



### FEATURES

- Universal 85 - 264VAC or 120 - 373VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -30°C ~ +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
- Safety according to IEC/EN/UL62368, EN60335, GB4943 (CE/CCC pending)
- Withstand 300VAC surge input for 5s
- Over-voltage class III (designed to meet EN61558)
- Operating altitude up to 5000m

LM150-20Bxx series 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, low no load power consumption, high efficiency and high reliability. These converters offer excellent EMC performance and meet IEC/EN61000-4, CISPR32/EN55032, IEC/UL/EN62368, EN60335, GB4943 standards and they are widely used in areas of industrial, LED, street light control, electricity, 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)
CE/CCC (Pending)	LM150-20B12	150	12V/12.5A	10.2-13.8	86	10000
	LM150-20B15	150	15V/10A	13.5 - 18	87	6000
	LM150-20B24	156	24V/6.5A	21.6 - 28.8	88	2400
	LM150-20B36	154.8	36V/4.3A	32.4 - 39.6	88	1200
	LM150-20B48	158.4	48V/3.3A	43.2 - 52.8	89	600

### Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input voltage Range	AC input		85	--	264	VAC
	DC input		120	--	373	VDC
Input Voltage Frequency			47	--	63	Hz
Input Current	115VAC		--	--	4	A
	230VAC		--	--	2	
Inrush Current	115VAC		Cold start	--	30	--
	230VAC			--	60	--
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/15V	--	--	150	mV
			24V/36V/48V	--	--	200	

Temperature coefficient		--	±0.03	--	%/°C
Minimum Load		0	--	--	%
Stand-by Power Consumption		--	--	0.5	W
Hold-up Time	115VAC	8	--	--	ms
	230VAC	16	--	--	ms
Short Circuit Protection	Recovery time <5s after the short circuit disappear.	Hiccup, continuous, self-recovery			
Over-current Protection		110%-150% I <sub>o</sub> , self-recovery			
Over-voltage Protection	12V	≤ 16.2VDC (Output voltage turn off re-power on for recovery)			
	15V	≤ 21.75VDC (Output voltage turn off re-power on for recovery)			
	24V	≤ 33.6VDC (Output voltage turn off re-power on for recovery)			
	36V	≤ 48.6VDC (Output voltage turn off re-power on for recovery)			
	48V	≤ 60VDC (Output voltage turn off re-power on for recovery)			
Over-temperature Protection	Output voltage turn off, re-power on for recovery				
Note: *The "Tip and barrel method" is used for ripple and noise test, please refer to AC-DC Converter Application Notes for specific information.					

## General Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit	
Isolation Test	Input - 	Electric strength test for 1min., leakage current <10mA	2000	--	--	VAC	
	Input-output		4000	--	--		
	Output - 		1250	--	--		
Insulation Resistance	Input - 	At 500VDC	50	--	--	MΩ	
	Input - output		50	--	--		
	Output - 		50	--	--		
Operating Temperature			-30	--	+70	°C	
Storage Temperature			-40	--	+85		
Storage Humidity	Non-condensing		--	--	95	%RH	
Switching Frequency			--	65	--	kHz	
Power Derating	Operating temperature derating	100VAC Input only	-30°C ~ -25°C	5	--	--	% / °C
		12V	+45°C ~ +70°C	2	--	--	
		15V/24V/36V/48V	+50°C ~ +70°C	2.5	--	--	
	Input voltage derating	85VAC -100VAC		1.33	--	--	%/AC
Safety Standard			Meet IEC/EN/UL62368/EN60335/GB4943				
Safety Class			CLASS I				
MTBF	MIL-HDBK-217F@25°C		>300,000 h				

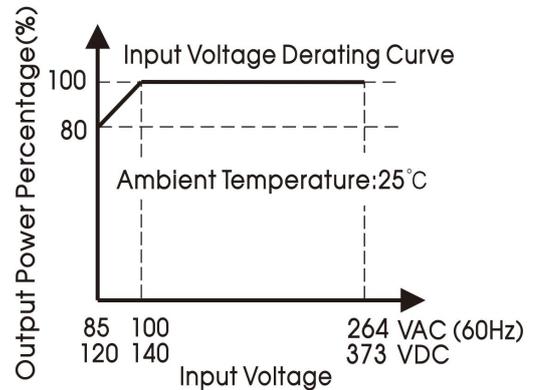
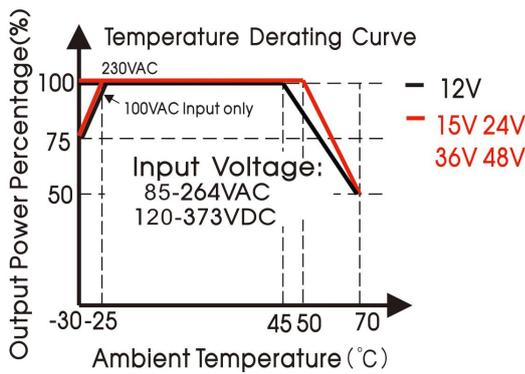
## Mechanical Specifications

Case Material	Metal (AL1100, SGCC)	
Dimensions	159.00 x 97.00 x 30.00 mm	
Weight	12V/15V	430g (Typ.)
	24V/36V/48V	410g (Typ.)
Cooling Method	Free air convection	

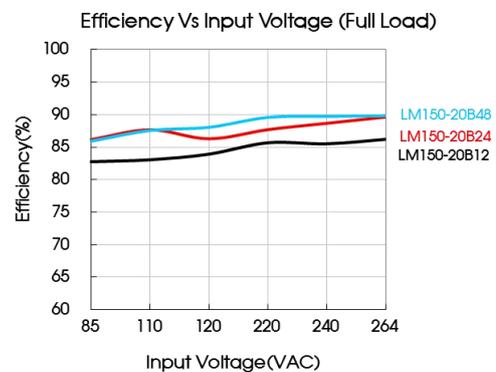
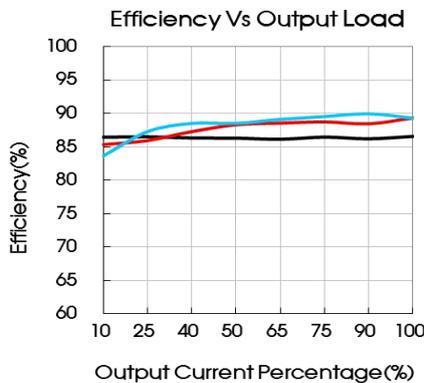
Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032 CLASS B	
	RE	CISPR32/EN55032 CLASS B	
	Harmonic current	IEC/EN61000-3-2 CLASS A (≤80% Load)	
Immunity	ESD	IEC/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 ground ±4KV	perf. Criteria A
	CS	IEC/EN61000-4-6 10 Vr.m.s	perf. Criteria A
	Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11 0%, 70%	perf. Criteria B

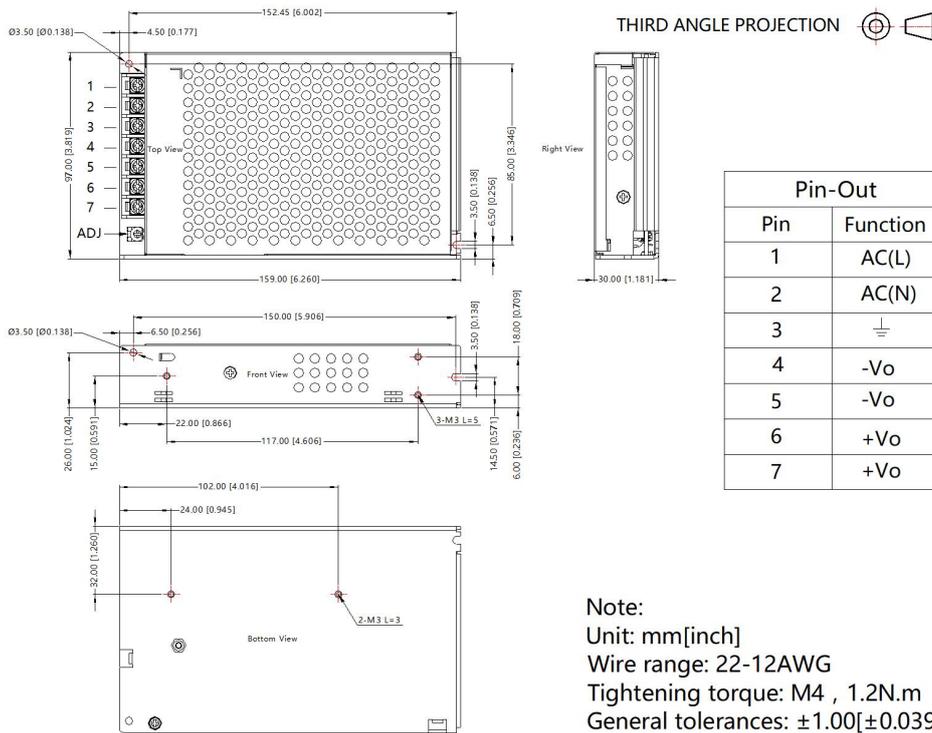
Product Characteristic Curve



Note: ① With an 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



Note:

1. For additional information on Product Packaging please refer to [www.mornsun-power.com](http://www.mornsun-power.com). Packaging bag number: 58220064;
2. 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;
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. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

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