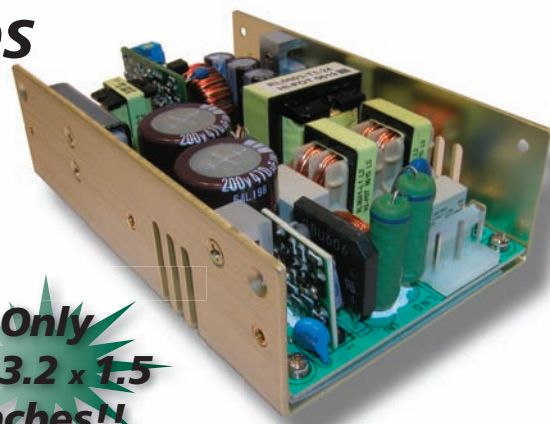


MPA250 Series

Smallest 1U 250W Single Output Power Factor Corrected AC/DC Power Supplies



**Only
5 x 3.2 x 1.5
Inches!!**

Key Features:

- Smallest 1U 250W Supply
- PFC to EN61000-3-2 "A"
- UL, cUL, TUV Approvals
- CE Certified
- FCC Class B Emissions
- 2 - 60 V Output Voltages
- Auto Selectable AC Input
- 600W Peak Power
- Four Mechanical Options



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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	Autoranging	90		132	VAC	
		180		264		
Input Frequency		47		63	Hz	
Input Current, Full Load	100 - 120 VAC		6		A	
	200 - 240 VAC		3			
Inrush Current, Cold Start	110 VAC			35	A	
	220 VAC			70		
Leakage Current (Note 1)	240 VAC		1.5		mA	
Power Factor Correction	Meets EN61000-3-2 Class A					
Input Protection	T8A/250V Fuse					
Output						
Parameter	Conditions	Min.	Typ.	Max.	Units	
Output Voltage Adjustment	By Trim Pot		±5.0		%	
Output Regulation (Note 2)			±1.0		%	
Hold Time	110 VAC, 80% Load		20		mSec	
Ripple & Noise (20 MHz) (Note 3)	See Model Selection Guide					
Overload Protection	Power Limit	130		160	%	
Over Voltage Protection	>130% of Rated Output Voltage. Recycle AC Input.					
Over Temperature Protection						
Temperature Coefficient			±0.04		%/°C	
Transient Recovery Time (Note 4)	50% Load Change		2.5		mS	
Transient Response Deviation			5		%	
Overshoot/Undershoot	At Turn On/Off			±5.0	%	
Turn On Delay	120 VAC			1	S	
Output Short Circuit	Continuous With Autorecovery					
General						
Parameter	Conditions	Min.	Typ.	Max.	Units	
Isolation Voltage (Note 5)	Input - Output	3,000			VAC	
	Input - FG (Frame Ground)	1,500				
	Primary - Core	1,500				
Switching Frequency	Fixed		24		kHz	
Interface Signals						
Power Supply On	Green LED (LED1) on the PCB					
Power Good Signal	PG on CN1. Goes TTL high 100 to 500 mS after regulation. Goes low at least 1 mS before the loss of regulation. Will sink 100 mA.					
Remote On/Off	RMSW on CN1. A TTL low signal inhibits the output. Hiccup mode.					
Environmental						
Parameter	Conditions	Min.	Typ.	Max.	Units	
Operating Temperature Range	Ambient	0	+25	+50	°C	
Output Derating	2.5%/ °C from +50 °C to + 70 °C					
Storage Temperature Range		-20		+85	°C	
Cooling	See Model Selection Guide					
Operating Humidity	RH, Non-condensing			90	%	
Reliability Specifications						
Parameter	Conditions	Min.	Typ.	Max.	Units	
MTBF	MIL HDBK 217F, 30°C, Gnd Benign	100			kHours	
Safety Standards	UL 60950; CSA C22.2 No. 60950; TUV EN60950; CB Report (IEC 60950)					
EEMI Compliance	Compliance to EN55022 (CISPR22) Class B; EN61000-3-2,3					
EMS Immunity Compliance	EN6100-4-2,3,4,5,6,8,11; EN55024; CE Marked (LVD)					

Model Selection Guide

Model Number	Output Voltage		Max. Output Current (Note 7)		Ripple & Noise	Efficiency (Note 7)
	Factory PreSet	Range	16 CFM (U/w Air, E, F)	Convection (U)		
MPA250x-05z	5 VDC	2.0 - 5.0 VDC	40.00A	20.00A	50 mV p-p	75%
MPA250x-09z	9 VDC	6.0 - 10.0 VDC	25.00A	13.50A	±1% p-p	80%
MPA250x-12z	12 VDC	11.0 - 13.8 VDC	20.83A	11.25A	±1% p-p	83%
MPA250x-15z	15 VDC	14.0 - 15.5 VDC	16.66A	9.00A	±1% p-p	83%
MPA250x-18z	18 VDC	16.0 - 20.0 VDC	13.88A	7.50A	±1% p-p	83%
MPA250x-24z	24 VDC	21.0 - 26.0 VDC	10.41A	5.62A	±1% p-p	83%
MPA250x-28z	28 VDC	27.0 - 34.0 VDC	8.92A	4.82A	±1% p-p	83%
MPA250x-36z	36 VDC	35.0 - 42.0 VDC	6.94A	3.75A	±1% p-p	83%
MPA250x-48z	48 VDC	43.0 - 50.0 VDC	5.20A	2.81A	±1% p-p	83%
MPA250x-54z	54 VDC	51.0 - 60.0 VDC	4.62A	2.50A	±1% p-p	83%

Notes:

- Models are available with leakage current specified as low as 500 μ A (at 240 VAC) / 300 μ A (at 120 VAC). Contact the factory for details.
- Output regulation includes line & load.
- Ripple & noise is measured from 10 Hz to 20 MHz. Measurement connection to the unit is made with a 0.1 μ F ceramic capacitor and a 22 μ F electrolytic capacitor connected in parallel.
- Transient recovery is measured to within a 1% error band for a load step change of 50% to 100%.
- Isolation specifications are production HI-Pot tested for 3 seconds.
- The full output range (see table above) is covered in the safety agency certification.

Standard models are factory set to the "Preset" voltage. This may be set to other levels within the range without affecting the agency certification. For more information, contact the factory.

- Output current is given for the factory preset voltage. With the exception of the "05" & "09" output models, the maximum continuous output power level is 250W (with 16 CFM), convection cooled or 135W convection cooled. For more information, contact the factory.
- Units will provide peak power of 600W for 500 μ s. For units capable of longer durations, contact the factory.
- A 1% minimum load is required to maintain regulation and ripple specifications.

Input Connector CN3: Mating Molex Part No. 09-91-0500 or equivalent (5 pin, 3 used) PCB is Labeled: L = Line; N = Neutral; G = Chassis Ground. Mating Pins: Molex Engineering Series 2478, 2578, 8818 or Howder M3. 3 pin Terminal block 6.35MM Center (HD-601-3P).

Output Connector CN2: Mating Molex Part No. 09-91-0600. Mating Pins: Molex Engineering Series 2478, 2578, 8818 or Howder M3. 3 pin Terminal block 6.35MM Center (HD-601-4P) Mating JST Part No. XHP-2 or equivalent (CHYAO SHIUNN JS-2001-02).

Output Pin Assignment:

Howder	Molex
Pins 1 ~ 2: V+	Pins 1 ~ 3: V+
Pins 3 ~ 4: V-	Pins 4 ~ 6: V-

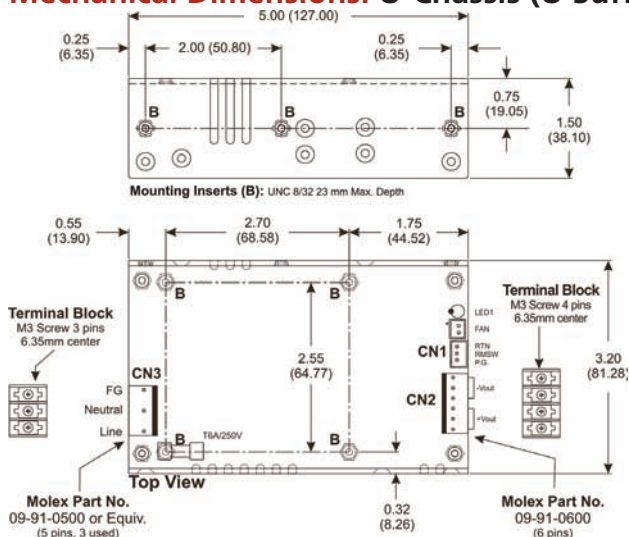
Logic Signal Connector CN1: Mating JST XHP or equivalent (CHYAO SHIUNN JS-21001-3). Mating Pins: JST SXH-002T-P0.6 for AWG 30 to 26.

Logic Signal Pin Assignment:

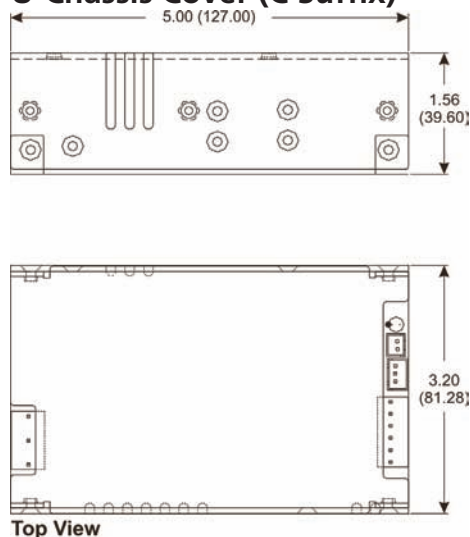
Pin	Function
1	Power Good
2	Remote On/Off (RMSW)
3	Return

Fan Drive Connector (FAN): 12 VDC/300 mA is available to drive an external fan. Mating JST Part No. XHP-2 or equivalent (CHYAO SHIUNN JS-2001-02).

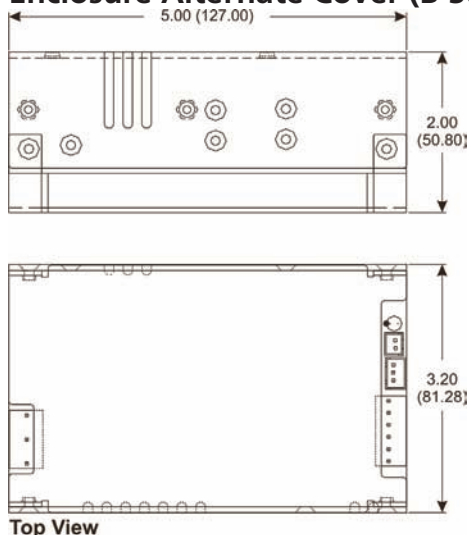
Mechanical Dimensions: U-Chassis (U Suffix)



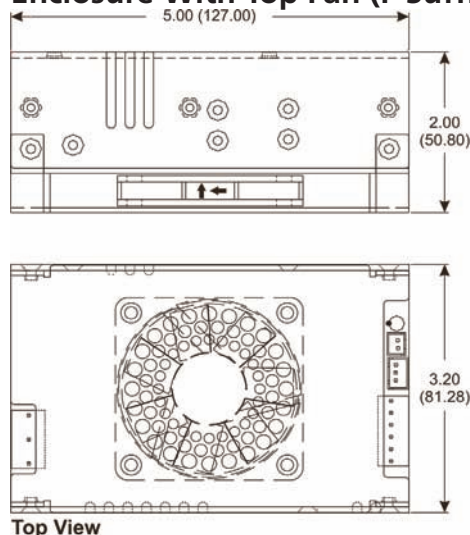
U-Chassis Cover (C Suffix)



Enclosure Alternate Cover (B Suffix)



Enclosure With Top Fan (F Suffix)



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MPA250X-YYZ

Mechanical Configuration
 U = U-Chassis
 C = U-Chassis with Cover
 B = U-Chassis with Alt. Cover
 F = Enclosure With Top Fan

Output Voltage Selection
 (i.e. 05 = 5 VDC, 24 = 24 VDC, etc)

Input/Output Connector Type
 T = Terminal Block
 M = Molex