

AC/DC 100W Enclosed Switching Power Supply

LMF100-23Bxx, LMF100-23Bxx-C, LMF100-23Bxx-Q Series

MORNSUN®



FEATURES

- Universal 85 - 305V AC or 120 - 430VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating temperature range: -30°C to +70°C
- Built-in active PFC function
- High I/O isolation test voltage up to 4000VAC
- Up to 87% efficiency
- Output short circuit, over-current, over-voltage, over-temperature protection (Built-in constant current limiting circuit)
- Remote ON-OFF control
- Safety according to IEC/EN60335, IEC/EN61558
- Emissions meets CISPR32/EN55032 CLASS B without extra components
- IEC/EN/UL62368, GB4943 safety approval

LMF100-23Bxx series is one of Mornsun's enclosed AC-DC switching power supply. It features universal AC input and at the same time accepts DC input voltage, cost-effective, built-in active PFC function, high efficiency and high reliability. These converters offer excellent EMC performance and meet IEC/EN61000-4, CISPR32/EN55032, IEC/UL/EN62368, EN60335, GB4943 standards and they are widely used in areas of industrial, LED, street light control, electricity, security, telecommunications, smart home etc.

Selection Guide

Certification	Part No.*	Output Power(W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range(V)	Efficiency at 230VAC (%) Typ.	Max. Capacitive Load (uF)
UL/CE/CCC/ CB	LMF100-23B12	102	12V/8.5A	11.4-13.8	85	5000
	LMF100-23B15	100.5	15V/6.7A	14.3-16.5	86	5000
	LMF100-23B24	100.8	24V/4.2A	22.8-27.6	86	4200
	LMF100-23B48	100.8	48V/2.1A	45.6-55.2	87	2200

Note: *Use suffix "C" for terminal with protective cover and suffix "Q" for conformal coating.

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Voltage Range	AC input		85	--	305	VAC
	DC input		120	--	430	VDC
Input Voltage Frequency			47	--	63	Hz
Input Current	85VAC		--	--	1.7	A
	115VAC		--	--	1.3	
	230VAC		--	--	0.7	
Inrush Current	115VAC	Cold start	--	25	--	
	230VAC		--	45	--	
Power Factor	115VAC	At full load	0.97	0.98	--	--
	230VAC		0.92	0.93	--	
Leakage Current	277VAC		<2mA			
Hot Plug			Unavailable			

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Page 1 of 5

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Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full load range	12V/15V	--	±2	--	%
		24V/48V	--	±1	--	
Line Regulation	Rated load		--	±0.5	--	
Load Regulation	0% - 100% load	12V/15V/24V/48V	--	±0.5	--	
Output Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	12V/15V	--	--	100	mV
		24V	--	--	150	
		48V	--	--	250	
Temperature Coefficient			--	±0.05	--	%/°C
Minimum Load			0	--	--	%
Hold-up Time	230VAC		16	--	--	ms
Stand-by Power Consumption	230VAC	12V/15V/24V	--	--	2.0	W
		48V	--	--	2.5	
Short Circuit Protection	Recovery time <3s after the short circuit disappear.		Constant current, continuous, self-recovery			
Over-current Protection			105%-150% Io, constant current, self-recovery			
Over-voltage Protection	12V		≤16.8V (Output voltage hiccup)			
	15V		≤20.25V (Output voltage hiccup)			
	24V		≤32.4V (Output voltage hiccup)			
	48V		≤60V (Output voltage hiccup)			
Over-temperature Protection*			Hiccup, self-recovery			
Remote Control (CN1)	0-0.8VDC(Or Floating) Power ON		0	--	0.8	VDC
	4-10VDC Power OFF		4	--	10	

Note: 1. *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.
2. *Over-temperature Protection needs to be tested under rated full load conditions.

General Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Isolation	Input -⊕	Electric Strength Test for 1min., leakage current <10mA	2000	--	--	VAC
	Input-output	Electric Strength Test for 1min., leakage current <10mA	4000	--	--	
	output -⊕	Electric Strength Test for 1min., leakage current <5mA	500	--	--	
Insulation Resistance	Input -⊕	Environment Temperature: 25±5°C,	100	--	--	MΩ
	Input - output	Relative Humidity: < 95%RH, non-condensing	100	--	--	
	output -⊕	Testing Voltage: 500VDC	100	--	--	
Operating Temperature			-30	--	+70	°C
Storage Temperature			-40	--	+85	
Storage Humidity	Non-condensing		10	--	95	%RH
Operating Humidity	Non-condensing		20	--	90	
Switching Frequency			--	65	--	kHz
Power Derating	+50°C to +70°C		2	--	--	%/°C
	85VAC-100VAC		1.33	--	--	%/VAC
	2000m-5000m		6.66	--	--	%km
Safety Standard			IEC/EN/UL62368, IEC/EN60335, GB4943, IEC/EN61558			
Safety Certification			IEC/EN/UL62368, GB4943			
Safety Class			CLASS I			
MTBF	MIL-HDBK-217F@25°C		>300,000 h			

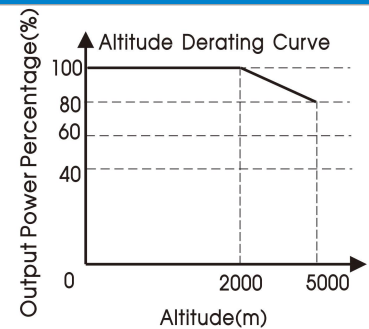
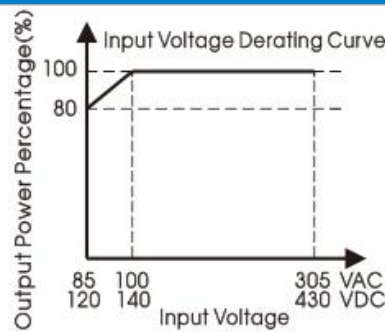
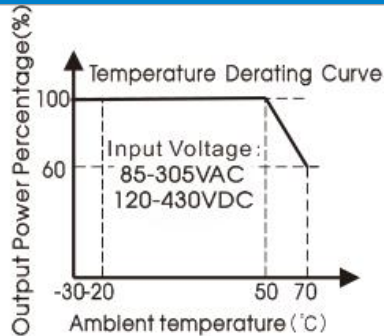
Mechanical Specifications

Case Material	Metal (AL1100, SGCC)
Dimensions	179.00 × 99.00 × 30.00mm
Weight	460g (Typ.)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

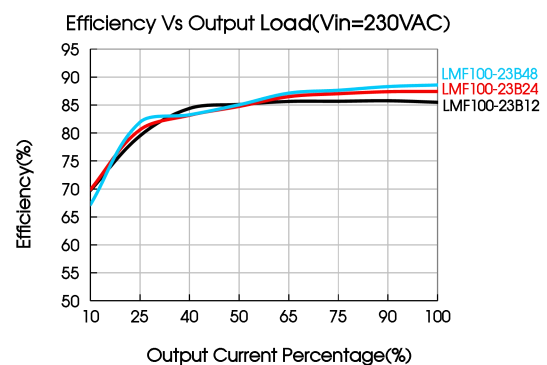
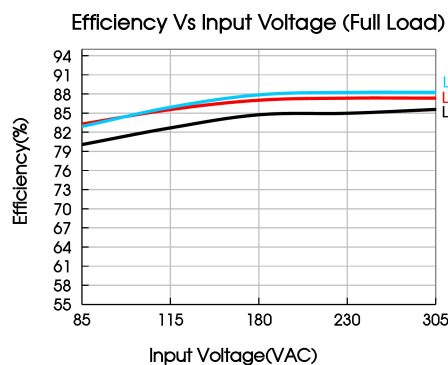
Emissions	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
	Harmonic Current	IEC/EN61000-3-2	CLASS A	
	Voltage Flicker	IEC/EN61000-3-3		
Immunity	ESD	IEC/EN 61000-4-2	Contact ±6KV /Air ±8KV	Perf. Criteria A
	RS	IEC/EN 61000-4-3	3V/m	perf. Criteria B
	EFT	IEC/EN 61000-4-4	± 2KV	perf. Criteria A
	Surge	IEC/EN 61000-4-5	line to line ±1KV/line to ground ± 2KV	perf. Criteria A
	CS	IEC/EN61000-4-6	10 Vr.m.s	perf. Criteria A
	DIP	IEC/EN61000-4-11	0%, 70%	perf. Criteria B

Product Characteristic Curve



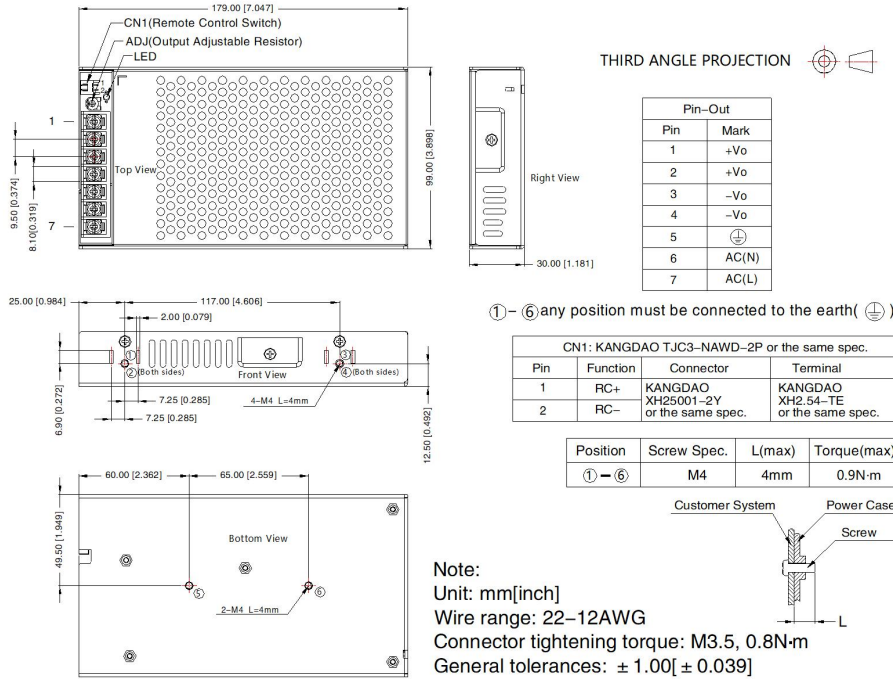
Note: ①With an input voltage between 85-100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;

②This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.

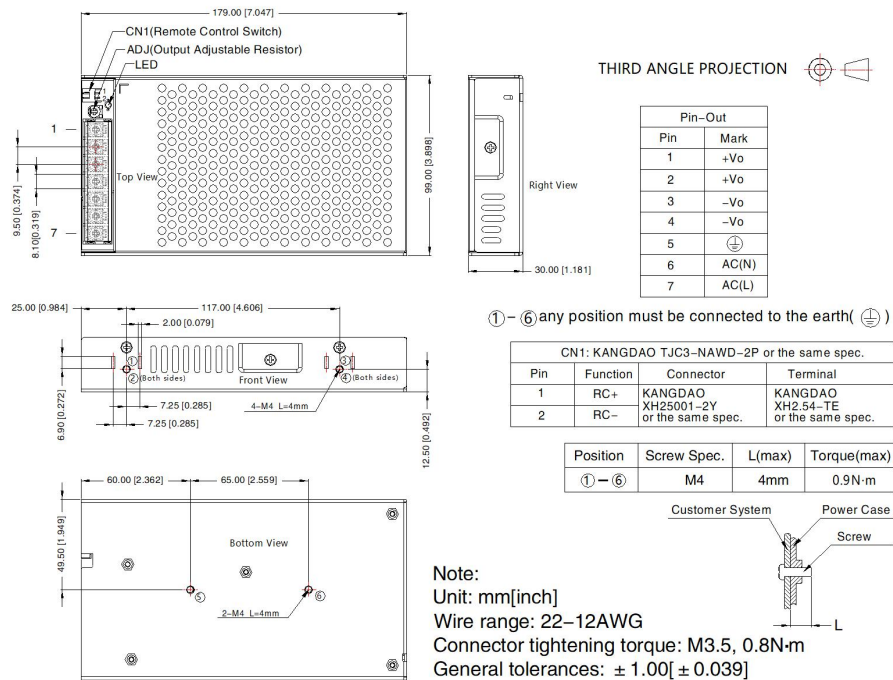


Dimensions and Recommended Layout

LMF100-23Bxx, LMF100-23Bxx-Q Series



LMF100-23Bxx-C Series



Note:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220136;
2. 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;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. 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;
5. We can provide product customization service, please contact our technicians directly for specific information;
6. Products are related to laws and regulations: see "Features" and "EMC";
7. The out case needs to be connected to the earth of system when the terminal equipment in operating;
8. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
9. 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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