AC-DC Enclosed Switching Power Supply
150W

multicomp PRO

RoHS Compliant

Features

- Universal 85 - 305V AC or 120 - 430VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating temperature range: -30°C to +70°C
- Built-in active PFC function
- High I/O isolation test voltage up to 4000VAC
- Output short circuit, over-current (Built-in constant current limiting circuit), over-voltage, over-temperature protection
- Remote ON-OFF control
- UL/EN/IEC62368, GB4943 safety approved
- Over-voltage class III (designed to meet EN61558)
- Operating altitude up to 5000m

These series is one of enclosed AC-DC switching power supply. It features universal AC input and at the same time accepts DC input voltage, cost-effective, built-in active PFC function, high efficiency and high reliability. These converters offer excellent EMC performance and meet IEC/EN61000-4, CISPR32/EN55032, UL/EN/IEC62368, EN60335, GB4943 standards and they are widely used in areas of industrial, LED, street light control, electricity, security, telecommunications, smart home etc.

Selection Guide

Part Number	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range (V)	Efficiency at 230VAC (%) Typ.	Max. Capacitive Load (μF)
MPMF150-23B12	150	12V/12.5A	10.2-13.8	85.5	5000
MPMF150-23B15	150	15V/10A	13.5-18	86	5000
MPMF150-23B24	151.2	24V/6.3A	21.6-28.8	87	5000
MPMF150-23B48	153.6	48V/3.2A	45.6-55.2	88	3000

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Voltage Range	AC input		85		305	V AC
	DC input		120		430	V DC
Input Voltage Frequency			47	--	63	Hz
Input Current	85VAC		--	--	2.5	A
	115VAC		--	--	2	
	230VAC		--	--	1.0	
Inrush Current	115V AC	Cold start	--	--	30	
	230V AC		--	--	45	
Power Factor	115V AC	At full Load	0.97	0.99	--	--
	230V AC		0.91	0.98	--	
Leakage Current	277V AC		<2 mA			
Hot Plug			Unavailable			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full load range	12V/15V	--	±2	--	%
		24V/48V	--	±1	--	
Line Regulat	Rated load		--	±0.5	--	
Load Regulation	0% - 100% load		--	±0.5	--	
Output Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	12V/15V	--	100	--	mV
		24V	--	150	--	
		48V	--	250	--	
Temperature Coefficient			--	±0.05	--	%/°C
Minimum Load			0	--	--	%
Hold-up Time	230V AC		16	--	--	ms
Short Circuit Protection	Recovery time <3s after the short circuit disappear.		Constant current, continuous, self-recover			
Over-current Protection			105%-150% Io, constant current mode, self-recover			
Over-voltage Protection	12V		≤16.8V (Output voltage turn off, re-power on for recover)			
	15V		≤24.5V (Output voltage turn off, re-power on for recover)			
	24V		≤33.6V (Output voltage turn off, re-power on for recover)			
	48V		≤60V (Output voltage turn off, re-power on for recover)			
Over-temperature Protection*	Over-temperature Protection start		--	--	85	°C
	Over-temperature Protection release		50	--	--	
Remote Control	Open or 0~0.8VDC Power ON		0	--	0.8	VDC
	4-10VDC Power OFF		4	--	10	

Note: 1. *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;
2. *Over-temperature Protection needs to be tested under rated full load conditions.

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 - ⏚	Electric Strength Test for 1min., leakage current <5mA	500	--	--	
Insulation Resistance	Input - ⏚	500V DC, 25±5°C, Humidity < 95%RH, non-condensing 500V DC	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			--	--	--	
Switching Frequency			--	--	--	kHz
Power Derating		+50°C to +70°C	2	--	--	%/°C
		-30°C to -20°C	4	--	--	
		85V AC-100V AC	1.3	--	--	%/VAC
		2000m-5000m	5	--	--	%/Km
Altitude		--	--	5000	m	
Safety Standard			UL/EN/IEC62368/EN60335/ EN61558/GB4943			
Safety Certification			UL/EN/IEC62368/GB4943			
Safety Class			CLASS I			
MTBF		MIL-HDBK-217F@25°C	>300,000 h			

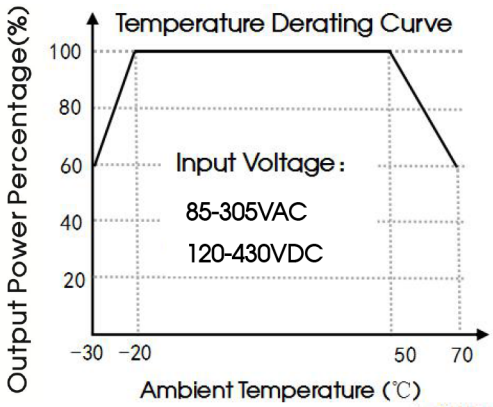
Mechanical Specifications

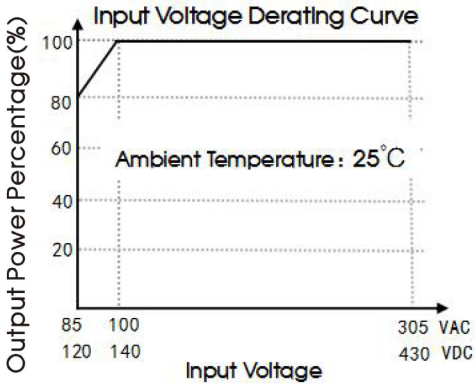
Case Material	Metal (AL1100, SGCC)
Dimensions	179.00mm × 99.00mm × 30.00mm
Weight	500g (Typ.)
Cooling Method	Free air convection

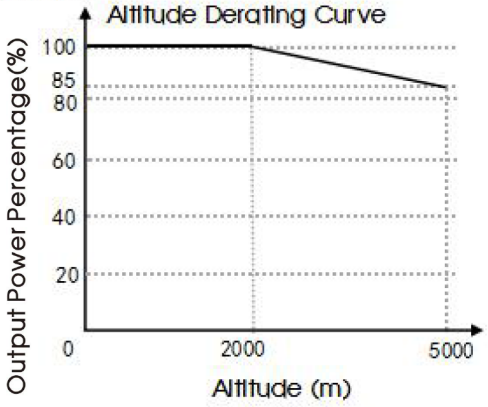
EMC Specifications

Emissions	CE	CISPR32/EN55032 CLASS B	
	RE	CISPR32/EN55032 CLASS B	
	Harmonic current	IEC/EN61000-3-2 CLASS A and CLASS D	
	Voltage flicker	IEC/EN61000-3-3	
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 ±2KV	perf. Criteria A
	Surge	IEC/EN 61000-4-5 ±1KV/±2KV	perf. Criteria A
	CS	IEC/EN61000-4-6 10 Vr.m.s	perf. Criteria A
	DIP (AC input)	IEC/EN61000-4-11 0%, 70%	perf. Criteria A

Product Characteristic Curve

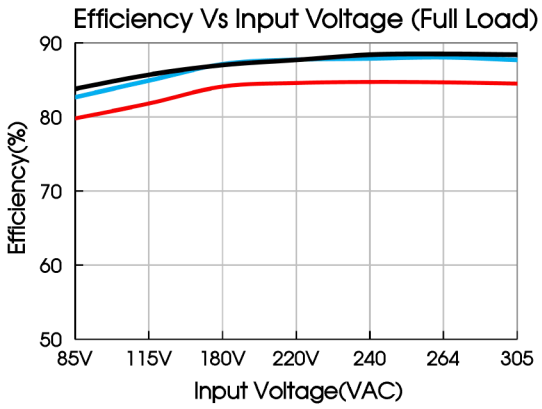


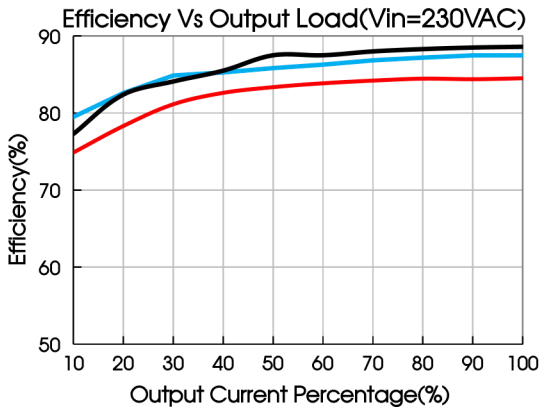




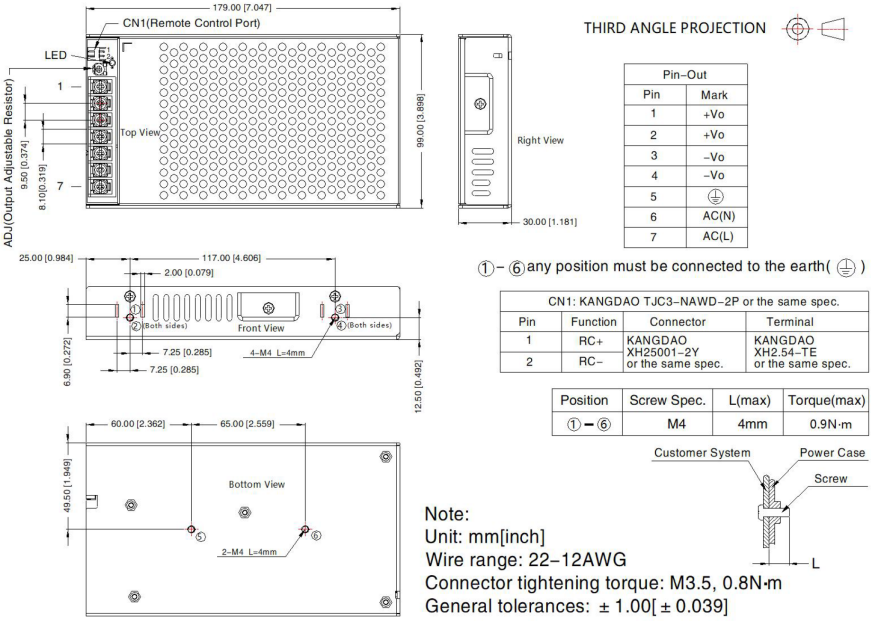
Note: 1. With an AC input voltage between 85-100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;

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





Dimensions and Recommended Layout



Notes:

1. 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;
2. All index testing methods in this datasheet are based on our company corporate standards;
3. 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;
4. We can provide product customization service, please contact our technicians directly for specific information;
5. Products are related to laws and regulations: see “Features” and “EMC”;
6. The out case needs to be connected to the earth (⏚) of system when the terminal equipment in operating;
7. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.
8. 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.

Part Number Table

Description	Part Number
AC/DC Enclosed Switching Power Supply, 150W, 12V, 12.5A	MPMF150-23B12
AC/DC Enclosed Switching Power Supply, 150W, 15V, 10A	MPMF150-23B15
AC/DC Enclosed Switching Power Supply, 150W, 24V, 6.3A	MPMF150-23B24
AC/DC Enclosed Switching Power Supply, 150W, 48V, 3.2A	MPMF150-23B48