

## FEATURES

- Universal 85 - 305Vac and 120 - 430Vdc
- Operating temperature range - 30°C to +70°C
- Up to 88% efficiency
- No-load power consumption < 0.3W
- Over-voltage class III (designed to meet EN61558)
- 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:254-3519,254-3520



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.

<b>Model</b>	AC-DC Enclosed 35W
<b>Mounting Type</b>	Chassis Mount
<b>MTBF</b>	MIL-HDBK-217F@25°C > 300,000 h
<b>Applications</b>	Industrial control systems, instrumentation and lighting

RS Stock#	Input Voltage	Output Voltage	Output Current	Adj' range (V)	Max. Capacitive Load(μF)	Efficiency (Typ)
<b>2543519</b>	85 to 305V ac 120 to 430V dc	12V DC	3A	10.2-13.8V	1500	88%
<b>2543520</b>	85 to 305V ac 120 to 430V dc	24V DC	1.5A	21.6-28.8V	750	87%

## 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	-	-	0.8	A
	230VAC	-	-	0.6	
Inrush Current	115VAC	Cold Start	-	-	30
	230VAC		-	-	50
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	-	±1	-
Line Regulation	Rated Load	12V/24V	-	±0.5	-
Load Regulation	0% - 100% load	12V/24V	-	±0.5	-
Output Ripple & Noise*		12V	-	-	120
					mV

	20MHz bandwidth (peak-to-peak value)	24V	-	-	150	
Temperature Coefficient			-	±0.03	-	%/°C
Minimum Load			0	-	-	%
Hold-up Time	230VAC		30	-	-	ms
Short Circuit Protection	Recovery time <5s after the short circuit disappear		Hiccup, continuous, self-recovery			
Over-current Protection			110%-200% I <sub>o</sub> , self-recovery			
Over-voltage Protection	12V		≤16.2VDC (Hiccup, self-recovery)			
	24V		≤33.6VDC (Hiccup, self-recovery)			
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	2000	-	-	VAC
	Input-output	4000	-	-	
	Output-Earth	1250	-	-	
Insulation Resistance	Input-Earth	100	-	-	MΩ
	Input-output	100	-	-	
	Output-Earth	100	-	-	
Operating Temperature		-30	-	+70	°C
Storage Temperature		-40	-	+85	
Storage Humidity	Non-condensing	-	-	95	%RH
Operating Humidity		20	-	90	
Switching Frequency		-	65	-	KHz

# Embedded Switch Mode Power Supplies (SMPS)

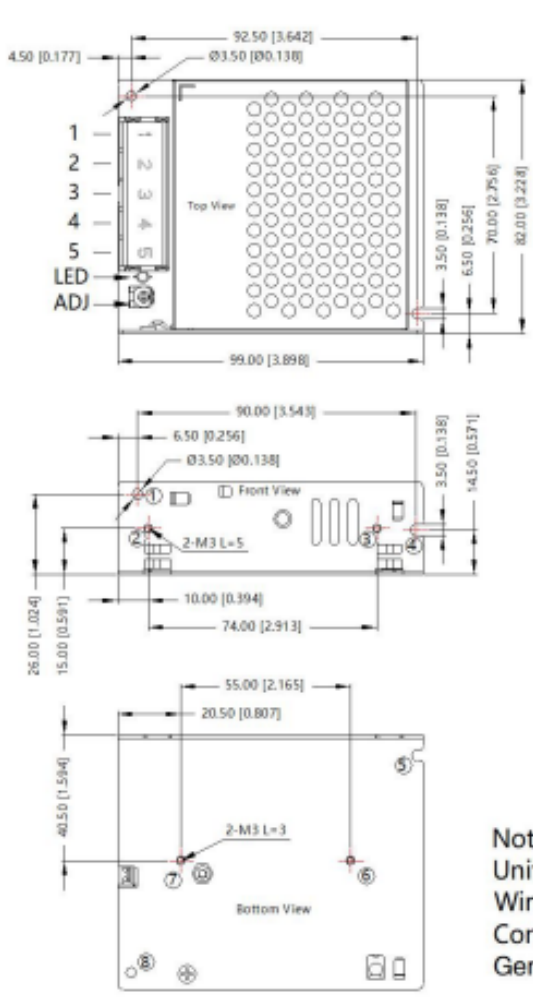


Power Derating	Operating temperature derating	-30°C to -25°C	85VAC - 100VAC	5	-	-	% / °C
		50°C to 70°C		2	-	-	
	Input voltage derating	85VAC-100VAC		1.33	-	-	% / VAC
Altitude				-	-	5000	m
Safety Certification				IEC/EN/UL62368/EN60335/EN61558/GB4943			
Safety Class				CLASS I			
MTBF	MIL-HDBK-217F@25°C			> 300,000 h			

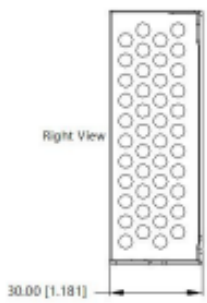
## Mechanical Specifications

Case Material	Metal (AL1100, SGCC)
Dimensions	99.00 x 82.00 x 30.00 mm
Weight	170g (Typ.)
Cooling Method	Free air convection

## Dimensions and recommended layout



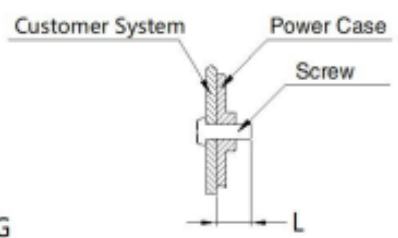
THIRD ANGLE PROJECTION



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

①-⑧ any position must be connected to the earth (⊕)

Position	Screw Spec.	L(max)	Torque(max)
② - ③	M3	5mm	0.4N-m
⑥ - ⑦	M3	3mm	0.4N-m

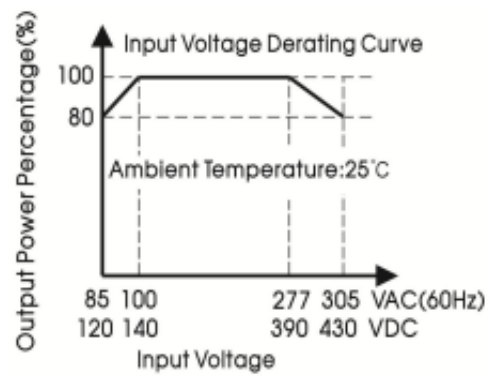
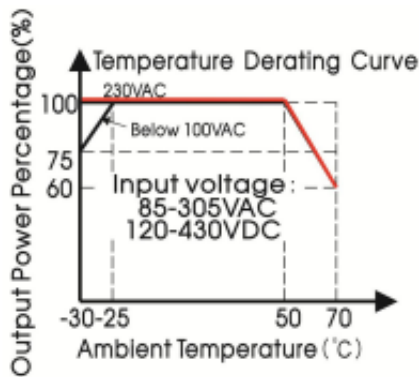


**Note:**  
 Unit: mm[inch]  
 Wire range: 22-12AWG  
 Connector tightening torque: M3.5 , 0.8N-m  
 General tolerances: ± 1.00 [± 0.039]

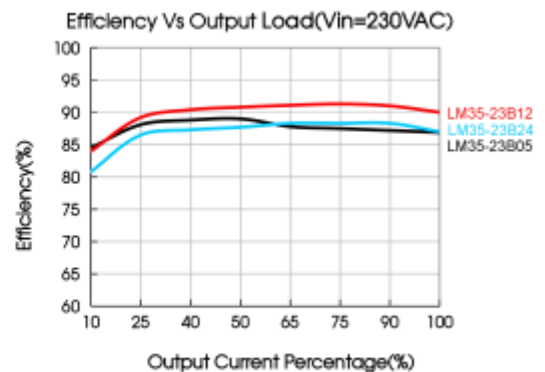
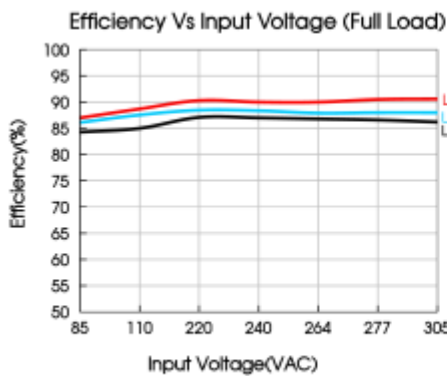
## Approvals

<b>Safety Standard</b>	IEC/EN/UL62368/EN60335/EN61558/GB4943
<b>Safety Class</b>	Class I

## 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;



Note:

1. 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.
2. The ambient temperature derating of  $5^\circ\text{C}/1000\text{m}$  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.