

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 up to 5000m altitude

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, IEC62368, UL62368, EN62368, EN60335, GB4943 standards and they are widely used in 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	--		
Output 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 is less than 5s after the short circuit disappear.	Hiccup, continuous, self-recovery			
Over-current Protection		110%-150% I _o , 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 to -25°C	5	--	--	% / °C
		12V	+45°C to +70°C	2	--	--	
		15V/24V/36V/48V	+50°C to +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				

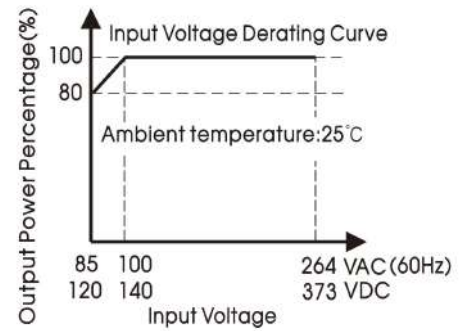
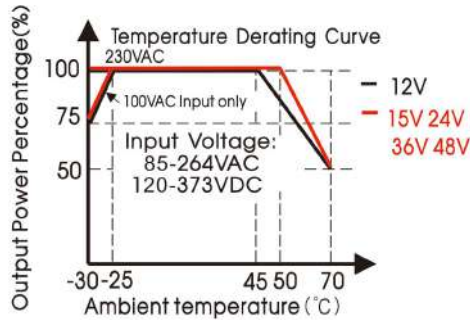
Mechanical Specifications

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	

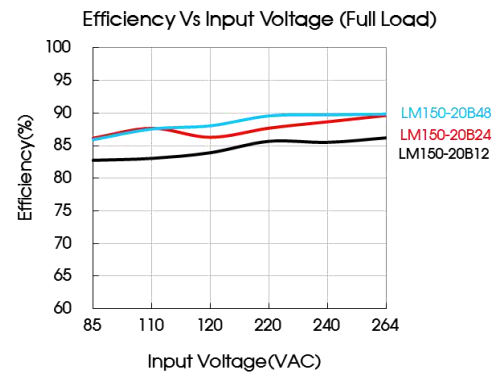
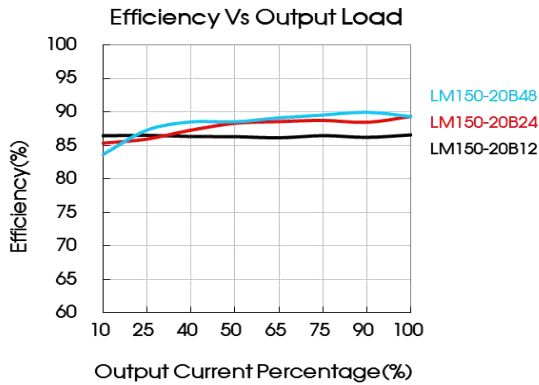
Electromagnetic Compatibility (EMC)

EMI	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
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
	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
	DIP	IEC/EN61000-4-11	0%, 70%	perf. Criteria B

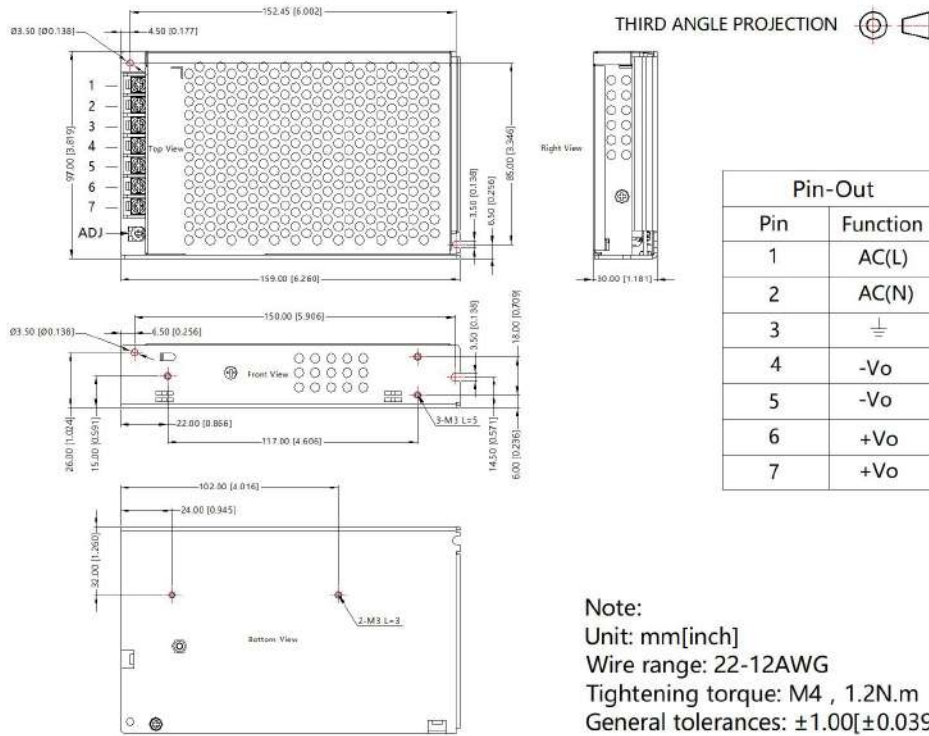
Product Characteristic Curve



Note: ① Input voltage reduction is required on the basis of temperature reduction for the input voltage is 85 - 100VAC/120 - 140VDC;
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. 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 ambient 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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