



CE Report  
EN62368-1

UK  
CA Report  
BS EN 62368-1

RoHS



## FEATURES

- Universal 85 - 264VAC or 120 - 370VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -30°C to +70°C
- Low standby power consumption, high efficiency
- High I/O isolation test voltage up to 4000VAC
- Low ripple & noise
- Output short circuit, over-current, over-voltage, over-temperature protection
- OVC III (designed to meet EN62477)
- Operating up to 5000m altitude
- 3 years warranty

LM150-20BxxSR series is one of Mornsun's enclosed AC-DC switching power supply with all protection and self-recovery. 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/EN62368, EN60335, EN61558, 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 ADJ (V)	Efficiency at 230VAC (%) Typ.	Max. Capacitive Load (uF)
EN/BS EN	LM150-20B12SR	150	12V/12.5A	10.2-13.8	86	10000
	LM150-20B24SR	156	24V/6.5A	21.6 - 28.8	88	2400

Note: 1. \*Use suffix "Q" for conformal coating.

2. If the terminal cover is required, please order "PJA-033" 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	85	--	264	VAC
	DC Input	120	--	370	VDC
Input Voltage Frequency		47	--	63	Hz
Input Current	115VAC	--	--	4	A
	230VAC	--	--	2	
Inrush Current	115VAC	--	30	--	
	230VAC	--	60	--	
Leakage Current	240VAC	<0.75mA			
Hot Plug		Unavailable			

## Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full load range	--	±1	--	%
Line Regulation	Rated load	--	±0.5	--	
Load Regulation	0% - 100% load	--	±0.5	--	
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	12V	--	150	mV
		24V	--	200	
Temperature Coefficient		--	±0.03	--	%/°C
Minimum Load		0	--	--	%
Stand-by Power Consumption		--	--	0.5	W

Hold-up Time	115VAC	8	--	--	ms
	230VAC	16	--	--	
Short Circuit Protection	Recovery time <5s after the short circuit clearance	Hiccup, continuous, self-recover			
Over-current Protection		≥110% I <sub>o</sub> , hiccup, self-recover			
Over-voltage Protection	12V	≤18VDC	Hiccup, self-recover after fault clearance		
	24V	≤35VDC			
Over-temperature Protection		Output voltage turn off, self-recover			
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		4000	--	--	
	Output - ⊕		1250	--	--	
Insulation Resistance	Input - ⊕	Test voltage: 500VDC	100	--	--	MΩ
	Input - output		100	--	--	
	Output - ⊕		100	--	--	
Operating Temperature		-30	--	+70	°C	
Storage Temperature		-40	--	+85		
Storage Humidity	Non-condensing	10	--	95	%RH	
Operating Humidity		20	--	90		
Switching Frequency		--	65	--	kHz	
Power Derating	Operating temperature derating	85VAC-100VAC	-30°C to -25°C	5	--	% / °C
		12V	+45°C to +70°C	2	--	
		24V	+50°C to +70°C	2.5	--	
	Input voltage derating		85VAC-100VAC	1.33	--	--
Safety Standard		EN/BS EN62368-1(report) safety approved Design refer to UL/IEC62368-1, EN60335-1, EN61558-1, EN61558-2-16, IS13252 (Part1), GB4943.1				
Safety Class		CLASS I				
MTBF	MIL-HDBK-217F@25°C	>300,000 h				
Sinusoidal Vibration	10 - 500Hz, 5g, three directions of X, Y, Z axis	GB2423.10, IEC60068-2-6				
Warranty	Ambient temperature: <45°C	3 years				

## Mechanical Specifications

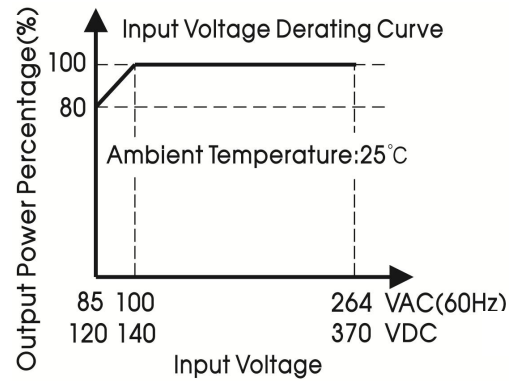
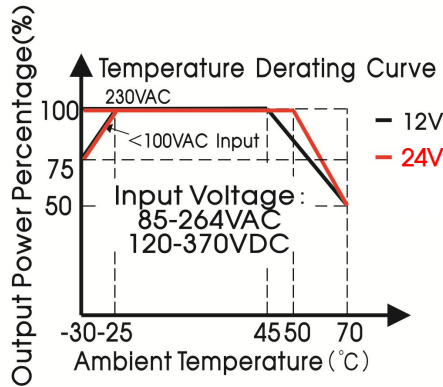
Case Material	Metal (AL1100, SGCC)
Dimensions	159.00 x 97.00 x 30.00mm
Weight	410g (Typ.)
Cooling Method	Free air convection

## Electromagnetic Compatibility (EMC)

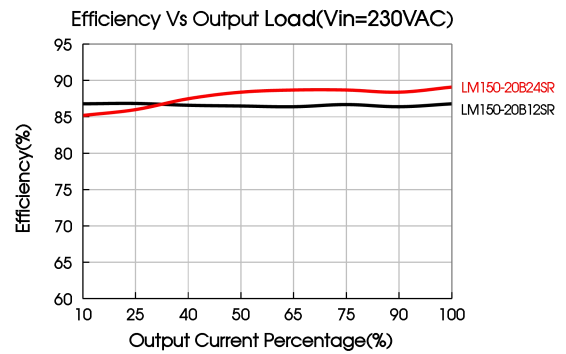
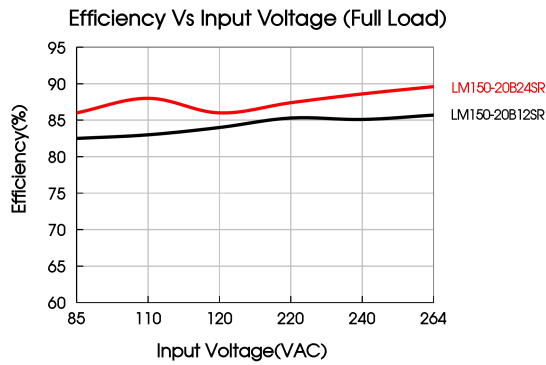
Emissions	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
	Harmonic current	IEC/EN61000-3-2	CLASS A (≤80% Load)	
Immunity	ESD	IEC/EN61000-4-2	Contact ±6KV/Air ±8KV	perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	±4KV	perf. Criteria A
	Surge	IEC/EN61000-4-5	line 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 dip, short interruption and voltage variation	IEC/EN61000-4-11	100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods	perf. Criteria B
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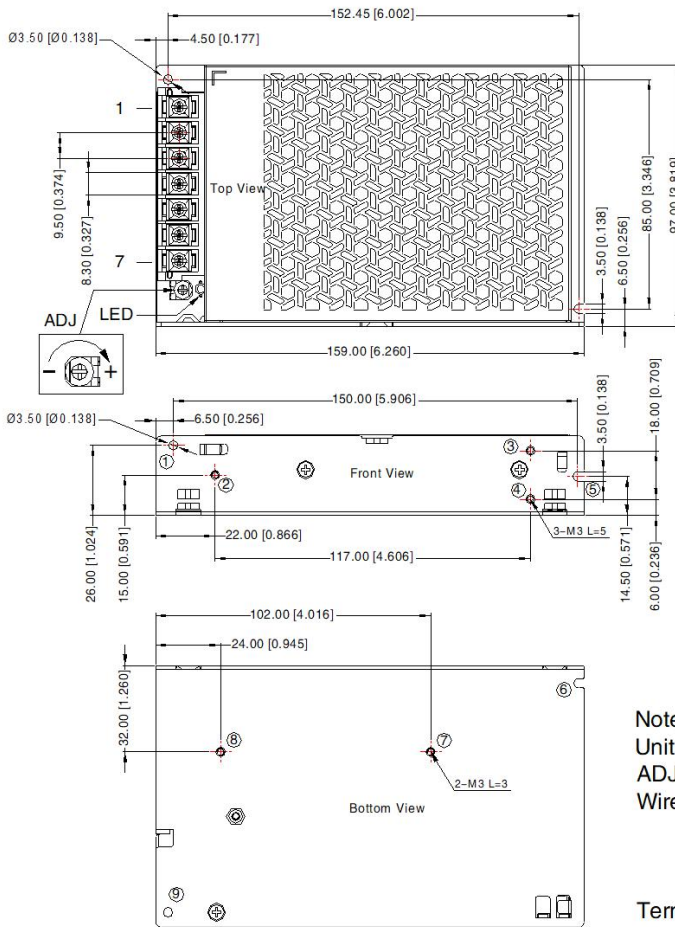
### Product Characteristic Curve



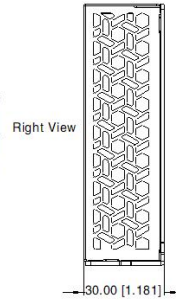
- Note: 1. With an AC input voltage between 85 -100VAC and a DC input between 120 -140VDC the output power must be derated as per the temperature derating curves;
2. This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.



Dimensions and Recommended Layout

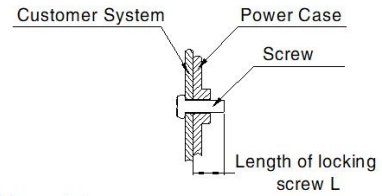


THIRD ANGLE PROJECTION



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

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]  
ADJ: Output adjustable resistor  
Wire range: Input: 20-10AWG(16-10AWG for pin3)  
Output: 12V, 15V: 14-10AWG  
24V, 36V: 18-10AWG  
48V: 20-10AWG  
Terminal recommended torque: M3.5, 0.8N · m ± 10%  
General tolerances: ± 1.00[± 0.039]  
① - ⑨ any position must be connected to PE

- Note:
- For additional information on Product Packaging please refer to [www.mornsun-power.com](http://www.mornsun-power.com). Packaging bag number: 58220725;
  - 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;
  - 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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