



FEATURES

- Universal 180 - 264VAC or 240 - 370VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating temperature range: -30°C to +70°C
- Low standby power consumption, high efficiency
- High I/O isolation test voltage up to 3000VAC
- Output short circuit, over-current, over-voltage protection
- The output voltage can be switched between 12V and 24V
- Safety according to IEC/EN/UL62368, GB4943
- Operating altitude up to 5000m
- LED indicator for power on
- Withstand 300VAC surge input for 5s

LM150-12M1224 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, high efficiency and high reliability. The converter offers excellent EMC performance and meet IEC/EN61000-4, CISPR32/EN55032, IEC/UL/EN62368, GB4943 standards.

Selection Guide

Certification	Part No.*	Output Power (W)	Nominal Output Voltage (Vo)	Nominal Output Current (Io)	Efficiency at 230VAC (%) Typ.	Max. Capacitive Load* (µF)
CE (Pending)	LM150-12M1224	150	12V	12.5A	81	10000
			24V	6.25A	84	5000

Note: 1.*Capacitive load 5000/10000uF, corresponding to conditions of output at 24V/6.25A, 12V/12.5A under room temperature;
2. *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		180	--	264	VAC
	DC input		240	--	370	VDC
Input Voltage Frequency			47	--	63	Hz
Input Current	230VAC		--	--	3	A
Input Inrush Current	230VAC, Normal temperature	Cold Start	--	80	--	
Hot Plug			Unavailable			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full Load Range	12V	--	±2	--	
		24V	--	±2	--	
Line Regulation	Rated Load	12V	--	±0.5	--	%
		24V	--	±0.5	--	
Load Regulation	230VAC, 0% - 100% load	12V	--	±1	--	
		24V	--	±1	--	
Output Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	12V	--	200	240	mV
		24V	--	200	240	
Stand-by Power Consumption	Normal temperature, 12V/24V output		--	--	2	W
Temperature Coefficient			--	±0.03	--	%/°C

Minimum Load	12V/24V	0	--	--	%
Hold-up Time	230VAC, Normal temperature, Full Load	--	20	--	ms
Short Circuit Protection	recover time <15s after the short circuit disappear.	Hiccup, continuous, self-recover			
Over-current Protection*	Normal temperature	110%-300% I _o , self-recover			
Over-voltage Protection	12V	≤35V(Output voltage Hiccup or Clamp, self-recover)			
	24V	≤35V (Output voltage Hiccup or Clamp, self-recover)			
Output Voltage Switching*	Terminal CN101 disconnect	Output 12V/0-12.5A			
	Terminal CN101 short circuit	Output 24V/0-6.25A			

Note: 1. *The "Tip and barrel method" is used for ripple and noise test, output parallel 47μF electrolytic capacitor and 0.1μF ceramic capacitor, please refer to Enclosed Switching Power Supply Application Notes for specific information.
 2. *Over-current Protection: Test at rated output voltage, I_o is rated output current load.
 3. *It is forbidden to switch the output voltage while the product is working.

General Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Isolation Test	Input - ⊕	Electric strength test for 1min., leakage current <10mA	1500	--	--	VAC
	Input-output		3000	--	--	
	output - ⊕		500	--	--	
Insulation Resistance	Input - ⊕	500VDC,	100	--	--	MΩ
	Input - output	25±5℃,	100	--	--	
	output - ⊕	Humidity < 95%RH, non-condensing	100	--	--	
Operating Temperature			-30	--	+70	℃
Storage Temperature			-40	--	+85	
Operating Humidity	Non-condensing		20	--	90	%RH
Storage Humidity			10	--	95	
Power Derating	Operating temperature derating	-30℃ to -20℃	2.0	--	--	% / ℃
		-20℃ to 0℃	0	--	--	
		+50℃ to +70℃	2.5	--	--	
	Input voltage derating	180VAC-264VAC	0	--	--	%/VAC
		240VDC-370VDC	0	--	--	%/VDC
Safety Standard			Meet IEC/EN/UL62368/GB4943			
Safety Class			CLASS I			
MTBF	MIL-HDBK-217F@25℃		>300,000 h			

Mechanical Specifications

Case Material	Metal (AL1100, SGCC)
Dimensions	199.00 x 99.00 x 50.00mm
Weight	625g (Typ.)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

Emissions (EMI)	CE	CISPR32/EN55032 CLASS A	
	RE	CISPR32/EN55032 CLASS A	
	Harmonic current	IEC/EN61000-3-2 CLASS A (≤80% load)	
Immunity (EMS)	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

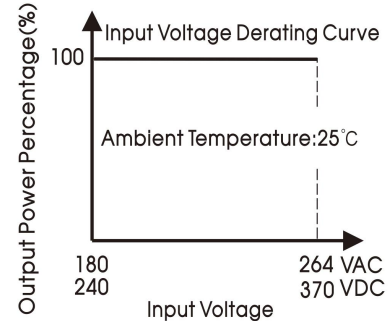
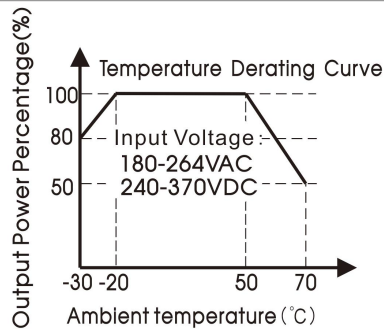
AC/DC 150W Enclosed Switching Power Supply

LM150-12M1224, LM150-12M1224-C, LM150-12M1224-Q

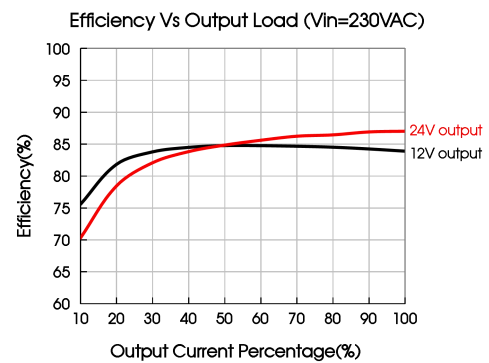
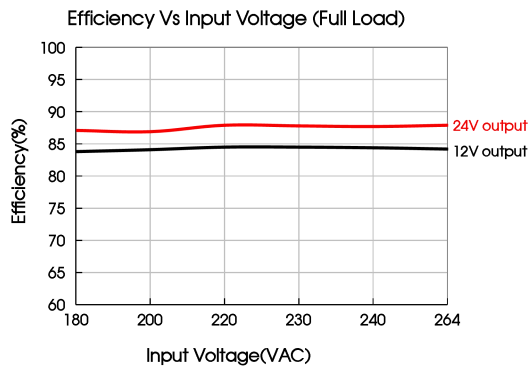
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Surge	IEC/EN 61000-4-5	line to line $\pm 2KV$ /line to ground $\pm 4KV$	perf. Criteria A
CS	IEC/EN61000-4-6	10 Vr.m.s	perf. Criteria A
DIP	IEC/EN61000-4-11	0%, 70%	perf. Criteria B

Product Characteristic Curve

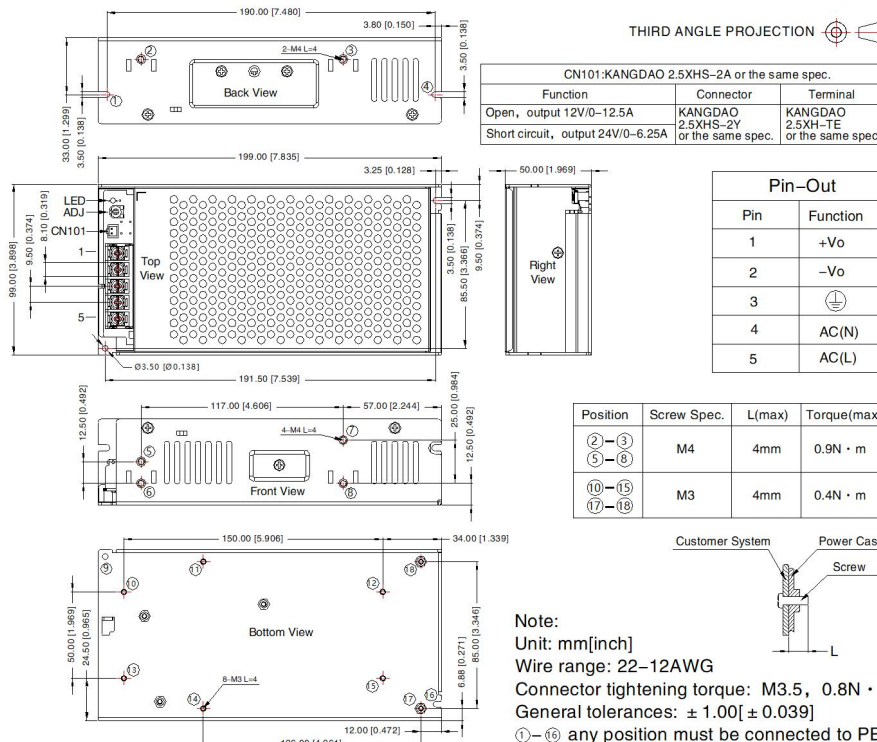


Note: ① This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.



Dimensions and Recommended Layout

LM150-12M1224、LM150-12M1224-Q



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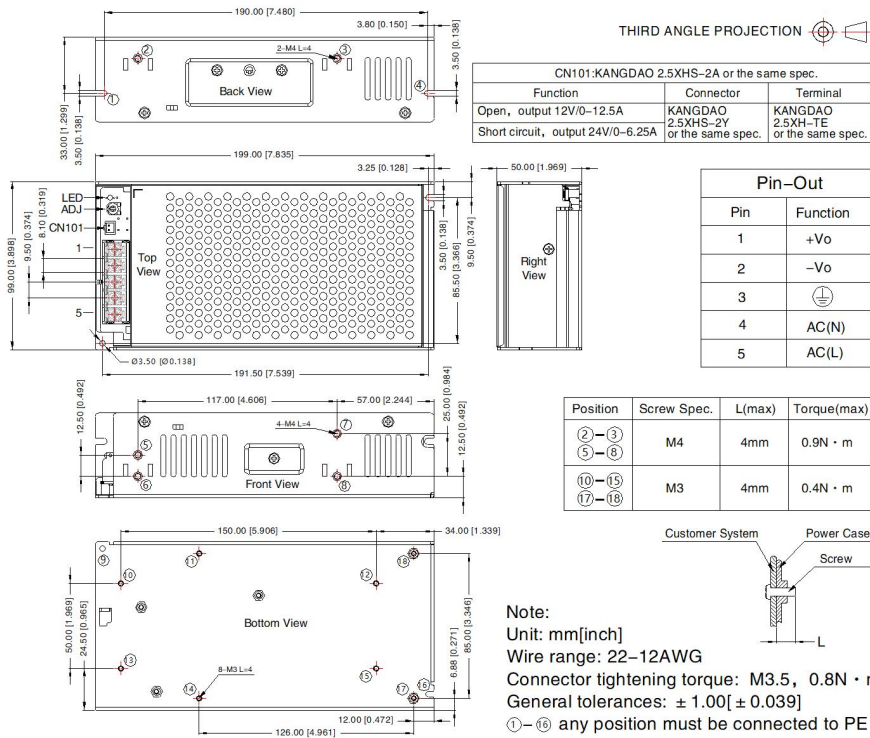
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LM150-12M1224-C



Note:

- For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220102;
- 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 ambient 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;
- It is forbidden to switch the output voltage while the product is working;
- 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 (\oplus) of system when the terminal equipment in operating;
- 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 final 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. 5, Kehui St. 1, Kehui Development Center, Science Ave., Guangzhou Science City, Huangpu District, Guangzhou, P. R. China
Tel: 86-20-38601850 Fax: 86-20-38601272 E-mail: info@mornsun.cn www.mornsun-power.com