

AC/DC 350W Enclosed Switching Power Supply

LMF350-23BxxUH, LMF350-23BxxUH-C, LMF350-23BxxUH-YW

Series

MORNSUN®



EN62368-1



GB4943.1



BS EN 62368-1



RoHS



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
- 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
- Design refer to EN61558, EN60335
- 3 years warranty

LMF350-23BxxUH 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 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.	Room Temperature Max. Capacitive Load (uF)	Low Temperature Max. Capacitive Load (uF)
EN/CCC/BIS	LMF350-23B05UH	300	5V/60A	4.5-5.5	90	12000	6000
	LMF350-23B12UH	350.4	12V/29.2A	11.4-12.6	92	10000	4000
	LMF350-23B24UH	350.4	24V/14.6A	22.8-25.2	94	8000	3000
EN	LMF350-23B28UH	350	28V/12.5A	26.6-29.4	94	7000	2500
EN/CCC/BIS	LMF350-23B36UH	351	36V/9.75A	34.2-37.8	94	6000	2000
	LMF350-23B48UH	350.4	48V/7.32A	45.6-50.4	94	4000	1000
/	LMF350-23B54UH	349.92	54V/6.48A	51.3-56.7	94	3000	800

Note: 1. *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;

2. *Use suffix "C" for terminal with protective cover and 12V, 24V output product with optional salt-spray proof at terminal: LMF350-23BxxUH-YW.

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Voltage Range	Rated input (Certified voltage)		100	--	277	VAC
	AC input		85	--	305	
	DC input		120	--	430	VDC
Input Voltage Frequency			47	--	63	Hz
Input Current	115VAC		--	--	4	A
	230VAC		--	--	2	
Inrush Current	115VAC	Cold start	--	16.7	--	
	230VAC		--	42.3	--	
Power Factor	115VAC	Full load	0.98	--	--	--
	230VAC		0.98	--	--	
Leakage Current	240VAC		<0.5mA			
Hot Plug			Unavailable			

MORNSUN®

MORNSUN Guangzhou Science & Technology Co., Ltd.

2024.09.23-B/1

Page 1 of 6

MORNSUN Guangzhou Science & Technology Co., Ltd. reserves the copyright and right of final interpretation

AC/DC 350W Enclosed Switching Power Supply

LMF350-23BxxUH, LMF350-23BxxUH-C, LMF350-23BxxUH-YW Series

MORNSUN®

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full load range	5V	--	±2	--	%
		12V/24V/28V/36V/48V/54V	--	±1	--	
Line Regulation	Rated load	5V	--	±0.5	--	
		12V/24V/28V/36V/48V/54V	--	±0.3	--	
Load Regulation	0% - 100% load	5V	--	±1	--	
		12V/28V/24V/36V/48V/54V	--	±0.5	--	
Ripple & Noise*	20MHz bandwidth (peak-to-peak value), 25℃	5V/12V	--	--	200	mV
		24V/28V/36V/48V/54V	--	--	240	
Temperature Coefficient			--	±0.03	--	%/℃
Minimum Load			0	--	--	%
Hold-up Time	Room temperature, full load, 115VAC/230VAC		12	--	--	ms
Short Circuit Protection			Hiccup, continuous, self-recover			
Over-current Protection	Room temperature, high temperature		110% - 200% Io, the protection lasts for 1s, self-recovery after the abnormality is removed			
	Low temperature		>110% Io, the protection lasts for 1s, self-recovery after the abnormality is removed			
Over-voltage Protection	5V		≤6.5VDC (Output voltage hiccup)			
	12V		≤15.6VDC (Output voltage hiccup)			
	24V		≤31.2VDC (Output voltage hiccup)			
	28V		≤35.0VDC (Output voltage hiccup)			
	36V		≤46.8VDC (Output voltage hiccup)			
	48V		≤62.4VDC (Output voltage hiccup)			
	54V		≤63VDC (Output voltage hiccup)			
Over-temperature Protection			Output voltage turn off, self-recovery 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 - ⊕					1500	--	--	
Insulation Resistance	Input - ⊕	Ta= 25 ± 5℃ Relative humidity: < 95%RH, no condensation Test voltage: 500VDC				50	--	--	M Ω
	Input - output					50	--	--	
	Output - ⊕					50	--	--	
Operating Temperature						-40	--	+85	℃
Storage Temperature						-40	--	+85	
Operating Humidity		Non-condensing				10	--	95	%RH
Storage Humidity		Non-condensing				20	--	90	
Power Derating	Operating temperature derating	With aluminum plate*			+55℃ to +85℃	2.33	--	--	% /℃
		Without aluminum plate	230VAC	Others	+55℃ to +70℃	3.33	--	--	
					+70℃ to +85℃	1.33	--	--	
			5V	+55℃ to +70℃	2	--	--		
				+70℃ to +85℃	1.33	--	--		
		110VAC		+55℃ to +85℃	1.33	--	--		

MORNSUN®

MORNSUN Guangzhou Science & Technology Co., Ltd.

2024.09.23-B/1

Page 2 of 6

MORNSUN Guangzhou Science & Technology Co., Ltd. reserves the copyright and right of final interpretation

AC/DC 350W Enclosed Switching Power Supply
LMF350-23BxxUH, LMF350-23BxxUH-C, LMF350-23BxxUH-YW
Series

MORNSUN®

	Input voltage derating	85 - 100VAC	2	--	--	%/VAC
Safety Standard	5V/12V/24V/36V/48V		GB4943.1, IS13252 (Part1) safety approved & EN62368-1, BS EN62368-1; Design refer to UL62368-1, EN61558-1, EN60335-1			
	28V		EN62368-1, BS EN62368-1; Design refer to UL62368-1, EN61558-1, EN60335-1, GB4943.1, IS13252 (Part1)			
	54V		Design refer to EN61558-1, EN60335-1, UL/BS EN/EN62368-1, GB4943.1, IS13252 (Part1)			
Safety Class			CLASS I			
MTBF	MIL-HDBK-217F@25℃		≥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.						

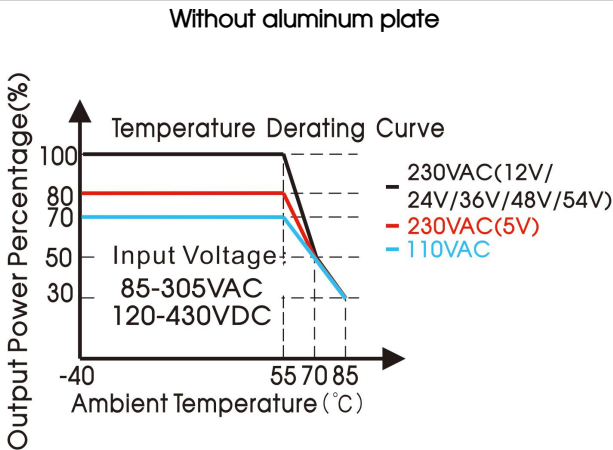
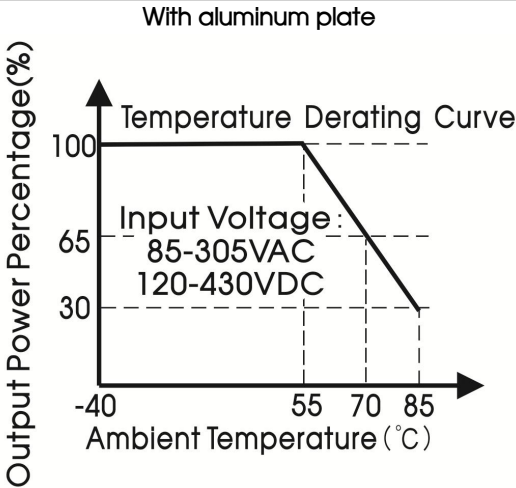
Mechanical Specifications

Case Material	Metal (AL6063, SGCC)
Dimensions	220.00mm x 62.00mm x 31.00mm
Weight	680g (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/EN6100-3-3		
Immunity	ESD	IEC/EN61000-4-2	Contact ±6KV/Air ±8KV	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 PE ± 4KV	perf. Criteria A
	CS	IEC/EN61000-4-6	10 Vr.m.s	perf. Criteria A
	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



MORNSUN®

MORNSUN Guangzhou Science & Technology Co., Ltd.

2024.09.23-B/1

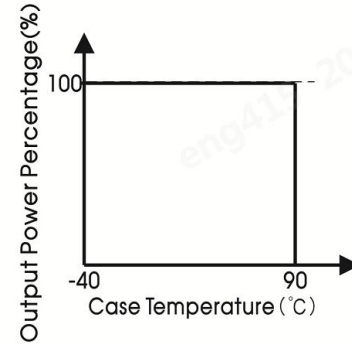
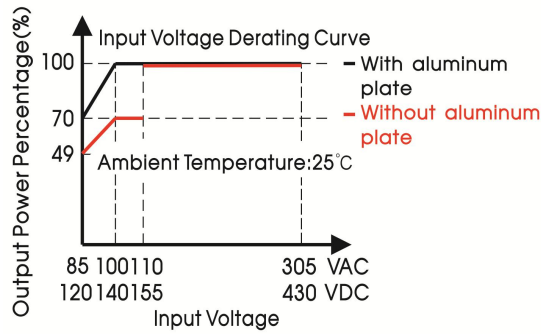
Page 3 of 6

MORNSUN Guangzhou Science & Technology Co., Ltd. reserves the copyright and right of final interpretation

AC/DC 350W Enclosed Switching Power Supply

LMF350-23BxxUH, LMF350-23BxxUH-C, LMF350-23BxxUH-YW Series

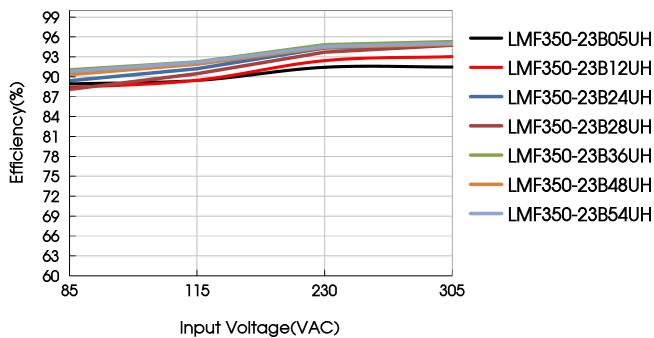
MORNSUN®



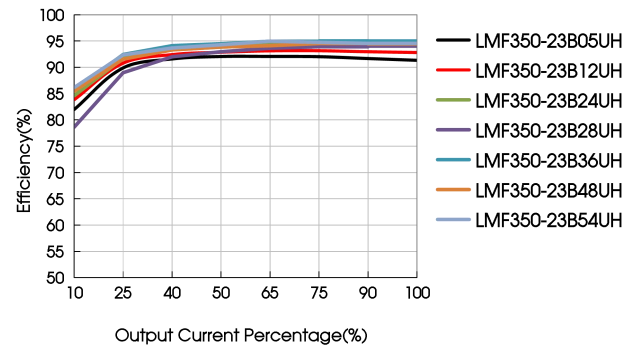
Note: 1. With an AC input voltage between 85-100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;

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

Efficiency Vs Input Voltage (Full Load)



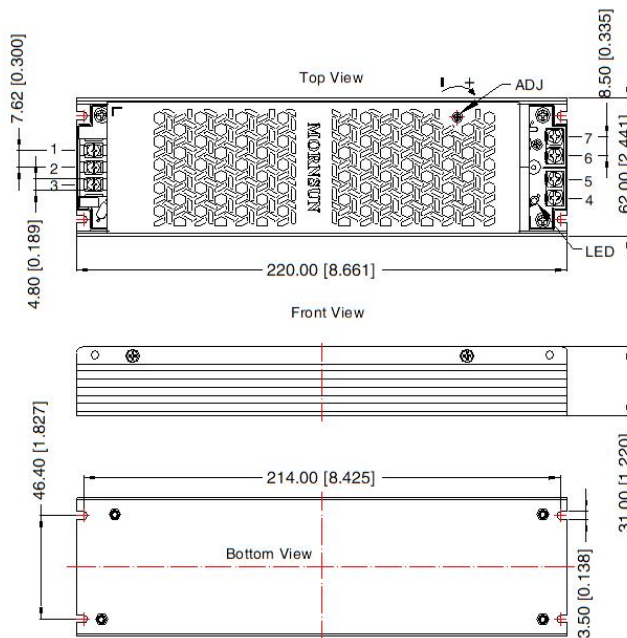
Efficiency Vs Output Load (V_{in}=230VAC)



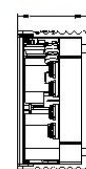
Dimensions and Recommended Layout

LMF350-23BxxUH, LMF350-23BxxUH-YW Series

THIRD ANGLE PROJECTION



Right View



Pin-Out	
Pin	Mark
1	⊕
2	AC(N)
3	AC(L)
4	+Vo
5	+Vo
6	-Vo
7	-Vo

Connector wires range

Pro. No	Input connector	Output connector	Output connector (double wires)	Pk.
5V	22-14AWG	12AWG	-Vo	double wires
12V		16-12AWG		
24/28/30/5/36/48/55V		18-12AWG		
Screw/torque	M3.0, Max 0.5N·m	M3.5, Max 0.8N·m	+Vo	double wires

Note:

Unit: mm[inch]

ADJ: Output adjustable resistor

General tolerances: $\pm 1.00 [\pm 0.039]$

MORNSUN®

MORNSUN Guangzhou Science & Technology Co., Ltd.

2024.09.23-B/1

Page 4 of 6

MORNSUN Guangzhou Science & Technology Co., Ltd. reserves the copyright and right of final interpretation

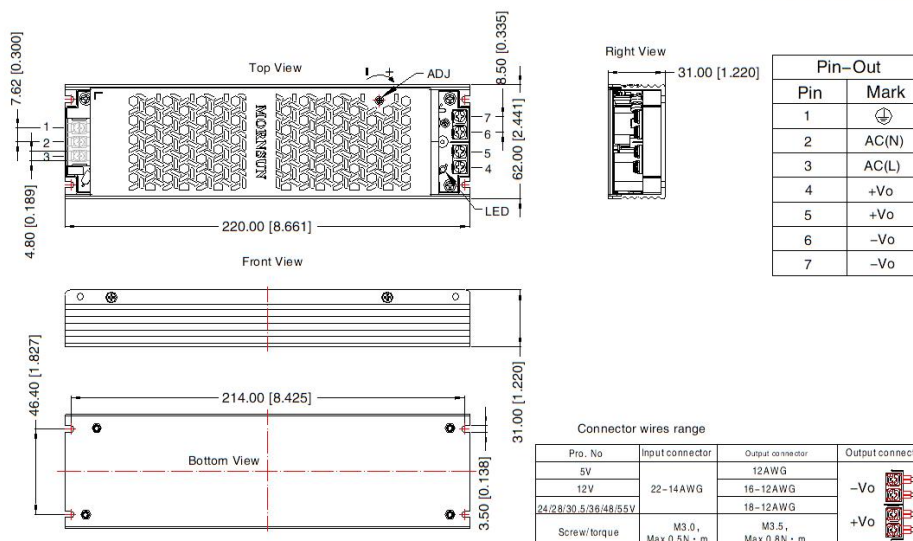
AC/DC 350W Enclosed Switching Power Supply

LMF350-23BxxUH, LMF350-23BxxUH-C, LMF350-23BxxUH-YW Series

MORNSUN®

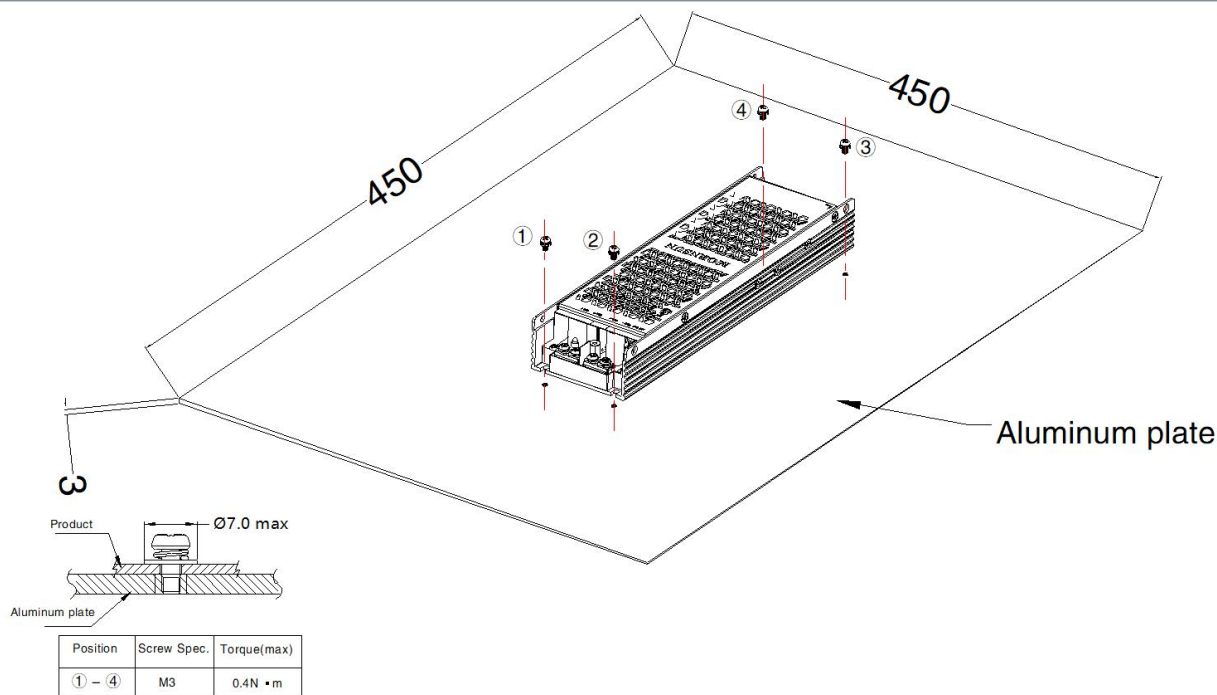
LMF350-23BxxUH-C Series

THIRD ANGLE PROJECTION 



Note:
Unit: mm[inch]
ADJ: Output adjustable resistor
General tolerances: $\pm 1.00 [\pm 0.039]$

Installation Diagram



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 combination screws, and the product must be firmly installed at the center of the aluminum plate.

MORNSUN®

MORNSUN Guangzhou Science & Technology Co., Ltd.

2024.09.23-B/1

Page 5 of 6

MORNSUN Guangzhou Science & Technology Co., Ltd. reserves the copyright and right of final interpretation

Note:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220233;
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of $T_a=25^{\circ}\text{C}$, humidity $<75\%\text{RH}$ with nominal input voltage and rated output load;
3. The room temperature derating of $5^{\circ}\text{C}/1000\text{m}$ is needed for operating altitude greater than 2000m;
4. All index testing methods in this datasheet are based on our company corporate standards;
5. 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;
6. We can provide product customization service, please contact our technicians directly for specific information;
7. Products are related to laws and regulations: see "Features" and "EMC";
8. The out case needs to be connected to PE ($\perp$) of system when the terminal equipment in operating;
9. The output voltage can be adjusted by the ADJ, clockwise to increase;
10. If product involves multi-brand materials and there are differences in color etc., please refer to the standards of each manufacturer;
11. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
12. 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.

Mornsun Guangzhou Science & Technology Co., Ltd.

Address: No. 8 Nanyun 4th Road, Huangpu District, Guangzhou, China

Tel: 86-20-38601850

Fax: 86-20-38601272

E-mail: info@mornsun.cn

www.mornsun-power.com