

AC-DC Enclosed Power Supply 200W **multicomp** PRO

**RoHS
Compliant**

Features



- Universal 85 - 305VAC or 120 - 430VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Semi-potted process, fanless design
- Operating ambient temperature range: -40°C to +70°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
- 3 years warranty

MPMF200-23Bxx UH-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 305VAC 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 UL/EN/BS EN 62368, EN60335, EN61558, GB4943 standards and they are widely used in areas of industrial, lighting, electricity, security, telecommunications, smart home etc.

Selection Guide

Part Number	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range (V)	Efficiency at 230V AC (%) Typ.	Max. Capacitive Load (μF)
MPMF200-23B05UH-C	200	5V/40A	4.5-5.5	91	10000
MPMF200-23B12UH-C	200.4	12V/16.7A	11.4-12.6	93	8000
MPMF200-23B24UH-C	201.6	24V/8.4A	22.8-25.2	94	5000
MPMF200-23B28UH-C	200.2	28V/7.15A	26.6-29.4	94	4000
MPMF200-23B36UH-C	201.6	36V/5.6A	34.2-37.8	94	3000
MPMF200-23B48UH-C	201.6	48V/4.2A	45.6-50.4	94	2000

Note: *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		--	2.1	2.5	A	
	230V AC			1	1.2		
Inrush Current	115V AC			Cold start	40		--
	230V AC				80		
Power Factor	115V AC			Full load	0.98	--	
	230V AC				0.95		
Leakage Current	240V AC		<0.5mA				
Hot Plug	--		Unavailable				

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



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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		--			200	mV
		12V/24V/28V/36V					240	
		48V					300	
Temperature Coefficient							±0.03	
Minimum Load			0	--	--	%		
Hold-up Time	115VAC/230V AC		10	--	--	ms		
Short Circuit Protection	Recovery time <10s after the short circuit disappear.	5V	Hiccup mode, constant current (200%Io-300%Io) works 200ms, turn off 10s, continuous, self-recover					
		12V/24V/36V/48V	Hiccup mode, constant current (200%Io-300%Io) works 1s, turn off 10s, continuous, self-recover					
Over-current Protection	230VAC, rated load	Normal temperature, high temperature	105% - 200% Io, delay protection, delay time 1s, self-recovery after the abnormality is removed					
		Low temperature	≥105%Io, delay protection, delay time 1s, self-recovery after the abnormality is removed					
Over-voltage Protection	5V		<6.3V (Hiccup, self-recover)					
	12V		<16V (Hiccup, self-recover)					
	24V		<35V (Hiccup, self-recover)					
	28V		<35V (Hiccup, self-recover)					
	36V		<47V (Hiccup, self-recover)					
	48V		<60V (Hiccup, self-recover)					
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 	Electric Strength Test for 1min., leakage current<10mA		2000	--	--	V AC	
	Input - output	Electric Strength Test for 1min., leakage current<5mA		4000				
	Output - 			1250				
Insulation	Input - 	Ambient temperature: 25 ± 5°C		100		--	--	MΩ
	Input - output	Relative humidity: < 95%RH, no condensation						
	Output - 	Test voltage: 500V DC						
Operating Temperature				-40	--	+70	°C	
Storage Temperature				-40	--	+85		
Storage Humidity		Non-condensing		10	--	95	%RH	
Operating Humidity				20	--	90		
Power Derating	Operating temperature derating	With aluminum plate*	-40°C to -30°C	4	--	--	% / °C	
			+50°C to +70°C	2				
		Without aluminum plate	230V AC, others	-40°C to -30°C				4
				+50°C to +70°C				3
			230VAC, 5V & 100V AC, others; 80%lo	-40°C to -30°C				2
				+50°C to +70°C				2
		100V AC, 5V, 60%lo	+50°C to +70°C	1				
Input voltage derating		85V AC -100V AC		2	--	--	%/V AC	
Safety Standard				GB4943.1, UL62368-1, 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				

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

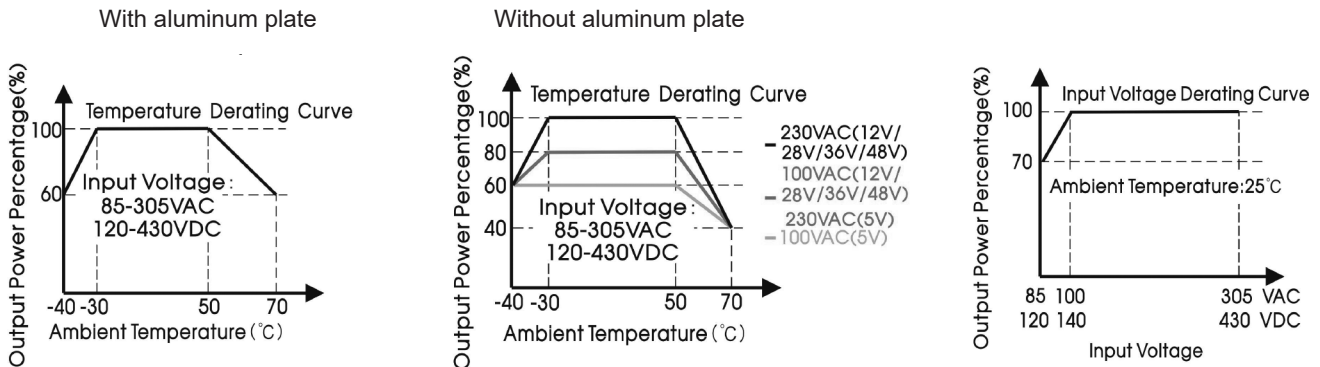
Case Material	Metal (AL6063, SGCC)
Dimensions	194mm × 55mm × 26mm
Weight	430g (Typ.)
Cooling Method	Free air convection

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Electromagnetic Compatibility (EMC)

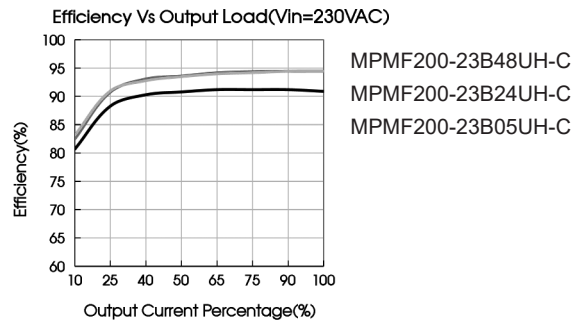
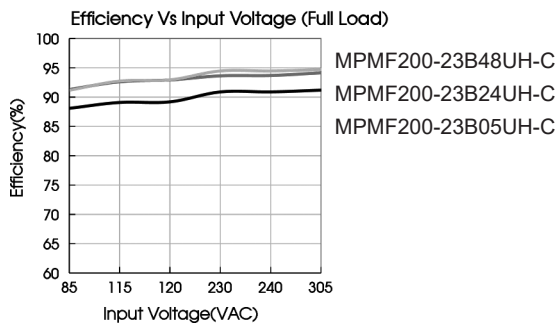
Emissions	CE (Input port)	CISPR32 EN55032 150K - 30MHz	CLASS B
	RE	CISPR32 EN55032 30MHz - 2GHz	CLASS B
	Harmonic current	IEC/EN61000-3-2	CLASS A, CLASS C and CLASS D
Immunity	ESD	IEC/EN 61000-4-2 Contact $\pm 6KV$ /Air $\pm 8KV$	perf. Criteria A
	RS	IEC/EN 61000-4-3 10V/m	perf. Criteria A
	EFT	IEC/EN 61000-4-4 $\pm 4KV$	perf. Criteria A
	Surge	IEC/EN 61000-4-5 line to line $\pm 2KV$ /line to PE $\pm 4KV$	perf. Criteria A
	CS	IEC/EN61000-4-6	0.15 - 80MHz 10 Vr.m.s
	Voltage dip, short interruption and voltage variation	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.

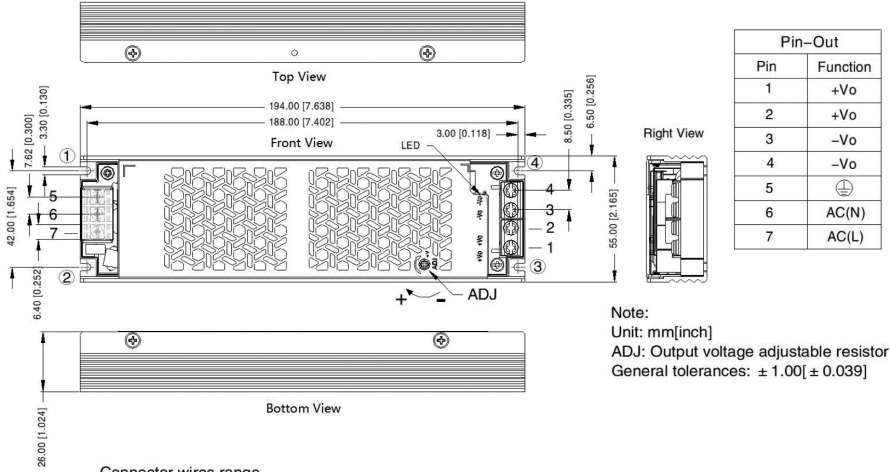


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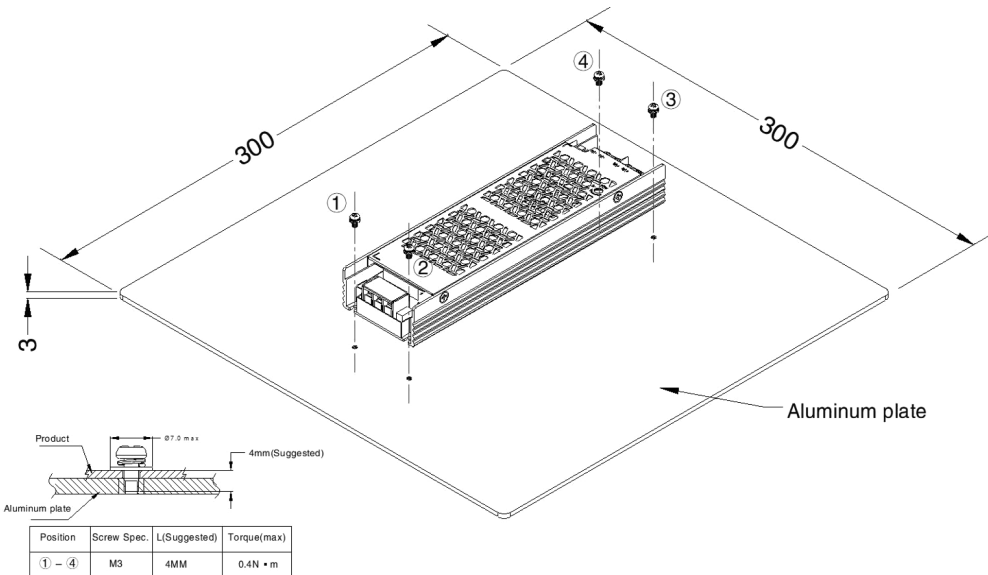
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Dimensions and Recommended Layout



Connector wires range

Pro. No	Input connector	Output connector (single wire)	Output connector (double wires)	Output connector (double wires) Pic.
5V		No suggested	14-12AWG	
12V	22-14AWG	14-12AWG	18-12AWG	
24/36/48V		18-12AWG	20-12AWG	
Screw/torque	M3.0, Max 0.5N · m	M3.5, Max 0.8N · m		



Note: 1. In order to meet the "Derating Curve", the product testing must be installed onto an aluminum plate. The size of the suggested aluminum plate is shown as above. And for optimizing thermal performance, it is necessary to apply thermal grease on the bottom of the product.
 2. It is suggested to install the product with M3 x 5 combination screws, and the product must be firmly installed at the center of the aluminum plate.

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, 40A	MPMF200-23B05UH-C
Enclosed Power Supply, 12V DC, 16.7A	MPMF200-23B12UH-C
Enclosed Power Supply, 24V DC, 8.4A	MPMF200-23B24UH-C
Enclosed Power Supply, 28V DC, 7.15A	MPMF200-23B28UH-C
Enclosed Power Supply, 36V DC, 5.6A	MPMF200-23B36UH-C
Enclosed Power Supply, 48V DC, 4.2A	MPMF200-23B48UH-C

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