

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 +85°C
- Low standby power consumption, high efficiency
- Active PFC
- 150% peak load output for 1 second
- High I/O isolation test voltage up to 4000VAC
- Output short circuit, over-current, over-voltage, over-temperature protection
- Operating altitude up to 5000m
- Safety according to UL/EN62368-1, EN61558-1, EN60335-1, GB4943.1

RoHS



LMF750-23BxxUH series is one of Mornsun's 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 all 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

Certification	Part No.	Rated Output Power (W)*	Nominal Output Voltage and Current (Vo/Io)*	Output Voltage Adjustable Range (V)	Efficiency at 230VAC (%) Typ.	150% peak Output Current	Room Temperature Max. Capacitive Load (µF)	Low Temperature Max. Capacitive Load (µF)
	LMF750-23B12UH	720.0	12V/60A	12-14.4	94	90.0	12000	6000
	LMF750-23B24UH	751.2	24V/31.3A	24-28.8	95	46.95	10000	4000
	LMF750-23B36UH	752.4	36V/20.9A	36-43.2	95	31.35	8000	3000
	LMF750-23B48UH	753.6	48V/15.7A	48-57.6	96	23.55	6000	2000

Note: *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.

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	单位
Input Voltage Range	AC Input	85	--	305	VAC
	DC Input	120	--	430	VDC
Input Voltage Frequency		47	--	63	Hz
Input Current	115VAC	--	--	7.5	A
	230VAC	--	--	3.8	
Inrush Current	115VAC	Cold start	--	20	--
	230VAC		--	--	
Power Factor	115VAC	Full load	0.98	--	--
	230VAC		0.95	--	
Leakage Current	240VAC	<0.5mA			
Hot Plug		Unavailable			

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full load range	12V/24V/36V/48V	--	±1.0	--
Line Regulation	Rated load	12V/24V/36V/48V	--	±0.5	--
Load Regulation	0% - 100% load	12V/24V/36V/48V	--	±0.5	--

Ripple & Noise*	20MHz bandwidth (peak-to-peak value), 25°C	12V	--	--	150	mV
		24V/36V/48V	--	--	200	
Minimum Load			0	--	--	%
Stand-by Power Consumption			--	--	5	W
Hold-up Time	Room temperature, full load, 115VAC/230VAC		--	12	--	ms
Short Circuit Protection			Constant current protect, continuous, self-recover			
Over-current Protection			> 110% - 170% Io, constant current protec, self-recover			
Over-voltage Protection	12V		14.5 - 17VDC			hiccup, self-recover
	24V		29.0 - 33VDC			
	36V		43.5 - 49VDC			
	48V		59.0 - 66VDC			
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.						

General Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit	
Isolation Test	Input - ⊕	Electric strength test for 1min, leakage current <5mA	2000	--	--	VAC	
	Input - output		4000	--	--		
	Output - ⊕		1750	--	--		
Insulation Resistance	Input - ⊕	Environment temperature: 25±5°C Relative humidity: <95%RH, non-condensing Testing voltage: 500VDC	50	--	--	MΩ	
	Input - output			--	--		
	Output - ⊕			--	--		
Operating Temperature			-40	--	+85	°C	
Storage Temperature			-40	--	+85		
Operating Humidity	Non-condensing		20	--	90	%RH	
Storage Humidity			10	--	95		
Power Derating	Operating temperature derating	With aluminum plate*	12V	-40°C to +45°C	0	--	% / °C
				+45°C to +85°C	2	--	
		24V/36V/48V		-40°C to +50°C	0	--	
				+50°C to +85°C	2.5	--	
	Without aluminum plate	12V/24V/36V/48V (70% Start derating)		-40°C to +45°C	0	--	
				+45°C to +85°C	2.33	--	
Input voltage derating		85VAC - 180VAC	0.33	--	--	% / VAC	
		180VAC - 305VAC	0	--	--		
Safety Standard			Safety according to UL/EN62368-1, EN61558-1, EN60335-1, GB4943.1				
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 x 450mm x 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

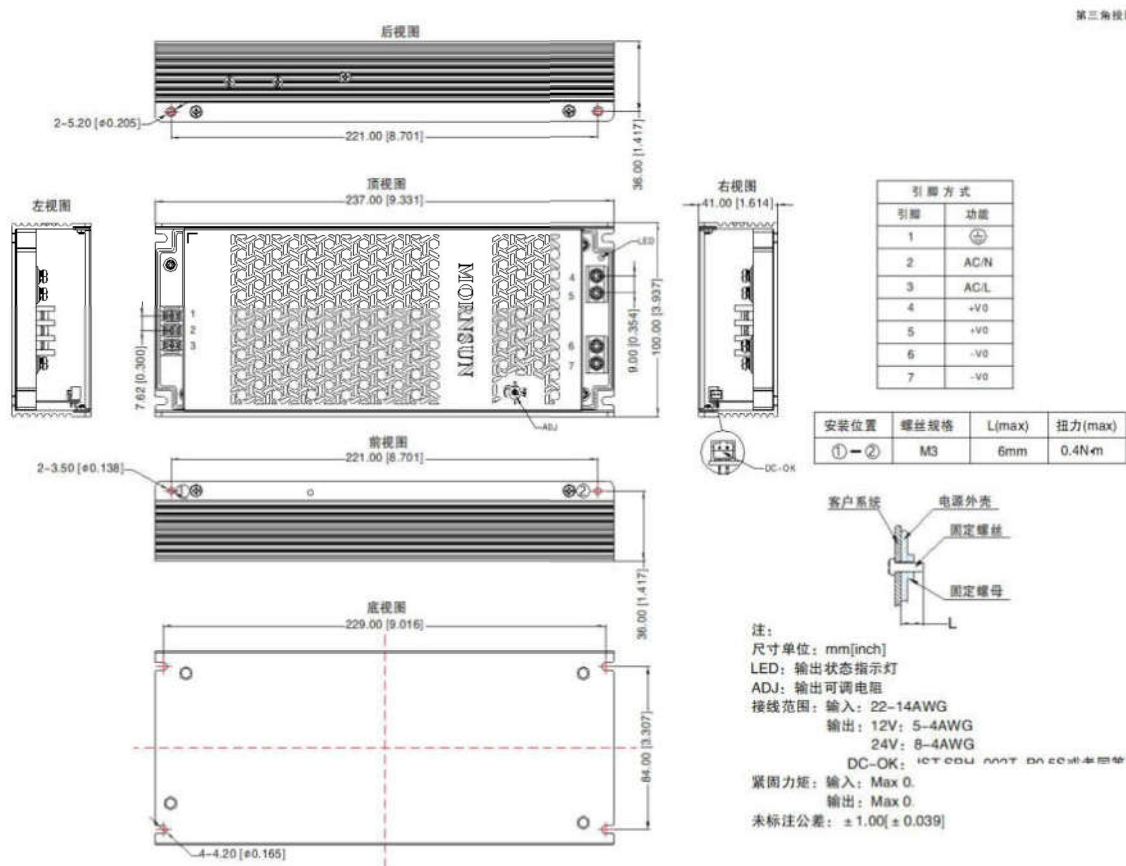
Case Material	Metal (AL6063, SGCC)
Dimensions	237.00 x 100.00 x 41.00 mm
Weight	1000g (Typ.)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

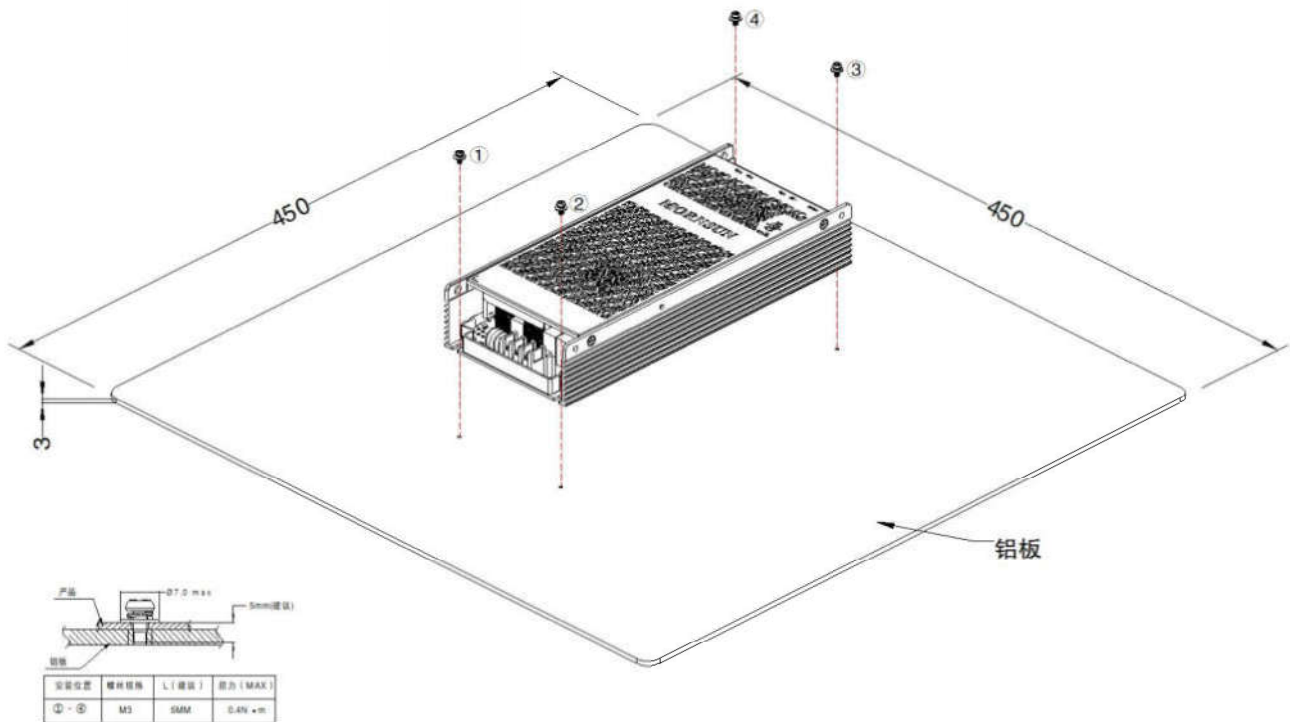
Emissions	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
	Harmonic current	IEC/EN61000-3-2	CLASS A	
	Voltage flicker	IEC/EN6100-3-2		
Immunity	ESD	IEC/EN61000-4-2	Contact ±8KV/Air ±15KV	perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	±2KV	perf. Criteria A
	Surge	IEC/EN61000-4-5	line to line ±2KV/line to ground ± 4KV	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

Dimensions and Recommended Layout



Installation Diagram



注: 1. 为了满足“降额曲线”, 产品必须安装在铝板上进行测试, 铝板建议尺寸如图所示, 同时为了保证导热性能, 需在产品底部涂抹导热硅脂。
2. 推荐用M3 x 6组合螺丝安装, 确保将产品牢固安装在铝板中心处

Note: 1. Figure 1 is the schematic diagram of the bottom installation, install with M3 x 4 round head screws, it is necessary to apply thermal grease on the bottom of the product, derating refer to with aluminum plate curve.

Note:

- For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220233;
- Unless otherwise specified, parameters in this datasheet were measured under the conditions of $T_a=25^{\circ}\text{C}$, humidity <75% RH with nominal input voltage and rated output load;
- The room temperature derating of $5^{\circ}\text{C}/1000\text{m}$ is needed for operating altitude greater than 2000m;
- All index testing methods in this datasheet are based on our company corporate standards;
- 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;
- We can provide product customization service, please contact our technicians directly for specific information;
- Products are related to laws and regulations: see "Features" and "EMC";
- The out case needs to be connected to PE (\perp) of system when the terminal equipment in operating;
- The output voltage can be adjusted by the ADJ, clockwise to decrease;
- Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
- The power supply is considered a component which will be installed into a terminal equipment. All EMC tests should be confirmed with the final equipment. Please consult our FAE for EMC test operation instructions.

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