



FEATURES

- Input voltage Range: 176 - 264VAC or 240 - 373VDC
- Accepts AC or DC input (dual-use of same terminal)
- Ultra low standby power consumption <0.75W @230VAC
- Operating ambient temperature range -30°C ~ +70°C
- Compact size with a low 1U profile
- LED indicator for power on
- Operating up to 5000m altitude
- Over-temperature protection, output short circuit, over-current, over-voltage protection
- Safety according to IEC/EN/UL62368, GB4943 (CE/CCC pending)
- Withstand 300VAC surge input for 5s
- Built-in DC fan

LM350-12Bxx series is one of Mornsun's enclosed AC-DC switching power supply. It features 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, EC/UL/EN62368, 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)	LM350-12B05	300	5V/60A	4.5 - 5.5	84	10000
	LM350-12B12	348	12V/29A	10.2 - 13.8	85.5	4000
	LM350-12B15	348	15V/23.2A	13.5 - 18	87.5	3300
	LM350-12B24	350.4	24V/14.6A	21.6 - 28.8	87	1500
	LM350-12B36	349.2	36V/9.7A	32.4 - 39.6	88	1500
	LM350-12B48	350.4	48V/7.3A	43.2 - 52.8	89	470

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	AC input	176	--	264	VAC
	DC input	240	--	373	VDC
Input Voltage Frequency		47	--	53	Hz
Input Current	230VAC	--	3.4	4	A
Inrush Current	230VAC Cold start	--	60	--	
leakage current	240VAC	--	--	2	mA
Hot Plug		Unavailable			





Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit	
Output Voltage Accuracy	Full load range	5V	--	±3	--	%
		12V	--	±1.5	--	
		15V/24V/36V/48V	--	±1	--	
Line Regulation	Rated load	--	±0.5	--		

Load Regulation	0% - 100% load	5V	--	±2	--	
		12V	--	±1	--	
		15V/24V/36V/48V	--	±0.5	--	
Output Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	5V/12V/15V/24V	--	150	--	mV
		36V/48V	--	200	--	
Temperature Coefficient			--	±0.03	--	%/°C
Minimum Load			0	--	--	%
Stand-by Power Consumption	230VAC, 25°C		--	--	0.75	W
Hold-up Time	230VAC		--	16	--	ms
Short Circuit Protection	Recovery time <5s after the short circuit disappear.		Hiccup, continuous, self-recovery			
Over-current Protection			110%-180% Io, self-recovery			
Over-voltage Protection	5V		5.75V~6.75V (Hiccup, self-recovery)			
	12V		13.8V~16.2V (Hiccup, self-recovery)			
	15V		18V~21V (Hiccup, self-recovery)			
	24V		28.8V~33.6V (Hiccup self-recovery)			
	36V		41.4V~46.8V (Hiccup, self-recovery)			
	48V		55.2V~59.5V (Hiccup, self-recovery)			
Over temperature Protection			Hiccup, self-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		3000	--	--	
	output - 		500	--	--	
Insulation Resistance	Input - 	At 500VDC	100	--	--	MΩ
	Input - output		100	--	--	
	output - 		100	--	--	
Operating Temperature			-30	--	+70	°C
Storage Temperature			-40	--	+85	
Storage Humidity	Non-condensing		--	--	95	%RH
Switching Frequency			--	65	--	kHz
Power Derating	Operating temperature derating	+50°C ~ +70°C	2	--	--	% / °C
		-20°C ~ -30°C	0.8	--	--	
Safety Standard			Meet IEC/EN/UL62368, GB4943			
Safety Class			CLASS I			
MTBF	MIL-HDBK-217F@25°C		>300,000 h			

Mechanical Specifications

Case Material	Metal (AL1100, SGCC)
Dimensions	215.00 x 115.00 x 30.00 mm
Weight	750g (Typ.)
Cooling Method	Forced air cooling

Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032	CLASS A	
	RE	CISPR32/EN55032	CLASS A	
Immunity	ESD	IEC/EN 61000-4-2	Contact $\pm 6KV$ /Air $\pm 8KV$	Perf. Criteria A
	RS	IEC/EN 61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN 61000-4-4	$\pm 2KV$	perf. Criteria A
	Surge	IEC/EN 61000-4-5	line to line $\pm 2KV$ /line to ground $\pm 4KV$	perf. Criteria A
	CS	IEC/EN61000-4-6	10 Vr.m.s	perf. Criteria A
	Voltage dips, short interruptions and voltage variations	IEC/EN61000-4-11	0%, 70%	perf. Criteria B

Remark:

1. One magnetic bead should be coupled with the output load line during CE/RE testing;
2. This power supply does not meet the harmonic current requirements specified in EN61000-3-2.

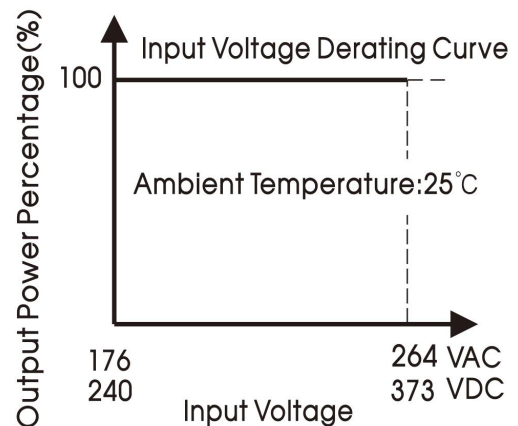
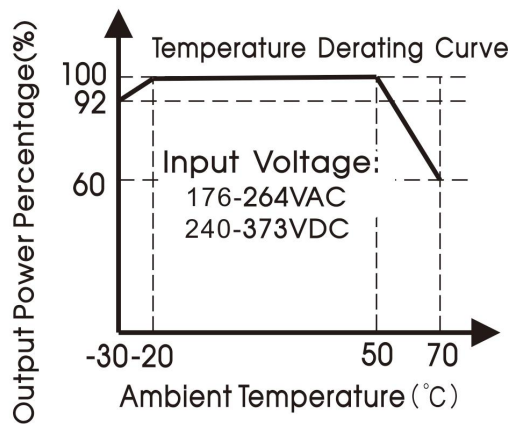
Please do not use this power supply under the following conditions:

- 1) The terminal equipment is used in the European Union.
- 2) The terminal equipment is connected to public mains supply with 220VAC or greater rated nominal voltage.
- 3) The power supply is installed in terminal equipment with average or continuous input power greater than 75W.
- 4) The power supply belongs to a part of lighting system.

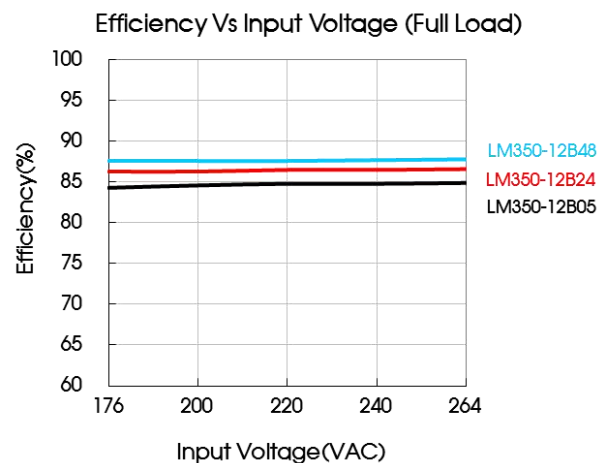
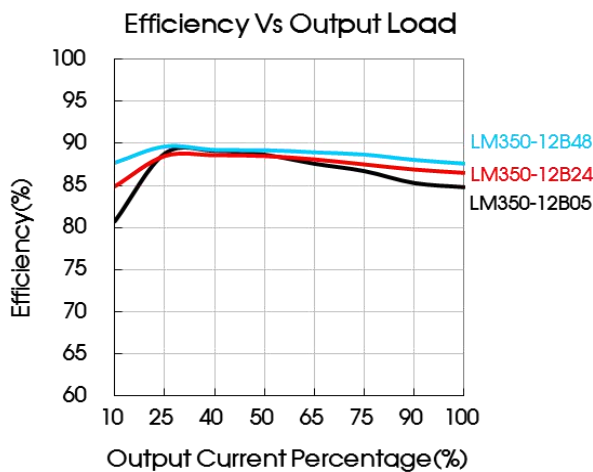
Exception: The power supply used in the following terminal equipment does not need to meet EN61000-3-2.

- 1) Professional equipment with a total rated input power greater than 1000W.
- 2) Symmetrically controlled heating element with a rated power less than or equal to 200W.

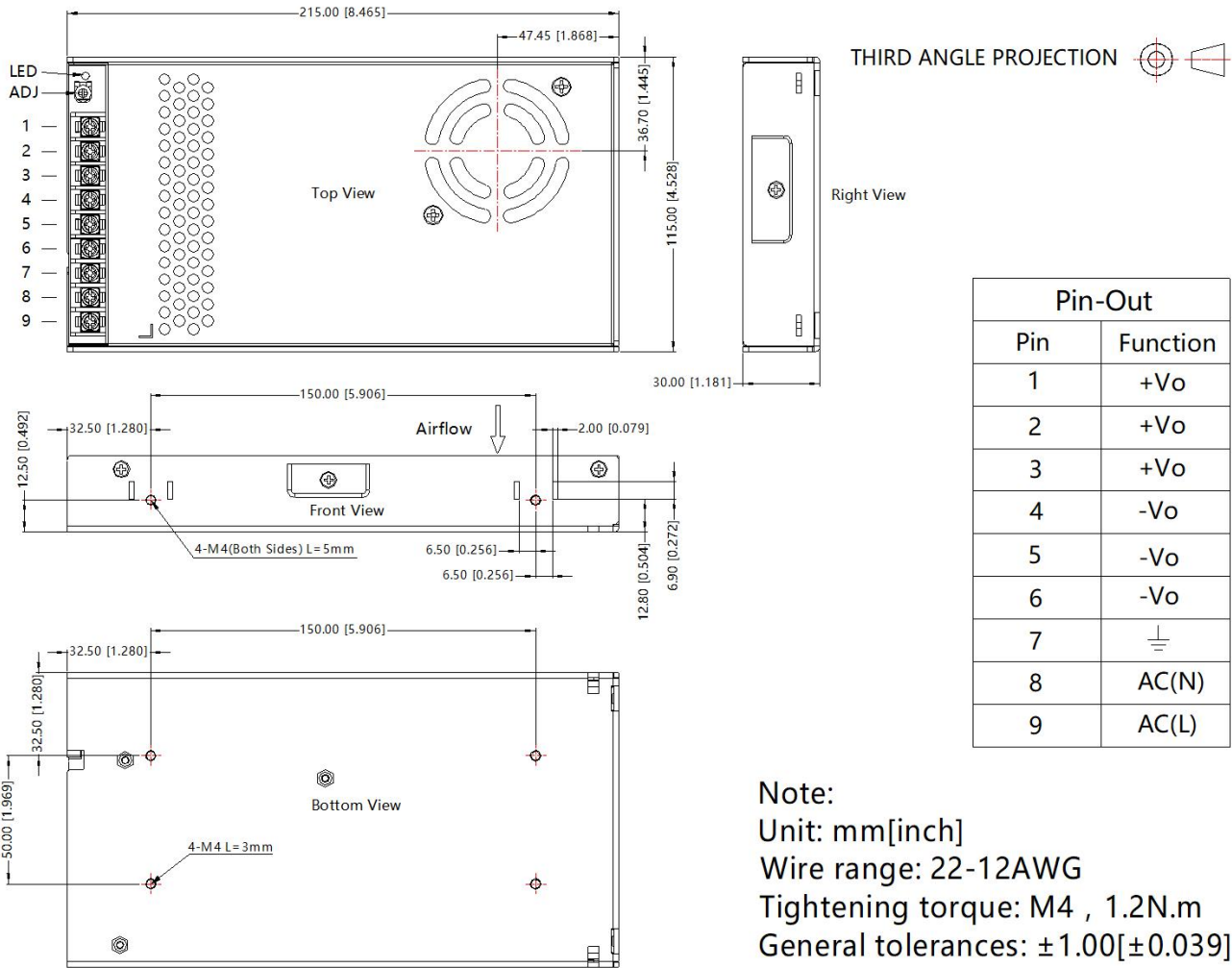
Product Characteristic Curve



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



Dimensions and Recommended Layout



Note:

- For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220063;
- 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 ambient 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";
- 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 final 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.cn

www.mornsun-power.com