs (Measuring at 230V and full load).

**Turn On Delay:** 1 second maximum at 120 VAC.

**Hold Up Time:** 20 mS minimum at 120 VAC and 80% of rated maximum load.

**Adjustability:** Output user adjustable  $\pm 5\%$  minimum.

**Input Circuit Protection:** 250V/6.3A fuse inserted.

**AC Under Voltage Protection:** Power shuts down if  $V_{in}$  goes under  $79V \pm 2V$ . Automatic recovery once  $V_{in}$  goes back over  $86V \pm 3V$ .

**Over Load Protection:** 110-135% hiccup mode, auto-recovery.

**Short Circuit Protection:** Continuous with auto-recovery.

**Over Voltage Protection:** Unit latches down if the output exceeds 130%. To reset, recycle the AC input.

**Over-Temperature Protection:** Output voltage drops if the operating ambient temp exceeds 85°C. Auto-recovery.



**Power Supply On:** Green LED designated as LED 1 on the PCB.

**Power Good:** Power on signal designated as PG on PCB goes high 100-500 mS after the output reaches the regulation limit. It goes low at least 1 mS before loss of regulation.

**Operating Temperature:** 0°C to +50°C

**Storage Temperature:** -20°C to +85°C

**Operating Humidity:** 5% to 90% RH, Non-condensing

**Storage Humidity:** 5% to 95% RH, Non-condensing

**Vibration:** Frequency 5 to 50 Hz, acceleration  $\pm 7.35$

M/(SxS) on X, Y and Z Axis

**EMC Standards:** CISPR 22 / EN55022 class B, EN61000-3-2,3, EN61000-4-2,3,4,5,6,8,11, EN55024 CE Marked.

**Safety Regulation:** Approved to UL60950, CSA C22.2 No. 60950, TUV EN60950 and CB certificate available.

**Leakage Current:** 500 uA max. @ 240 VAC input. 200 uA max. @ 120VAC input.

**HI-POT Test:** 3 Sec 1500 VAC input line to chassis; 3000 VAC primary to secondary; 1500 VAC Primary to core.

**Grounding Test:** Apply 25A from the ground pin to the furthest earth connection point. Max. resistance 0.1ohm.

**Warranty:** 2 years

**MTBF:** 100000 Hrs (according to MIL-HBK-217F) at 30°C

**Cooling:** 30 CFM required to achieve full ratings

**Burn in:** Applying full load at 230 VAC input in 45°C  $\pm 5^\circ$ C burn-in room for 1 hour.

**Enclosure:** U-case: 8 X 4.25 X 2 inches. U-case with FAN: 8 X 4.25 X 2.5 inches.

**Weight:** Maximum weight is 800g.



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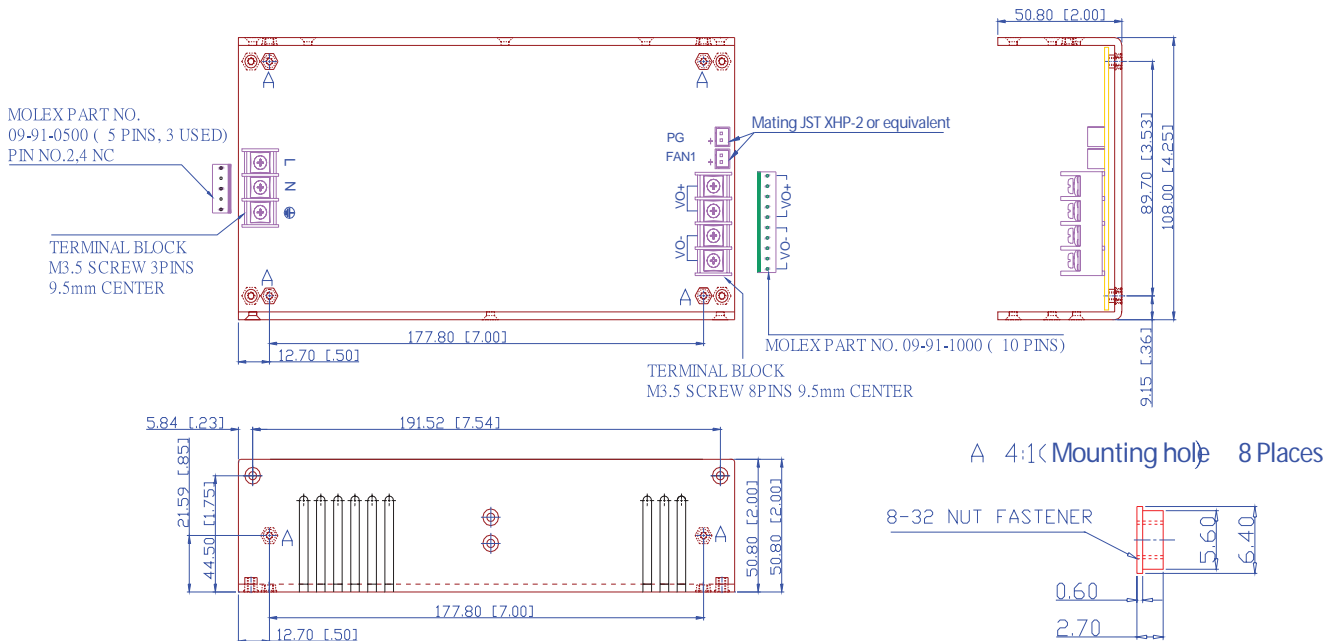
## OUTPUT VOLTAGE / CURRENT RATING CHART: Measured at output power connector.

Model	Output voltage		Max. Output current		Regulation	Ripple & noise
	Present	Range	Convection	30CFM		
MPA350x-03	3.3V	3-4V	30A	60A	±1%	±1%
MPA350x-05	5V	5-6V	30A	60A	±1%	±1%
MPA350x-12	12V	12-15V	19.16A	29.16A	±1%	±1%
MPA350x-15	15V	12-15V	19.16A	29.16A	±1%	±1%
MPA350x-18	18V	16-21V	14.37A	21.87A	±1%	±1%
MPA350x-24	24V	22-30V	10.45A	15.9A	±1%	±1%
MPA350x-36	36V	31-41V	7.41A	11.29A	±1%	±1%
MPA350x-48	48V	42-53V	5.47A	8.33A	±1%	±1%
MPA350x-54	54V	54-60V	4.25A	6.48A	±1%	±1%

- \* **MPA350x-00z** series are designated as: x = U (U-channel), C(U-channel with Cover) or F(Cover with Internal fan).  
Z = T(Terminal Strips) or M(Molex connectors).
- \* Ripple & noise measured from 10 kHz to 20 Mhz at output terminals with parallel 0.1μF ceramic and 22μF electrolytic capacitors.
- \* Providing peak power to 600W within 500 uS for all models, longer duty duration need contact manufacture in advance.
- \* 1% minimum load is required to maintain the ripple and regulation.
- \* Output is fully isolated.
- \* Models provided with the optional cover (**MPA350C**), require 30 CFM forced air flow to achieve max rating.

## OUTLINE DRAWING: Overall Size: 8(L) x 4.25(W) x 2(H)inches; Weight: Maximum weight is 800g

Type A: U-Chassis only

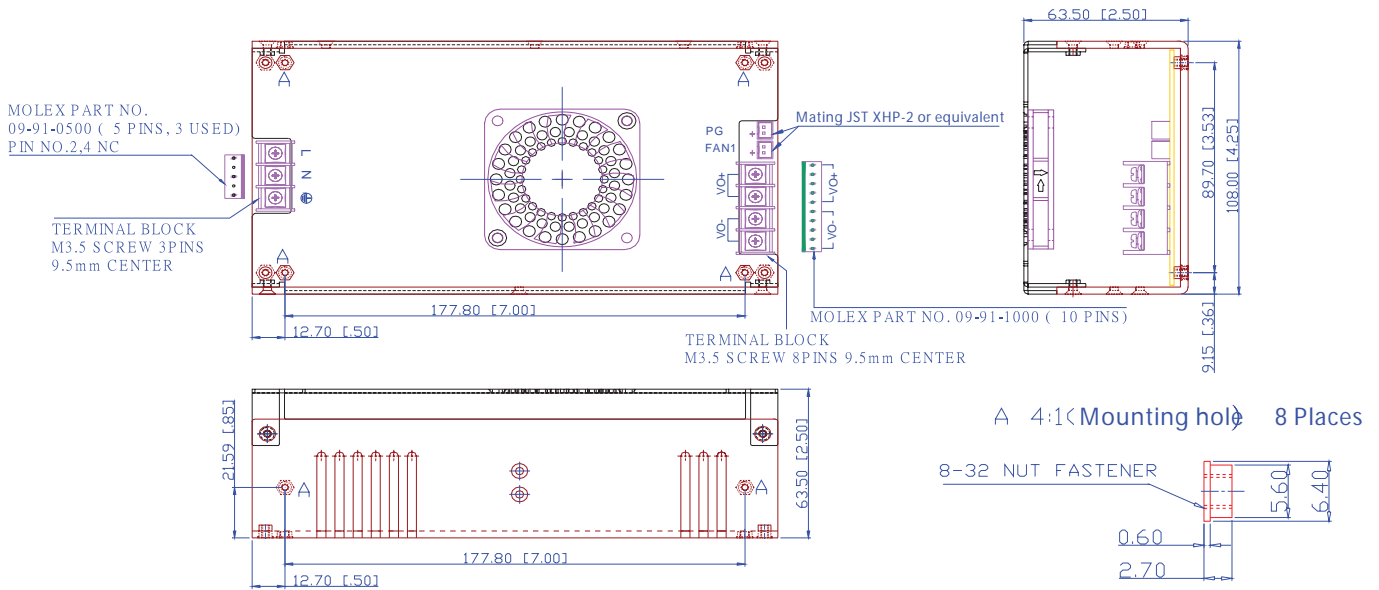




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## Type B: U-Chassis + Top Cover with Built-in Fan



### Notes:

**AC Input Connector:** Howder 6-32. 3 pin Terminal block 9.5MM Center (HI-201-3P) or Molex Part No. 09-91-0500 or equivalent (5 pin, 3 used). Pin1: FG; Pin2: Neutral; Pin3: Line.

**Output Connector:** Howder 6-32. 4 pin Terminal block 9.5MM Center (HI-201-4P) or Molex Part No. 09-91-1000 or equivalent (10 pins)

**Output Pin Assignment: (See table in right)**

**FAN and PG Connector:** Mating JST XHP-2 or equivalent (CHYAO SHIUNN JS-2001-02)

**Mounting Inserts:** 8 Places 8-32 flush nut, screws must not protrude into unit by more than 4mm see outline drawing for location.

Howder	Molex
VO- : Pins 1-2	VO- : Pins 1-5
VO+ : Pins 3-4	VO+ : Pins 6-10



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