

AC/DC 150W Enclosed Switching Power Supply

LM150-12BxxN(-Q) Series

MORNSUN®



CE Report
EN62368-1

UK CA Report
BS EN 62368-1

CCC
GB4943.1

RoHS



FEATURES

- Input voltage range: 165 - 264VAC or 180 - 370VDC
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -25°C to +70°C
- LED indicator for power on
- Operating up to 5000m altitude
- Output short circuit, over-current, over-voltage protection
- 3 years warranty

LM150-12BxxN series is one of Mornsun's enclosed AC-DC switching power supplies. They feature 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/EN62368, EN61558, GB4943 standards and they are widely used in areas of Intelligent cabinet, self-service machine, gate machine, laser, etc.

Selection Guide

Certification	Part No.	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Efficiency at 230VAC (%) Typ.	Max. Capacitive Load (uF)
CCC/ EN/BS EN	LM150-12B12N	150	12V/12.5A	85	10000
	LM150-12B24N	156	24V/6.5A	88	2500
--	LM150-12B15N*	150	15V/10A	87	6000
	LM150-12B36N*	154.8	36V/4.3A	88	1200
	LM150-12B48N*	158.4	48V/3.3A	89	600

Note:

1. Use suffix "Q" for conformal coating.
2. *The 15V, 36V, and 48V are currently under development, for detail please consult Mornsun sales or FAE.
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		165	--	264	VAC
	DC input		180	--	370	VDC
Input Voltage Frequency			47	--	63	Hz
Input Current	230VAC		--	--	2	A
Inrush Current	230VAC	Cold start	--	60	--	
Input Fuse	Built-in fuse		--	3.15	--	
Hot Plug			Unavailable			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full load range		--	±2	--	%
Line Regulation	Rated load		--	±0.5	--	
Load Regulation	0% - 100% load		--	±1	--	
Minimum Load			0	--	--	
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	12V/15V	--	150	--	mV
		24V/36V/48V	--	200	--	
Temperature Coefficient			--	±0.03	--	%/°C
Stand-by Power Consumption	230VAC		--	--	0.5	W
Hold-up Time	230VAC		--	20	--	ms
Short Circuit Protection	Recovery time <5s after the short circuit clearance		Hiccup, continuous, self-recover			
Over-current Protection			≥ 110% Io, hiccup, self-recover			

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Over-voltage Protection	12V	≤16VDC	Hiccup, self-recover after fault clearance
	15V	≤25VDC	
	24V	≤35VDC	
	36V	≤48VDC	
	48V	≤60VDC	

Note: *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.

General Specifications

Item	Operating Conditions			Min.	Typ.	Max.	Unit	
Isolation	Input - ⊕	Electric strength test for 1min., leakage current <5mA			2000	--	--	VAC
	Input - output							
	Output - ⊕							
Insulation Resistance	Input - ⊕	Test voltage: 500VDC			100	--	--	MΩ
	Input - output							
	Output - ⊕							
Touch Leakage Current	240VAC			--	--	0.5	mA	
Operating Temperature				-25	--	+70	°C	
Storage Temperature				-40	--	+85		
Storage Humidity	Non-condensing			10	--	95	%RH	
Operating Humidity				20	--	90		
Switching Frequency				--	130	--	kHz	
Power Derating	Operating temperature derating	12V	+45°C to +70°C		2	--	--	% / °C
		24V	+50°C to +70°C		2.5	--	--	
Safety Standard	12V/24V			GB4943.1 safety approved & EN/BS EN62368-1 (Report) Design refer to UL/IEC62368-1, EN61558-1				
Safety Class				CLASS I				
MTBF	MIL-HDBK-217F@25°C			≥300,000 h				
Warranty	Ambient temperature: <45°C			3 years				

Mechanical Specifications

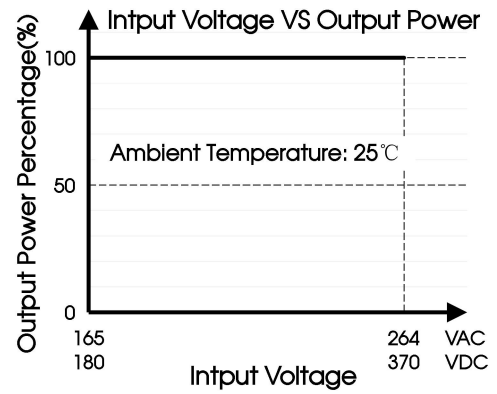
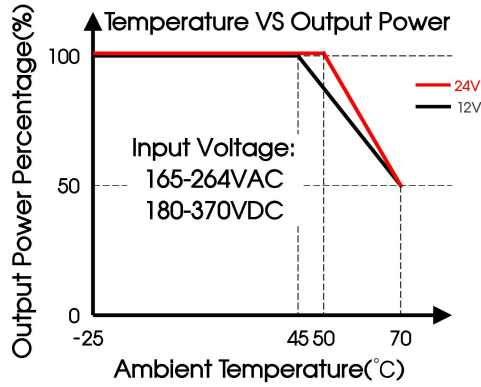
Case Material	Metal (AL1100, SGCC)
Dimensions	159.00 x 97.00 x 30.00mm
Weight	320g (Typ.)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

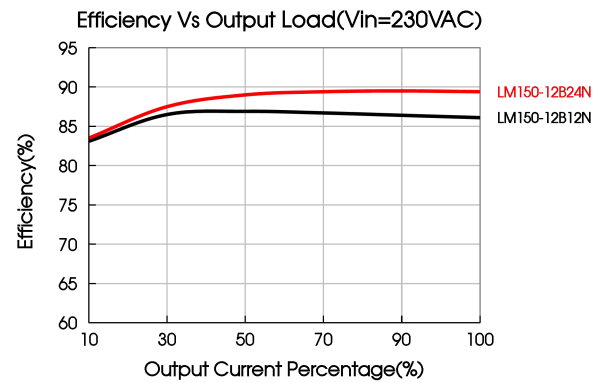
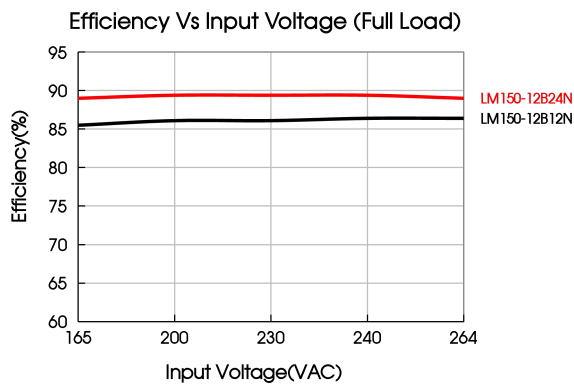
Emissions	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
	Harmonic current	IEC/EN61000-3-2	CLASS A (≤80% Load)	
Immunity	ESD	IEC/EN61000-4-2	Contact ±6KV/Air ±8KV	perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	±4KV	perf. Criteria A
	Surge	IEC/EN61000-4-5	line to line ±2KV/line to PE ±4KV	perf. Criteria A
	CS	IEC/EN61000-4-6	10Vr.m.s	perf. Criteria A
	MS	IEC/EN61000-4-8	30A/m	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 (Un is the maximum input nominal voltage)	perf. Criteria B
	Voltage interruption	IEC61000-6-2/IEC61000-4-11	0%Un, 250/300 cycle(50/60Hz) (Un is the maximum input nominal voltage)	perf. Criteria C

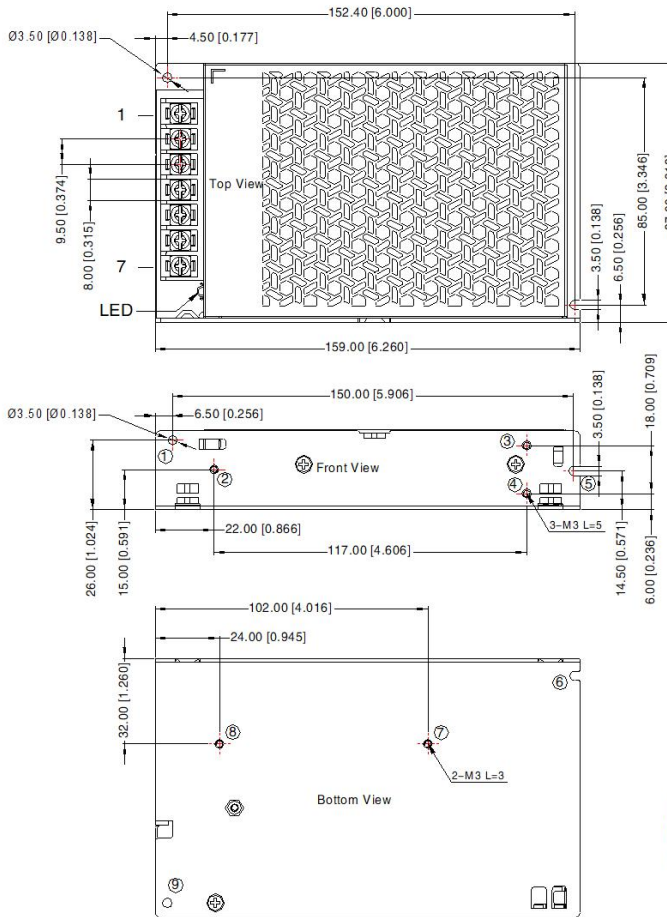
Product Characteristic Curve



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



Dimensions and Recommended Layout

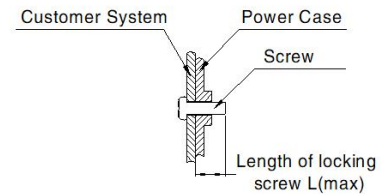


THIRD ANGLE PROJECTION

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

①-⑨ any position must be connected to the earth(⊕)

Position	Screw Spec.	Screw in length L(max)	Recommended torque
②-④	M3	5mm	0.4N·m ± 10%
⑦-⑧	M3	3mm	0.4N·m ± 10%



Note:
Unit: mm[inch]
Wire range: Input: 20-10AWG(16-10AWG for pin3)
Output: 12V: 14-10AWG
24V: 18-10AWG
Terminal recommended torque: M4, 1N · m ± 10%
General tolerances: ± 1.00[± 0.039]

Note:

- For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220893;
- Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25°C, humidity<75%RH with nominal input voltage and rated output load;
- The room temperature derating of 5°C/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;
- 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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