

AC/DC 75W Enclosed Switching Power Supply

LM75-23BxxR2S(-Q, -QQ) Series

MORNSUN®



FEATURES

- Universal 80 - 305VAC or 100 - 430VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -40℃ to +85℃
- Low standby power consumption, high efficiency
- High I/O Isolation test voltage up to 4000VAC
- Low ripple & noise
- Operating altitude up to 5000m
- Output short circuit, over-current, over-voltage protection
- OVC III (designed to meet EN62477)
- Safety according to UL/IEC62368, EN60335, EN61558, EN62477
- 3 years warranty

CE Report
EN62368-1

UK
BS EN 62368-1

CCC
GB4943.1

RoHS



LM75-23BxxR2S series is the ultra-small second-generation new industrial standard mental case-type power supply that Mornsun has innovated the industrial chassis power supply standard from the dimensions of size, performance, technology, and structure. It features universal AC input and at the same time accepts DC input voltage, cost-effective, low no load power consumption, high efficiency, high reliability and double or reinforced insulation. These converters offer excellent EMC performance and meet IEC/EN61000-4, CISPR32/EN55032, UL/IEC/EN/BS EN62368, EN60335, EN61558, EN62477, GB4943 standards and they are widely used in areas of industrial, LED, street light control, 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 (μF)
EN/CCC	LM75-23B05R2S	70	5V/14A	4.5-5.5	86.5	10000
	LM75-23B12R2S	72	12V/6A	10.2-13.8	89	6000
	LM75-23B15R2S	75	15V/5A	13.5-18	89	5000
	LM75-23B24R2S	76.8	24V/3.2A	21.6-28.8	91	1500
	LM75-23B36R2S	75.6	36V/2.1A	32.4-39.6	91	1000
	LM75-23B48R2S	76.8	48V/1.6A	43.2-52.8	92.5	680
	LM75-23B54R2S	75.6	54V/1.4A	48.6-59.4	92.5	680

Note: *1. Use suffix "Q" for conformal coating and "QQ" for both sides conformal coating.
2. If the terminal cover is required, please order "PJA-032" for self-installation.
3. The product picture is for reference only. For details, please refer to the actual product.

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Voltage Range	AC input		80	--	305	VAC
	DC input		100	--	430	VDC
Input Voltage Frequency			47	--	63	Hz
Input Current	115VAC		--	--	2	A
	230VAC		--	--	1	
Inrush Current	115VAC	Cold start	--	40	--	
	230VAC		--	75	--	
Leakage Current	277VAC		<0.75mA			
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/15V/24V/36V/48V/54V	--	±1	--	
Line Regulation	Rated load		--	±0.5	--	
Load Regulation	0% - 100% load	5V	--	±1	--	
		12V/15V/24V/36V/48V/54V	--	±0.5	--	
Minimum Load			0	--	--	
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	5V/12V/15V	--	120	--	mV
		24V	--	150	--	
		36V/48V/54V	--	200	--	
Temperature Coefficient			--	±0.03	--	%/℃
Stand-by Power Consumption			--	--	0.5	W
Hold-up Time	115VAC		8	--	--	ms
	230VAC		55	--	--	
Short Circuit Protection	Recovery time <5s after the short circuit disappear		Hiccup, continuous, self-recover			
Over-current Protection	230VAC, rated load	Normal temperature, high temperature	120% - 200% Io, hiccup, self-recover			
		Low temperature	≥ 120% Io, hiccup, self-recover			
Over-voltage Protection	5V		≤7.3VDC (Hiccup, self-recover)			
	12V		≤16VDC (Clamp, self-recover)			
	15V		≤21.75VDC (Clamp, self-recover)			
	24V		≤33.6VDC (Hiccup, self-recover)			
	36V		≤48.6VDC (Hiccup, self-recover)			
	48V		≤60VDC (Hiccup, self-recover)			
	54V		≤70VDC (Hiccup, self-recover)			
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 <5mA		2000	--	--	VAC	
	Input - output			4000	--	--		
	Output - ⊕			1250	--	--		
Insulation Resistance	Input - ⊕	At 500VDC		100	--	--	M Ω	
	Input - output			100	--	--		
	Output - ⊕			100	--	--		
Operating Temperature				-40	--	+85	℃	
Storage Temperature				-40	--	+85		
Operating Humidity		Non-condensing		20	--	90	%RH	
Storage Humidity				--	--	95		
Switching Frequency				--	--	150	kHz	
Power Derating		Operating temperature derating	+40℃ to +70℃	5V	1.33	--	--	% /℃
			+70℃ to +85℃		2	--	--	
			+50℃ to +85℃	Others	2	--	--	
			-40℃ to -30℃		5	--	--	
		Input voltage derating	80VAC - 100VAC		1.33	--	--	% /VAC
			277VAC - 305VAC		0.71	--	--	

Safety Standard	5V/12V/15V/24V/36V/48V	GB4943.1 safety approved & BS EN/EN62368-1 (Report); Design refer to UL/IEC62368-1, EN60335-1, EN61558-1, EN62477-1, IS13252 (Part1)
	54V	GB4943.1 safety approved & BS EN/EN62368-1 (Report); Design refer to UL/IEC62368-1, EN60335-1, EN61558-1, EN62477-1
Safety Class		CLASS I
MTBF	MIL-HDBK-217F@25°C	>300,000 h

Mechanical Specifications

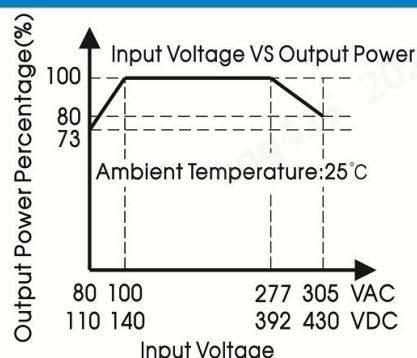
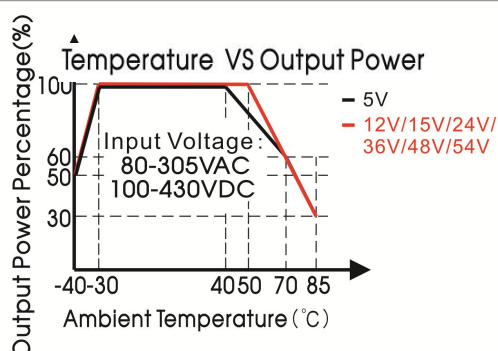
Case Material	Metal (AL1100, SGCC)
Dimensions	99.00mm x 82.00mm x 30.00mm
Weight	220g (Typ.)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032 CLASS B		
	RE	CISPR32/EN55032 CLASS B		
	Harmonic current	IEC/EN61000-3-2 CLASS A		
Immunity	ESD	IEC/EN 61000-4-2 Contact ±6KV/Air ±8KV		perf. Criteria A
	RS	IEC/EN 61000-4-3 10V/m		perf. Criteria A
	EFT	IEC/EN 61000-4-4 ±4KV		perf. Criteria A
	Surge	IEC/EN 61000-4-5 line to line ±2KV/line to PE ±4KV		perf. Criteria A
	CS	IEC/EN61000-4-6 10 Vr.m.s		perf. Criteria A
	Voltage variation*	IEC61000-6-2/IEC61000-4-11	70% Un, 25/30 cycle(50/60Hz) 40% Un, 10/12 cycle(50/60Hz) 0% Un, 1 cycle	perf. Criteria B
	Voltage interruption*	IEC61000-6-2/IEC61000-4-11	0% Un, 250/300 cycle(50/60Hz)	perf. Criteria C

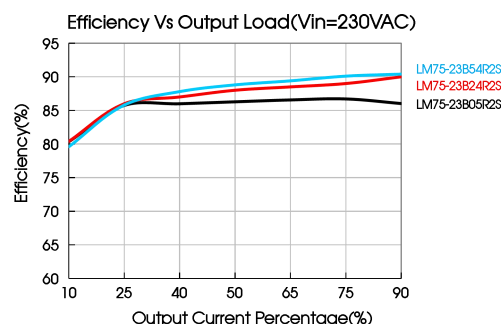
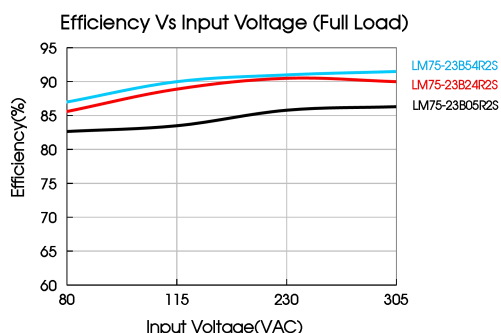
Note: *Un is the maximum input nominal voltage.

Product Characteristic Curve

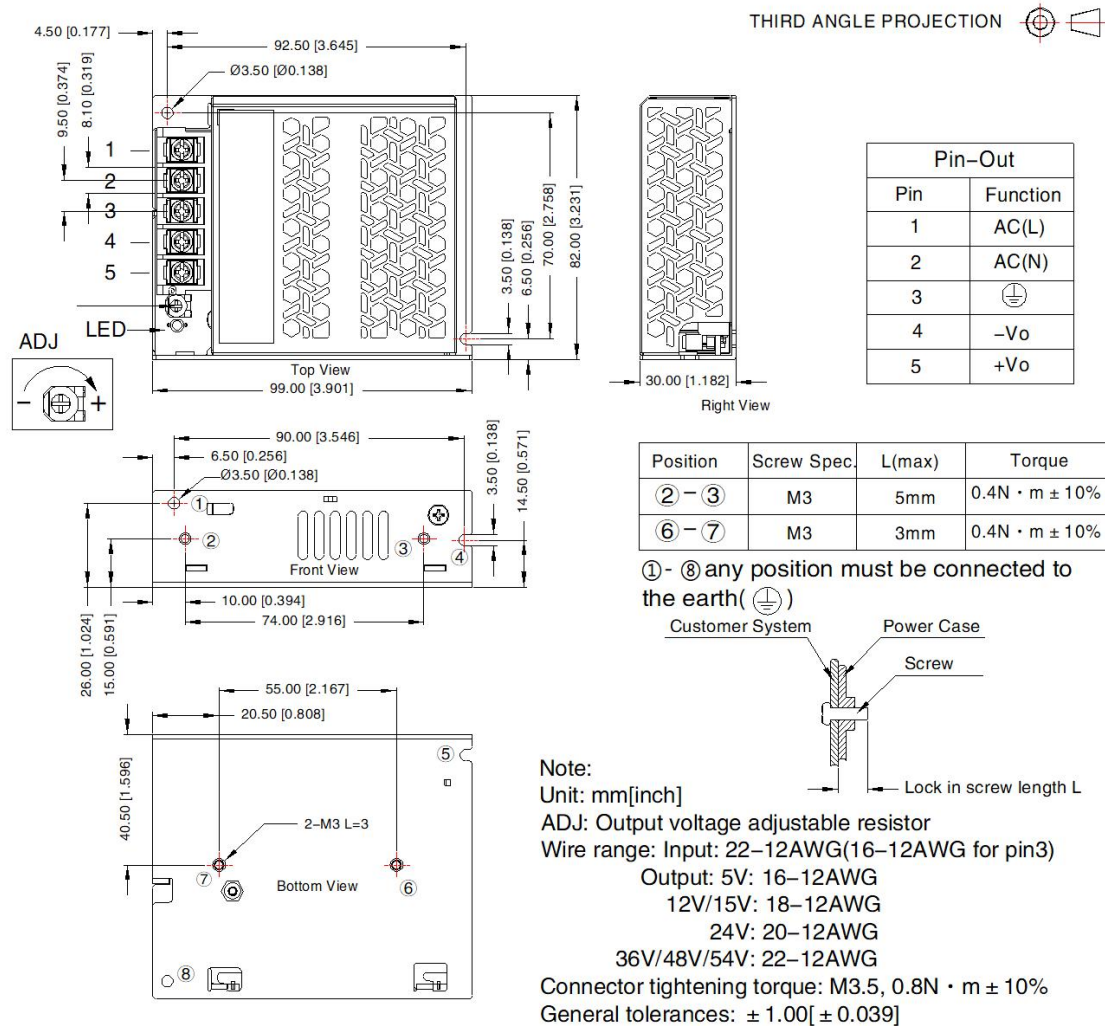


Note: 1. With an AC input voltage between 80 - 100VAC/277 - 305VAC and a DC input between 100 - 140VDC/392 - 430VDC the output power must be derated as per the temperature derating curves;

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



Dimensions and Recommended Layout



Note:

- For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220268;
- 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;
- The room temperature derating of 5℃/1000m 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 (⏏) of system when the terminal equipment in operating;
- The output voltage can be adjusted by the ADJ, clockwise to increase;
- 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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