

AC-DC Enclosed Power Supply **multicomp** PRO

350W

**RoHS
Compliant**

Features

- Universal 85 to 305V AC or 120 to 430V DC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Semi-potted process, fanless design
- Operating ambient temperature range: -40°C to +85°C
- High efficiency, active PFC
- 150% peak load output for 1 second
- High I/O isolation test voltage up to 4000V AC
- Output short circuit, over-current, over-voltage, over-temperature protection
- Operating altitude up to 5000m
- Safety according to EN61558, EN60335
- 3 years warranty



MPMF350-23BxxUH-C series is one of enclosed fanless semi-potted ultra narrow AC-DC switching power supply, it is suitable for industrial and outdoor occasions where the application environment is relatively harsh. It features 305V AC operating conditions, universal AC input and at the same time accepts DC input voltage, cost-effective, high PF value, high efficiency, high reliability, 150% peak load output and operating altitude up to 5000m. These converters offer excellent EMC performance and meet EN/UL/BS EN62368, EN60335, EN61558, GB4943 standards and they are widely used in areas of industrial, lighting, electricity, security, telecommunications, smart home etc.

Selection Guide

Part Number	Rated Output Power (W)*	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range (V)	Efficiency at 230V AC (%) Typ.	Room Temperature Max. Capacitive Load (uF)	Low Temperature Max. Capacitive Load (uF)
MPMF350-23B05UH-C	300	5V/60A	4.5-5.5	90	12000	6000
MPMF350-23B12UH-C	350.4	12V/29.2A	11.4-12.6	92	10000	4000
MPMF350-23B24UH-C	350.4	24V/14.6A	22.8-25.2	94	8000	3000
MPMF350-23B28UH-C	350	28V/12.5A	26.6-29.4	94	7000	2500
MPMF350-23B36UH-C	351	36V/9.75A	34.2-37.8	94	6000	2000
MPMF350-23B48UH-C	350.4	48V/7.32A	45.6-50.4	94	4000	1000

Note: 1. *Under any conditions, the total power of the product should not exceed the rated output power, and the output current should not exceed the rated output current;
2. *Use suffix "C" for terminal with protective cover and 12V, 24V output.

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Voltage Range	AC input		85	--	305	V AC
	DC input		120		430	V DC
Input Voltage Frequency			47		63	Hz
Input Current	115V AC		--		4	A
	230V AC				2	
Inrush Current	115V AC	Cold start			16.7	
	230V AC				42.3	
Power Factor	115V AC	Full load	0.98	--	--	
	230V AC		0.98			
Leakage Current	240V AC		<0.5mA			
Hot Plug	--		Unavailable			

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Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit		
Output Voltage Accuracy	Full load range	5V	--	±2	--			
		12V/24V/28V/36V/48V		±1				
Line Regulation	Rated load	5V		±0.5				
		12V/24V/28V/36V/48V		±0.3				
Load Regulation	0% - 100% load	5V		±1				
		12V/24V/28V/36V/48V		±0.5				
Ripple & Noise*	20MHz bandwidth (peak-to-peak value), 25°C	5V/12V		--			200	mV
		24V/28V/36V/48V					240	
Temperature Coefficient				±0.03		%/°C		
Minimum Load	Room temperature, full load, 115V AC/230V AC		0	--	--	%		
Hold-up Time			12			ms		
Short Circuit Protection			Hiccup, continuous, self-recover					
Over-current Protection	Room temperature, high temperature		110% - 200% I _o , the protection lasts for 1s, self-recovery after the abnormality is removed					
	Low temperature		>110% I _o , the protection lasts for 1s, self-recovery after the abnormality is removed					
Over-voltage Protection	5V		≤6.5V DC (Output voltage hiccup)					
	12V		≤15.6V DC (Output voltage hiccup)					
	24V		≤31.2V DC (Output voltage hiccup)					
	28V		≤35V DC (Output voltage hiccup)					
	36V		≤46.8V DC (Output voltage hiccup)					
	48V		≤62.4V DC (Output voltage hiccup)					
Over-temperature Protection			Output voltage turn off, self-recover after the temperature drops					
Note: *The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor, please refer to Enclosed Switching Power Supply Application Notes for specific information.								

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General Specifications

Item		Operating Conditions			Min.	Typ.	Max.	Unit	
Isolation	Input - \perp	Electric strength test for 1min., leakage current <5mA			2000	--		V AC	
	Input - output				4000				
	Output - \perp				1500				
Insulation	Input - \perp	Ta= 25 ± 5°C			50	--		MΩ	
	Input - output	Relative humidity: < 95%RH, no condensation							
	Output - \perp	Test voltage: 500V DC							
Operating Temperature					-40	--	+85	°C	
Storage Temperature					-40		+85		
Storage Humidity		Non-condensing			10		95	%RH	
Operating Humidity					20	90			
Power Derating	Operating temperature derating	With aluminum plate*	230V AC	Others	+55°C to +85°C	2.33	--	% / °C	
					+55°C to +70°C	3.33			
			Without aluminum plate	5V	Others	+70°C to +85°C			1.33
						+55°C to +70°C			2
						+70°C to +85°C			1.33
						+55°C to +85°C			1.33
				110V AC		+50°C to +70°C			1
		Input voltage derating		85V AC -100V AC					2
Safety Standard					UL62368-1, GB4943.1, IS13252 (Part1) safety approved & EN62368-1, BS EN62368-1 (Report); Design refer to EN61558-1, EN60335-1				
Safety Class					CLASS I				
MTBF		MIL-HDBK-217F@25°C			≥300,000 h				
Note: *In order to optimize the heat dissipation performance, when the aluminum plate is used for auxiliary heat dissipation, please note: 1. The size of the aluminum plate is 450mm × 450mm × 3mm; 2. The surface of the aluminum plate must be coated with thermal grease; 3. The product must be tightly attached to the aluminum plate.									

Mechanical Specifications

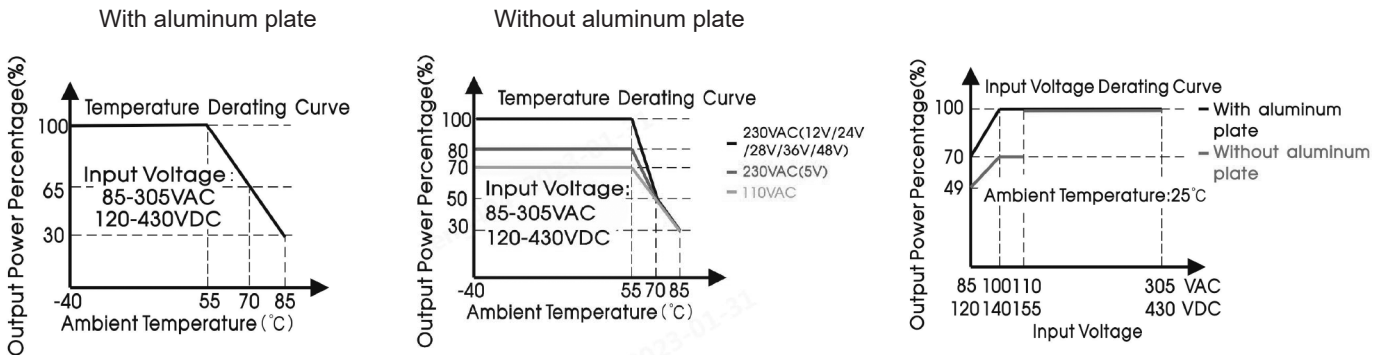
Case Material	Metal (AL6063, SGCC)
Dimensions	220mm × 62mm × 31mm
Weight	680g (Typ.)
Cooling Method	Free air convection

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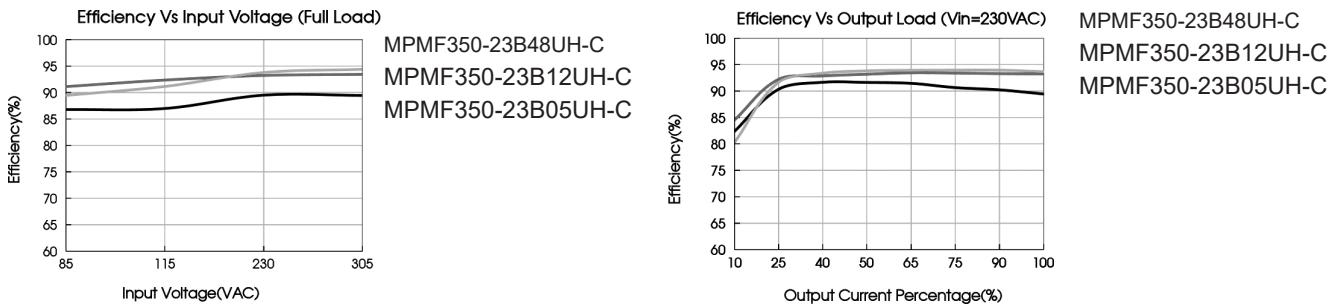
Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32 EN55032	CLASS B	
	RE	CISPR32 EN55032	CLASS B	
	Harmonic current	IEC/EN61000-3-2	CLASS A	
	Voltage flicker	IEC/EN61000-3-3		
Immunity	ESD	IEC/EN61000-4-2	Contact $\pm 6\text{KV}$ /Air $\pm 8\text{KV}$	perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	$\pm 2\text{KV}$	perf. Criteria A
	Surge	IEC/EN61000-4-5	Line to line $\pm 2\text{KV}$ /line to ground $\pm 4\text{KV}$	perf. Criteria A
	CS	IEC/EN61000-4-6	10 Vr.m.s	perf. Criteria A
	Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11	0%, 70%	perf. Criteria B
	Intercom interference test	MS-SOP-DQC-007		perf. Criteria B

Product Characteristic Curve



- Note: 1. With an AC input voltage between 85-100V AC and a DC input between 120-140V DC the output power must be derated as per the temperature derating curves;
2. This product is suitable for applications using natural air cooling; for applications in closed environment please consult FAE.

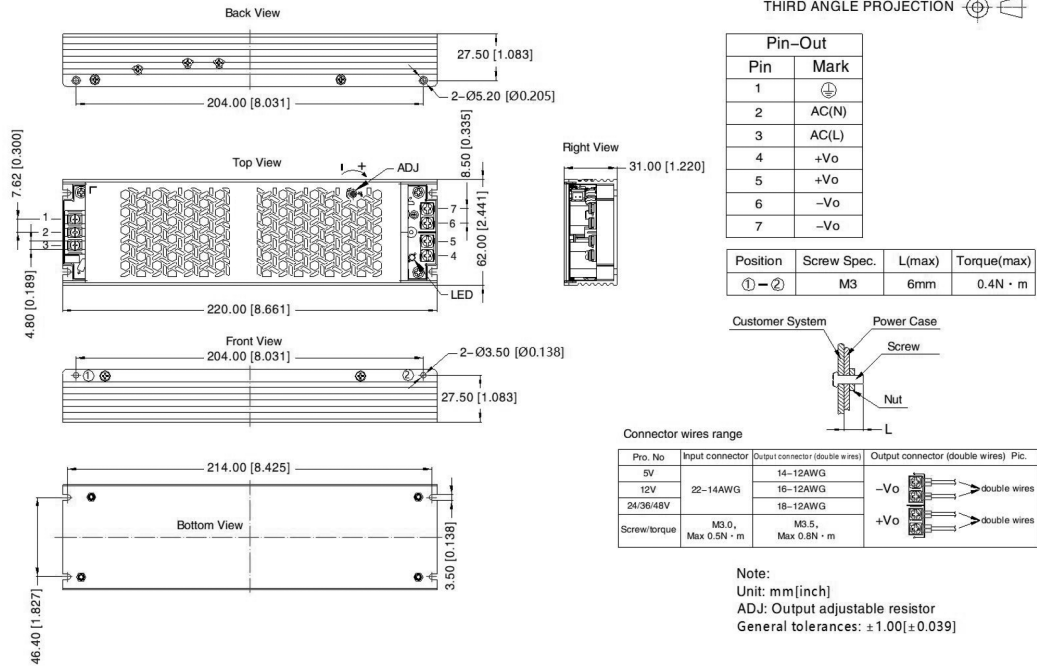


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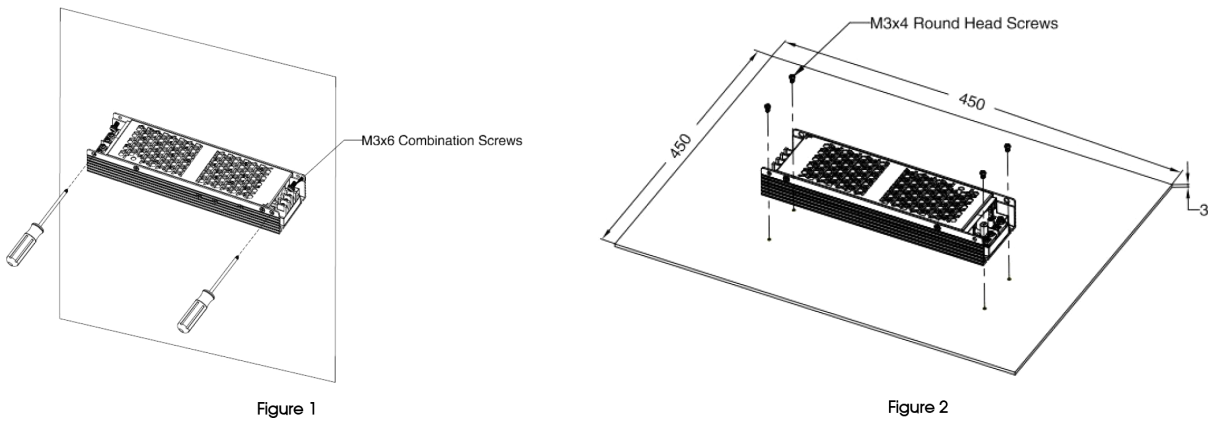
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Dimensions and Recommended Layout



Installation Diagram



- Note: 1. Figure 1 is a schematic diagram of side installation, install with M3 × 6 combination screws, derating refer to without aluminum plate curve;
2. Figure 2 is the schematic diagram of the bottom installation, install with M3 × 4 round head screws, it is necessary to apply thermal grease on the bottom of the product, derating refer to with aluminum plate curve.

Dimensions : Millimetres

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Notes:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25°C, humidity<75%RH with nominal input voltage and rated output load;
2. The room temperature derating of 3.5°C/1000m is needed for operating altitude greater than 2000m;
3. In order to improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability;
4. The out case needs to be connected to PE (⊕) of system when the terminal equipment in operating;

Part Number Table

Description	Part Number
Enclosed Power Supply, 5V DC, 60A	MPMF350-23B05UH-C
Enclosed Power Supply, 12V DC, 29.2A	MPMF350-23B12UH-C
Enclosed Power Supply, 24V DC, 14.6A	MPMF350-23B24UH-C
Enclosed Power Supply, 28V DC, 12.5A	MPMF350-23B28UH-C
Enclosed Power Supply, 36V DC, 9.75A	MPMF350-23B36UH-C
Enclosed Power Supply, 48V DC, 7.32A	MPMF350-23B48UH-C

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