AC/DC 75W Enclosed Switching Power Supply

LMF75-23Bxx, LMF75-23Bxx-C, LMF75-23Bxx-Q Series

MORNSUN®

CE RoHS 3 years Warranty

FEATURES

- Universal 85 - 305V AC or 120 - 430VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating temperature range -30℃ to +70℃
- Built-in active PFC function
- High I/O isolation test voltage up to 4000VAC
- High efficiency, high reliability
- Output short circuit, over-current, over-voltage, over-temperature protection（Built-in constant current limiting circuit）
- Remote ON-OFF control
- Designed to meet IEC/EN/UL62368, EN60335, GB4943
- EN62368 safety approval
- Over-voltage class Ⅲ (designed to meet EN61558)
- Emissions meets CISPR32/EN55032 CLASS B

LMF75-23Bxx 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, IEC62368, UL62368, 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 ADJ(V)	Efficiency at 230VAC (%) Typ.	Max. Capacitive Load (μF)
CE	LMF75-23B05	75	5V/15A	4.75-5.5	81	10000
	LMF75-23B12	75.6	12V/6.3A	11.4-13.2	84	6000
	LMF75-23B15	75	15V/5A	14.3-16.5	85	5000
	LMF75-23B24	76.8	24V/3.2A	22.8-26.4	86	1500
	LMF75-23B48	76.8	48V/1.6A	45.6-52.8	88	680

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	115VAC		--	--	1.0	A
	230VAC		--	--	0.6	
Inrush Current	115VAC	Cold start	--	20	--	
	230VAC		--	35	--	
Power Factor	115VAC	At full load	0.98	--	--	--
	230VAC		0.93	--	--	
Leakage Current	277VAC/60Hz		2mA			
Hot Plug			Unavailable			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full load range		--	±2.0	--	%
Line Regulation	Rated load		--	±0.5	--	
Load Regulation	0% - 100% load	5V	--	±1.0	--	
		12V/15V/24V/48V	--	±0.5	--	
Output Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	5V/12V/15V/24V	--	--	120	mV
		48V	--	--	200	
Temperature Coefficient			--	±0.03	--	%/℃
Minimum Load			0	--	--	%
Hold-up Time	230VAC		--	16	--	ms
Start-up Delay Time	Full load range		--	--	3	s
Short Circuit Protection	Recovery time <3s after the short circuit disappear.		Constant current, continuous, self-recover			
Over-current Protection			⩾105%Io, self-recovery			
Over-voltage Protection	5V		⩽ 7.0V (Output voltage clamp or hiccup)			
	12V		⩽20V (Output voltage clamp or hiccup)			
	15V		⩽ 25V (Output voltage clamp or hiccup)			
	24V		⩽ 32.4V (Output voltage clamp or hiccup)			
	48V		⩽ 60V (Output voltage clamp or hiccup)			
Over-temperature Protection**	Over-temperature Protection Activation		--	--	85	℃
	Over-temperature Protection Deactivation		50	--	--	
Remote Control	0-0.8VDC Power ON		0	--	0.8	VDC
	4-10VDC Power OFF		4	--	10	

Note: *The "Tip and barrel method"is used for ripple and noise test, (47uF electrolytic capacitor and 104 ceramic capacitor) please refer to enclosure and guide rail Converter Application Notes for specific information.
**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℃, Relative Humidity: < 95%RH, non-condensing Testing Voltage: 500VDC			100	--	--	MΩ
	Input - output				100	--	--	
	output -⏚				100	--	--	
Operating Temperature		5V			-30	--	+60	℃
		others			-30	--	+70	
Storage Temperature					-40	--	+85	
Storage Humidity		Non-condensing			--	--	95	%RH
Switching Frequency					--	65	--	kHz
Power Derating		Operating Temperature Derating	-30℃ to -20℃	85V-230VAC	4.0	--	--	%/℃
			+40℃ to +60℃	5V	2.0	--	--	
			+50℃ to +70℃	others	2.0	--	--	
		Input Voltage Derating	85VAC-100VAC		1.33	--	--	%/VAC
			100VAC-305VAC		0	--	--	
		Altitude Derating	2000m-5000m		5	--	--	%/Km
Safety Standard					Meet UL/EN/IEC62368, EN60335, GB4943			
Safety Certification					EN62368			
Safety Class					CLASS I			
MTBF		MIL-HDBK-217F@25℃			>300,000 h			

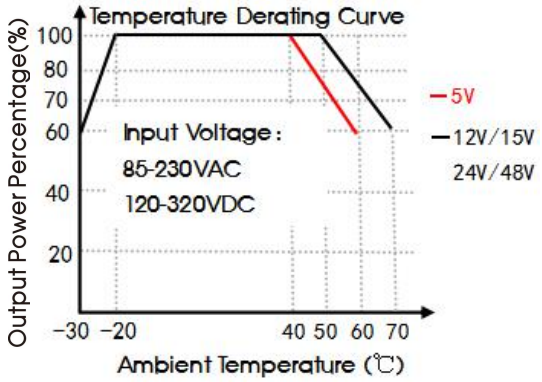
Mechanical Specifications

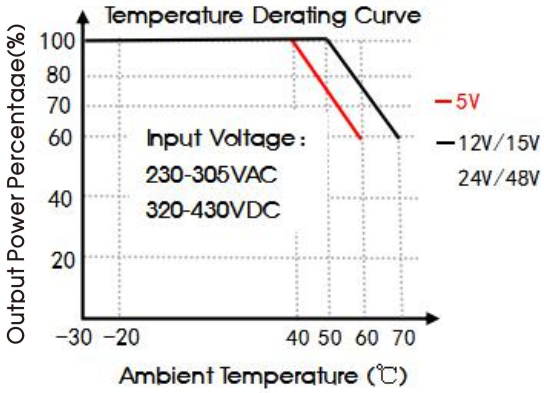
Case Material	Metal (AL1100, SGCC)
Dimensions	159.00 x 97.00 x 30.00mm
Weight	380g (Typ.)
Cooling Method	Free air convection

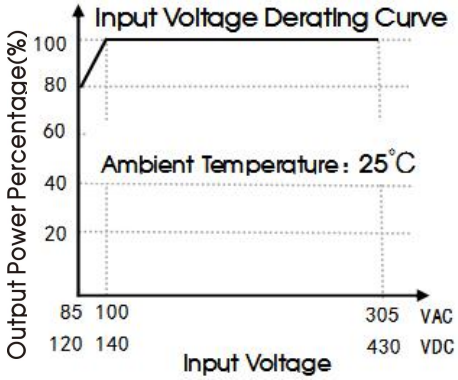
Electromagnetic Compatibility (EMC)

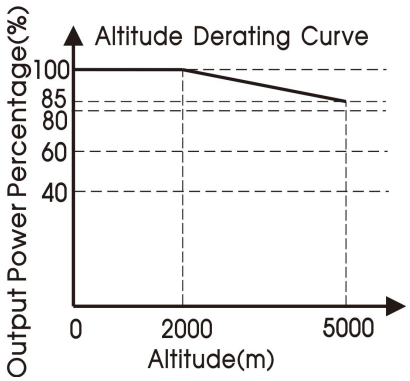
Emissions	CE	CISPR32/EN55032 CLASS B	
	RE	CISPR32/EN55032 CLASS B	
	Harmonic Current	IEC/EN61000-3-2 CLASS A	
	Flicker	IEC/EN61000-3-3	
Immunity	ESD	IEC/EN 61000-4-2 Contact ±6KV /Air ±8KV	Perf. Criteria B
	RS	IEC/EN 61000-4-3 10V/m	perf. Criteria A
	EFT	IEC/EN 61000-4-4 ±2KV	perf. Criteria A
	Surge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

Product Characteristic Curve

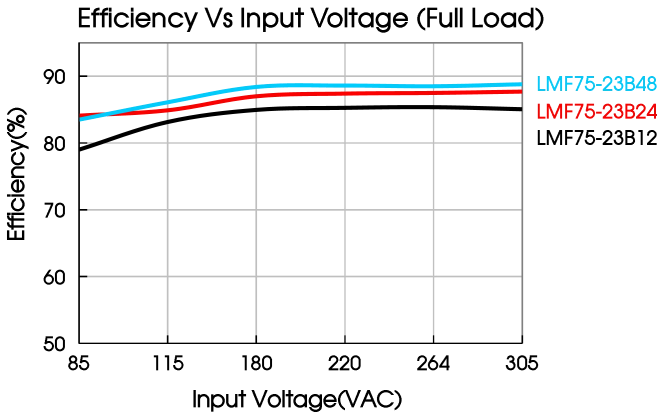


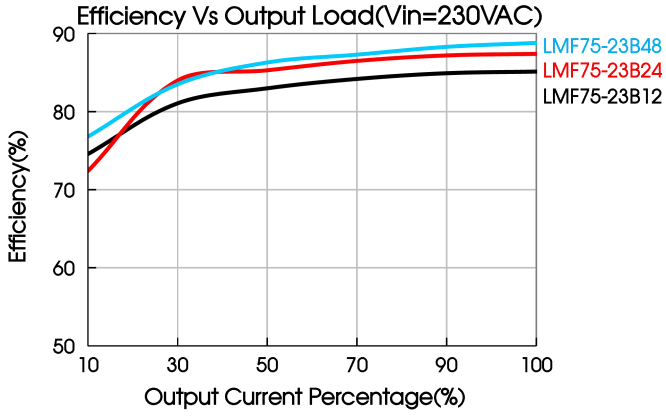






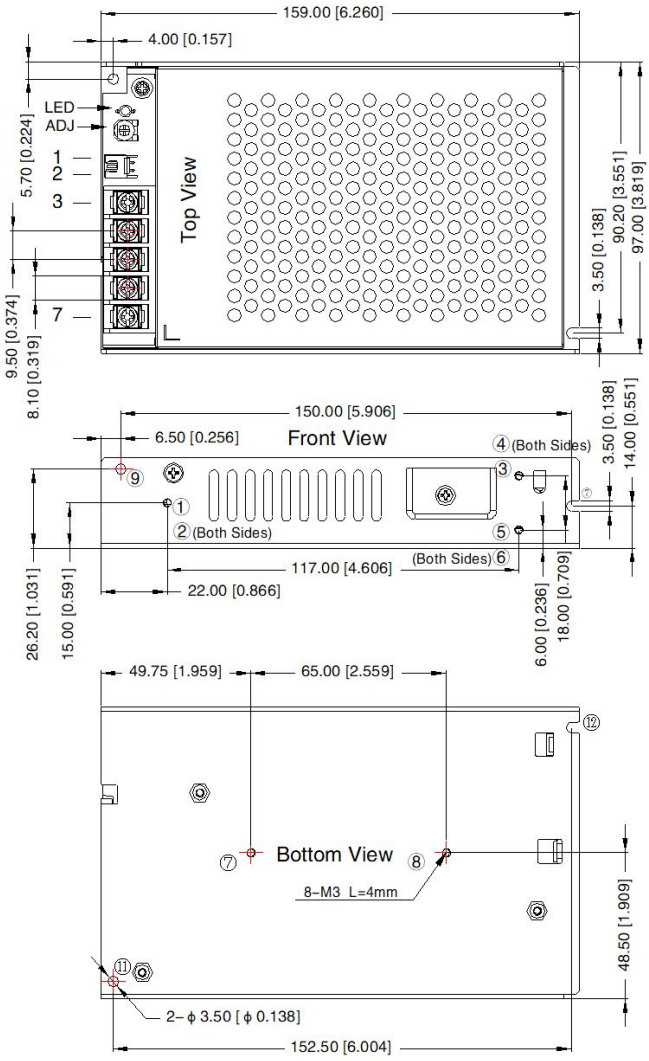
Note: ①With an input voltage between 85-100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;
②This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.



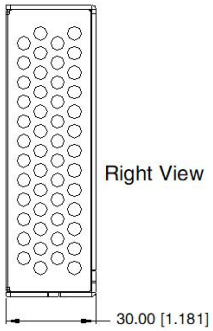


Dimensions and Recommended Layout

LMF75-23Bxx, LMF75-23Bxx-Q Series



THIRD ANGLE PROJECTION

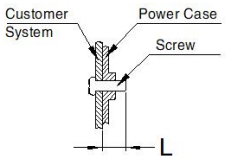


Pin–Out	
Pin	Mark
1	RC+
2	RC–
3	+Vo
4	–Vo
5	⏚
6	AC(N)
7	AC(L)

CN1: JST S2B–XH–A or equivalent			
Pin	Mark	Connector	Terminal
1	RC+	JST: XHP–2 or equivalent	JST: SXH–001T/SXH–002T or equivalent
2	RC–		

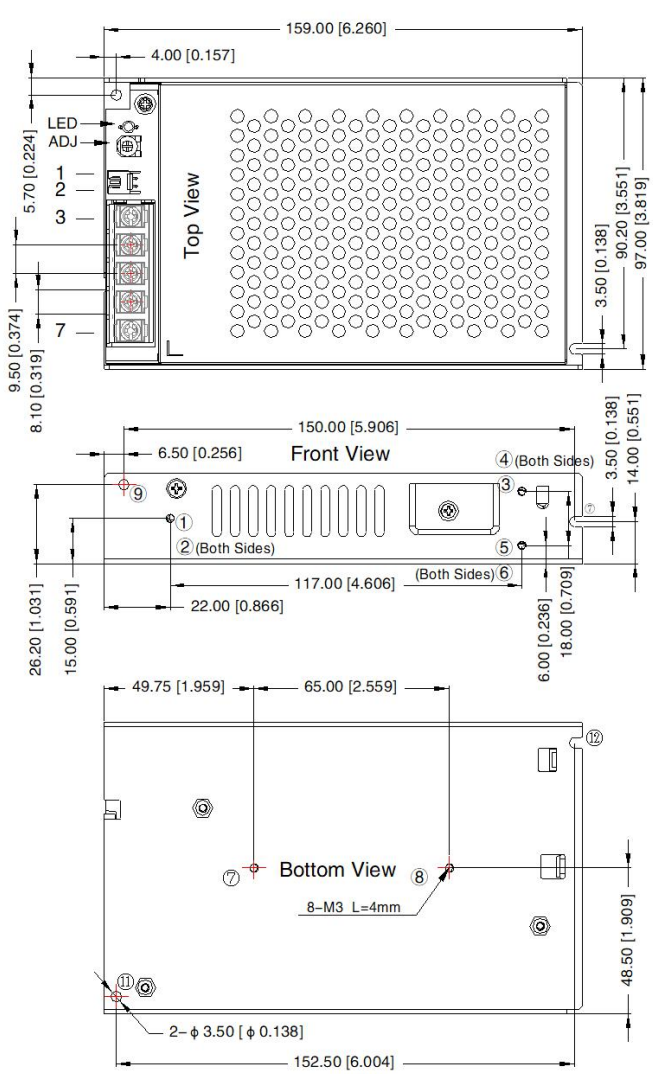
① – ⑫ any position must be connected to the earth(⏚)

Position	Screw Spec.	L(max)	Torque(max)
① – ⑧	M3	4mm	0.4N · m



Note:
Unit: mm[inch]
ADJ: Output adjustable resistor
Wire range: 22–12AWG
Tightening torque: M3.5, 0.8N · m(Max)
General tolerances: ± 1.00[± 0.039]

LMF75-23Bxx-C Series



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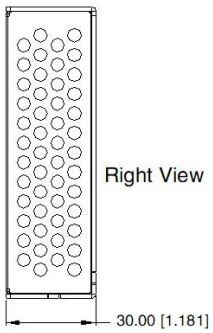

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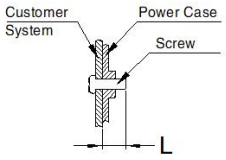

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Note:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220111;
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, 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 PE 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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