FEATURES

- Universal 85 - 305Vac and 120 - 430Vdc
- Operating temperature range - 30℃ to +70℃
- Up to 90.5% efficiency
- No-load power consumption < 0.5W
- Over-voltage class Ⅲ
- Output short circuit, over-current, over-voltage protection
- EMI performance meets. CISPR32 / EN55032 CLASS B
- Safety IEC/EN/UL62368, EN60335, EN61558, GB4943
- Operating Altitude upto 5000m
- Supplied with Terminal cover

RS PRO Embedded Switch Mode Power Supplies

RS Stock No.: 254-3506

RS Professionally Approved Products bring to you professional quality parts across all product categories. Our product range has been tested by engineers and provides a comparable quality to the leading brands without paying a premium price.

Product Description

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, GB4943 standards and they are widely used in areas of industrial, LED, street light control, electricity, security, telecommunications, smart home etc.

Model	AC-DC Enclosed 100W
Mounting Type	Chassis Mount
MTBF	MIL-HDBK-217F@25°C > 300,000 h
Applications	Industrial control systems, instrumentation and lighting

RS Stock#	Input Voltage	Output Voltage	Output Current	Adj' range (V)	Max. Capacitive Load(µF)	Efficiency (Typ)
2543506	85 to 305V ac 120 to 430V dc	12V DC	8.5A	10.2-13.8V	6800	86.5%
2543507	85 to 305V ac 120 to 430V dc	24V DC	4.5A	21.6-28.8V	2200	89.5%
2543508	85 to 305V ac 120 to 430V dc	48V DC	2.3A	43.2-52.8V	470	90.5%

Input Specifications

Item	Operating Conditions		Min	Typ	Max.	Unit
Input Voltage Range	AC Input		85	-	305	VAC
	DC Input		120	-	430	VDC
Input Voltage Frequency			47	-	63	Hz
Input Current	115VAC		-	-	3	A
	230VAC		-	-	1.5	
Inrush Current	115VAC	Cold Start	-	35	-	
	230VAC		-	65	-	
Leakage Current	277VAC		＜0.75mA			
Hot Plug			Unavailable			

Output Specifications

Item	Operating Conditions		Min	Typ	Max.	Unit
Output Voltage Accuracy	Full Load Range	12V/24V/48V	-	±1	-	%
Line Regulation	Rated Load	12V/24V/48V	-	±0.5	-	
Load Regulation	0% - 100% load	12V/24V/48V	-	±0.5	-	

Output Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	12V	-	120	-	mV
		24V	-	150	-	
		48V	-	200	-	
Temperature Coefficient			-	±0.03	-	%/℃
Minimum Load			0	-	-	%
Hold-up Time	230VAC		-	55	-	ms
Short Circuit Protection	Recovery time <5s after the short circuit disappear		Hiccup, continuous, self-recovery			
Over-current Protection			110%-160% Io, self-recovery			
Over-voltage Protection	12V		≤19.2VDC (Output voltage turn off, hiccup or clamp)			
	24V		≤38.4VDC (Output voltage turn off, hiccup or clamp)			
	48V		≤60VDC (Output voltage turn off, hiccup or clamp)			
Note: *The “Tip and barrel method” is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor.						

EMC Specifications

Emissions	CE	CISPR32/EN55032 CLASS B	
	RE	CISPR32/EN55032 CLASS B	
	Harmonic current	IEC/EN61000-3-2 CLASS A	
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/±4KV	Perf. Criteria A
	CS	IEC/EN61000-4-6 10 Vrms	Perf. Criteria A
	DIP (AC input)	IEC/EN61000-4-11 0%, 70%	Perf. Criteria B

General Specifications

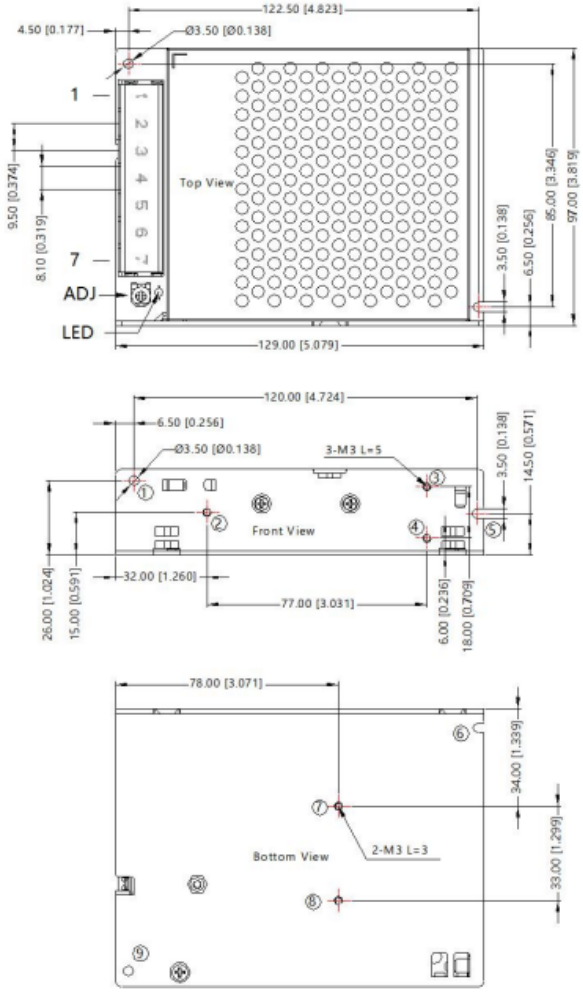
Item		Operating Conditions	Min	Typ	Max.	Unit
Isolation	Input-Earth	Electric Strength Test for 1min., leakage current <10mA	2000	-	-	VAC
	Input-output		4000	-	-	
	Output-Earth		1250	-	-	
Insulation Resistance	Input-Earth	At 500VDC	100	-	-	MΩ
	Input-output		100	-	-	
	Output-Earth		100	-	-	
Operating Temperature			-30	-	+70	℃
Storage Temperature			-40	-	+85	
Storage Humidity		Non-condensing	10	-	95	%RH
Operating Humidity			20	-	90	
Switching Frequency			-	65	-	KHz

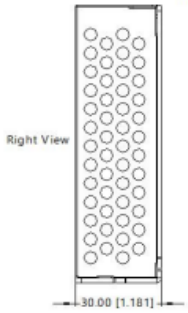
Power Derating	Operating temperature derating	+50 to 70℃	2	-	-	%/℃
	Input voltage derating	85-115VAC	0.67	-	-	%/VAC
Altitude			-	-	5000	m
Safety Certification		IEC/UL62368-1, GB4943.1, EN60335-1, EN61558-1 safety approved & EN62368-1, BS EN 62368-1 (Report)				
Safety Class		CLASS I				
MTBF	MIL-HDBK-217F@25℃	＞300,000 h				

Mechanical Specifications

Case Material	Metal (AL1100, SGCC)
Dimensions	129.00 x 97.00 x 30.00mm
Weight	305g (Typ.)
Cooling Method	Free air convection

Dimensions and recommended layout



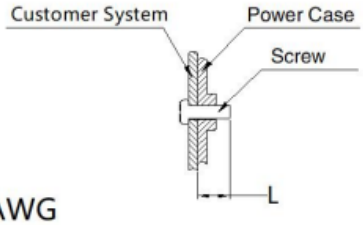


THIRD ANGLE PROJECTION

Pin-Out	
Pin	Function
1	AC(L)
2	AC(N)
3	⏚
4	-Vo
5	-Vo
6	+Vo
7	+Vo

①-⑨any position must be connected to the earth(⏚)

Position	Screw Spec.	L(max)	Torque(max)
②-④	M3	5mm	0.4N·m
⑦-⑧	M3	3mm	0.4N·m

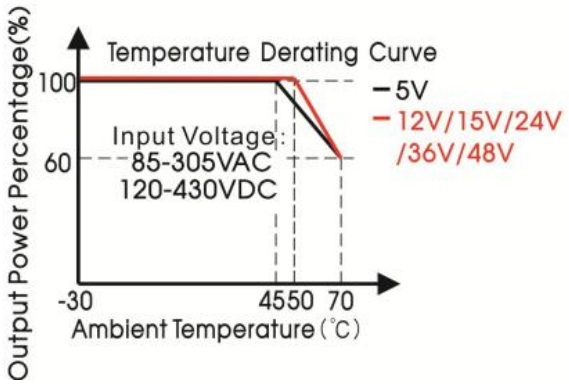


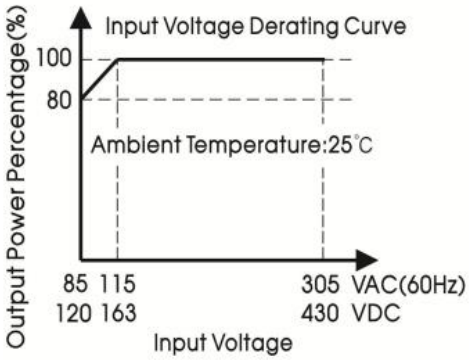
Note:
Unit: mm[inch]
Wire range: 22-12AWG
Connector tightening torque: M3.5 , 0.8N·m
General tolerances: ± 1.00[± 0.039]

Approvals

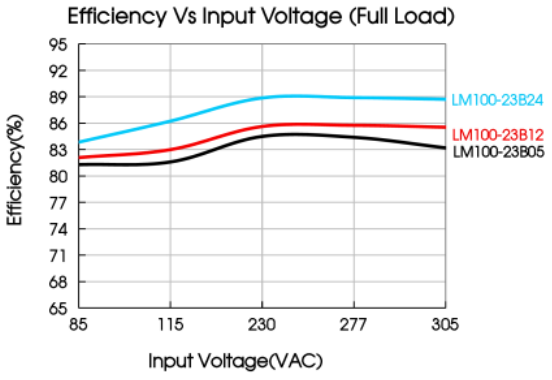
Safety Standard	IEC/EN/UL62368/EN60335/EN61558/GB4943
Safety Class	Class I

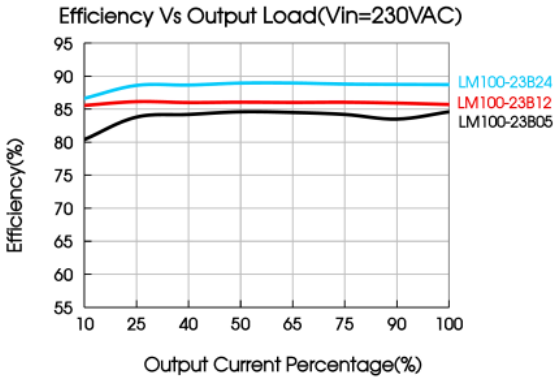
Product Characteric Curve





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;





Product start at 50% output power under low temperature and low input voltage (-30℃, below 100VAC).

Note:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity <75%RH with nominal input voltage and rated output load.
2. The ambient temperature derating of 5℃/1000m is needed for operating altitude greater than 2000m.
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. Products are related to laws and regulations: see "Features" and "EMC".
5. The outer case needs to be connected to the earth of system when the terminal equipment in operating.
6. Our products shall be classified according to ISO14001 and related environmental laws and regulations and shall be handled by qualified units.
7. 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.