



CE Report



UKCA

GB4943.1 BS EN 62368-1



RoHS



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, 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/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

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	Cold start	--	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	Normal temperature,	--	±1	--	%
		high temperature		±3		
		Low temperature	--	--		
Line Regulation	Rated load		--	±0.5	--	
Load Regulation	0% - 100% load		--	±0.5	--	

Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	12V/15V 24V/36V/48V	-- --	-- 200	150 200	mV
Temperature Coefficient			--	±0.03	--	%/°C
Minimum Load			0	--	--	%
Stand-by Power Consumption			--	--	0.5	W
Hold-up Time	115VAC 230VAC		8 16	-- --	-- --	ms
Short Circuit Protection	Recovery time <5s after the short circuit clearance				Hiccup, continuous, self-recover	
Over-current Protection					≥110% Io, for more than 5 seconds, turn off, self-recover after restarting	
Over-voltage Protection	12V 15V 24V 36V 48V				≤18VDC ≤21.75VDC ≤33.6VDC ≤48.6VDC ≤60VDC	Hiccup, self-recover after fault clearance
Over-temperature Protection					Output voltage turn off, self-recover	

Note: *The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF 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 <10mA			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	--	--		
		15V/24V/36V/48V	+50°C to +70°C	2.5	--	--		
	Input voltage derating	85VAC-100VAC	1.33	--	--	--	%/VAC	
Safety Standard	pending			IS13252 (Part1), GB4943.1 safety approved & EN60335-1, EN61558-1, EN61558-2-16, BS EN/ EN62368-1 (report); Design refer to UL/IEC62368-1				
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				

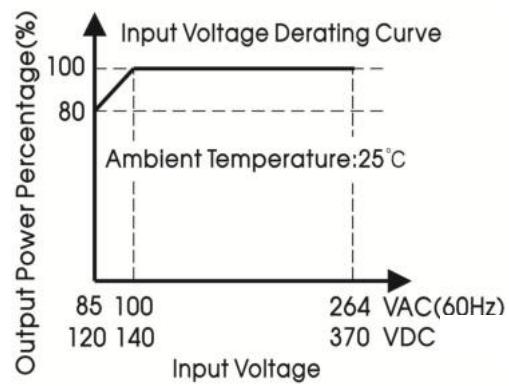
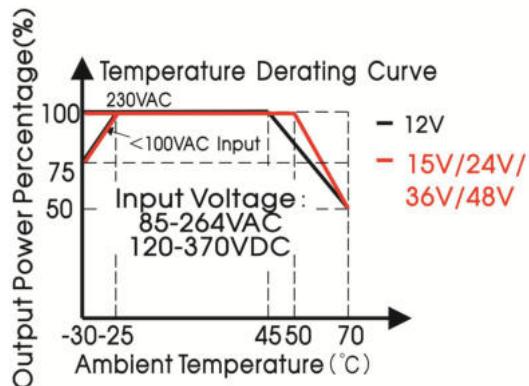
Mechanical Specifications

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)

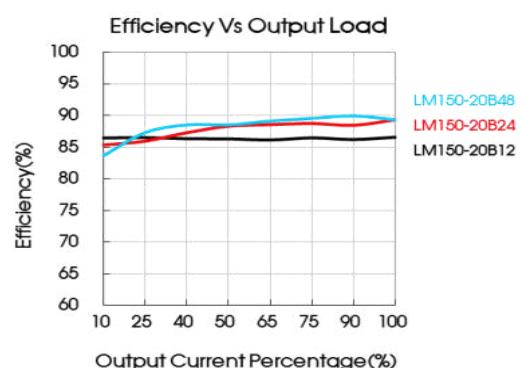
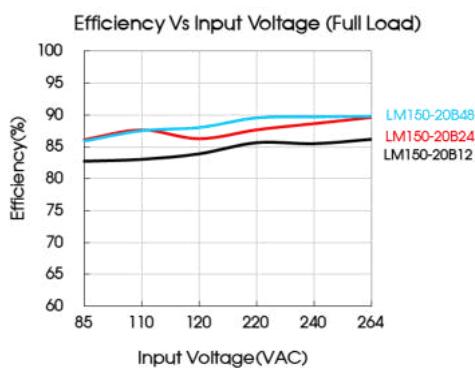
Emissions	CE	CISPR32/EN55032	CLASS B
	RE	CISPR32/EN55032	CLASS B
	Harmonic current	IEC/EN61000-3-2	CLASS A ($\leq 80\%$ Load)
Immunity	ESD	IEC/EN61000-4-2	Contact $\pm 6\text{KV}$ /Air $\pm 8\text{KV}$
	RS	IEC/EN61000-4-3	10V/m
	EFT	IEC/EN61000-4-4	$\pm 4\text{KV}$
	Surge	IEC/EN61000-4-5	line to line $\pm 2\text{KV}$ /line to PE $\pm 4\text{KV}$
	CS	IEC/EN61000-4-6	10V.r.m.s
	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

Product Characteristic Curve



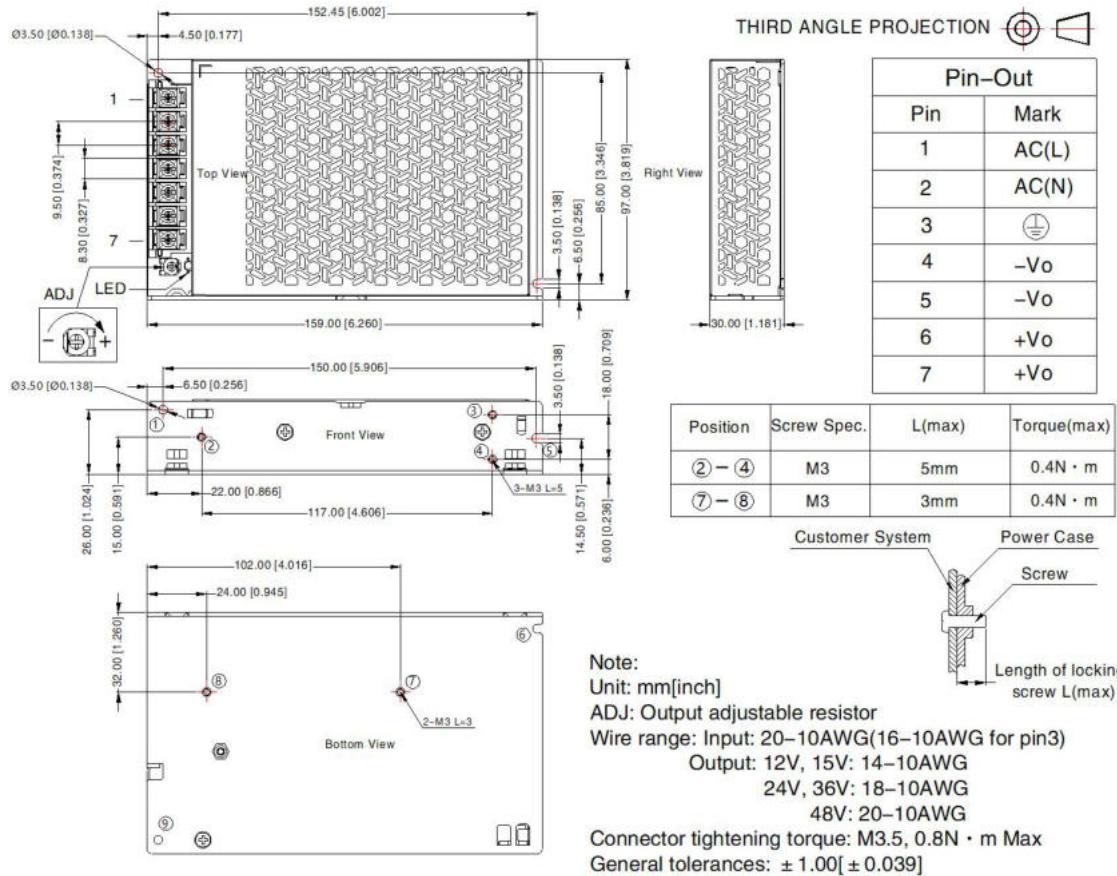
Note: 1. With an AC input voltage between 85 -100VAC and a DC input between 120 -140VDC the output power must be derated as per the temperature derating curves;

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



Dimensions and Recommended Layout

LM150-20Bxx, LM150-20Bxx-Q Series



Note:

- For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220725;
- 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 room 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;
- 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 (GND) 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.

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.cnwww.mornsun-power.com