

ASMT100-B2305R2



RoHS

3-Year Warranty

- Universal 80 - 305VAC or 100 - 430VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -40°C to +85°C
- Low standby power consumption, high efficiency
- High I/O isolation test voltage up to 4000VAC
- Low ripple & noise
- Operating altitude up to 5000m
- Output short circuit, over-current, over-voltage protection
- Over-voltage class III (designed to meet EN62477)
- Safety according to IEC62368, EN60335, EN61558, EN62477

Description

ASMT100-B23XXR2 series has innovated the industrial power supply standard from the aspect of dimension, performance, technology and structure. 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 reinforced isolation. These converters offer excellent EMC performance and meet IEC/EN61000-4, CISPR32/EN55032, UL/IEC/EN/BS EN62368, EN60335, EN61558, EN62477, GB4943. standards and they are widely used in areas of industrial, LED, street light control, electricity, security, telecommunications, smart home etc. For extremely harsh EMC environment, we recommend using the application circuit show in Design Reference of this datasheet.

Selection Guide

Certification	Part No.*	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range (V)	Efficiency at 230VAC (%) Typ.	Capacitive Load (uF) Max.
/	ASMT100-B2305R2	90	5V/ 18A	4.75-5.75	87.0	10000
	ASMT100-B2312R2	102	12V/8.5A	11.4-13.8	90.0	6800
	ASMT100-B2315R2	105	15V/7.0A	14.25-17.25	90.0	3300
	ASMT100-B2324R2	108	24V/4.5A	22.8-27.6	90.5	2200
	ASMT100-B2336R2	100.8	36V/2.8A	34.2-41.4	90.5	1000
	ASMT100-B2348R2	110.4	48V/2.3A	43.2-52.8	91.5	470
	ASMT100-B2354R2	102.6	54V/ 1.9A	51.3-56.7	91.5	220

Note: * 1. Use suffix “C” for terminal with protective cover, suffix “Q” for bottom conformal coating and “QQ” for both sides conformal coating;
2. 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		80	--	305	VAC
	DC input		100	--	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	5V	--	±2	--	%
		12V/ 15V/24V/36V/48V/54V	--	±1	--	
Line Regulation	Rated load		--	±0.5	--	
Load Regulation	0% - 100% load	5V	--	±1	--	
		12V/ 15V/24V/36V/48V/54V	--	±0.5	--	
Ripple & Noise*	230V, Rated load; 20MHz bandwidth (peak-to-peak value)	5V	--	150	--	mV
		12V/ 15V	--	120	--	
		24V		150		
		36V/48V/54V	--	200	--	
Temperature Coefficient			--	±0.03	--	%/°C
Minimum Load			0	--	--	%
Stand-by Power Consumption			--	0.3	0.5	W
Hold-up Time	115VAC		--	10	--	ms
	230VAC		--	55	--	
Short Circuit Protection	Recovery time <5s after the short circuit disappear.		Hiccup, continuous, self-recovery			
Over-current Protection			115% - 200% Io, Hiccup, self-recovery			
Over-voltage Protection	5V		≤7.5VDC (Clamp, self-recovery)			
	12V		≤19.2VDC (Hiccup, self-recovery)			
	15V		≤24VDC (Hiccup, self-recovery)			
	24V		≤38.4VDC (Hiccup, self-recovery)			
	36V		≤57.6VDC (Hiccup, self-recovery)			
	48V		≤60VDC (Clamp, self-recovery)			
	54V		≤70VDC (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, 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	Electric strength test for 1min., leakage current <5mA		4000	--	--	
	Output	Electric strength test for 1min., leakage current <5mA		1250	--	--	
Insulation Resistance	Input -	Test voltage at 500VDC		100	--	--	MΩ
	Input - output			100	--	--	
	Output			100	--	--	
Operating Temperature				-40	--	+85	℃
Storage Temperature				-40	--	+85	
Operating Humidity		Non-condensing		20	--	90	%RH
Storage Humidity				10	--	95	
Switching Frequency				--	80	--	kHz
Power Derating		+45℃ to +70℃	5V	1.60	--	--	% /℃
		+50℃ to +70℃	12V/ 15V/24V/36V /48V/54V	2.00	--	--	
		+70℃ to +85℃		2.00			
		-40℃ to -30℃		5.00	--	--	
		80VAC - 100VAC		1.25	--	--	% /VAC
		277VAC - 305VAC		0.71	--	--	
Safety Standard		5V/ 12V/ 15V/24V/36V/48V		UL/IEC62368-1, GB4943.1, IS13252 (Part 1) safety approved & BS EN/EN60335-1, BS EN/EN61558-1, BS EN/EN62368-1 (report); Design refer to EN62477-1			
		54V		UL/IEC62368-1, GB4943.1 safety approved & BS EN/EN60335-1, BS EN/EN61558-1, BS EN/EN62368-1 (report); Design refer to EN62477-1			
Safety Class				CLASS I			
MTBF				MIL-HDBK-217F@25℃ >300,000 h			

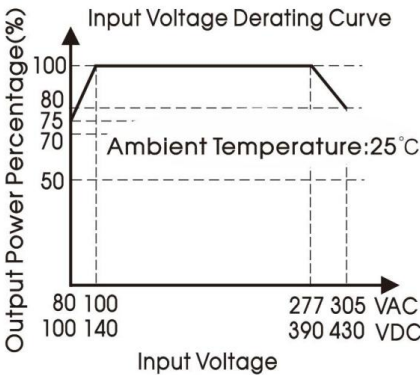
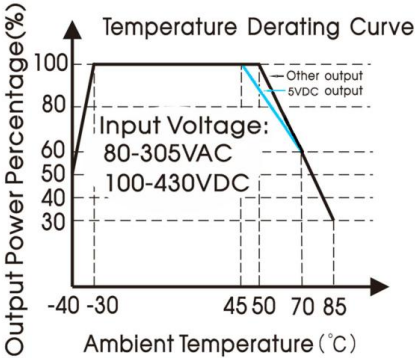
Mechanical Specifications

Case Material	Metal (AL5052, SGCC)
Dimensions	99.00 x 97.00 x 30.00 mm
Weight	260g (Typ.)
Cooling Method	Free air convection

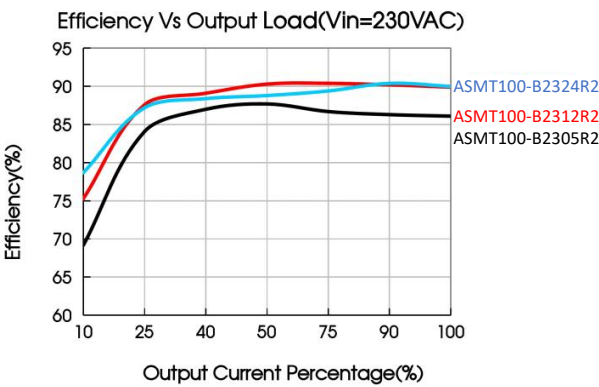
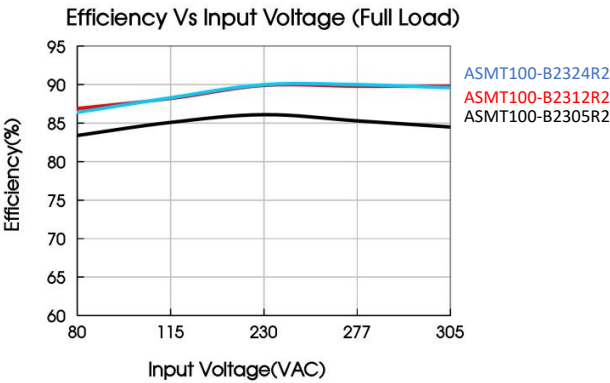
Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
	Harmonic current	IEC/EN61000-3-2	CLASS A	
Immunity	ESD	IEC/EN61000-4-2	Contact ±6KV/Air ±8KV	perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	±4KV	perf. Criteria A
	Surge	IEC/EN61000-4-5	line to line ±2KV/line to PE ±4KV	perf. Criteria A
	CS	IEC/EN61000-4-6	10 Vr.m.s	perf. Criteria A
	PFMF	IEC/EN61000-4-8	30A/m	perf. Criteria A
	Voltage dip, short interruption and voltage variation	IEC/EN61000-4-11	0%, 70%	perf. Criteria B

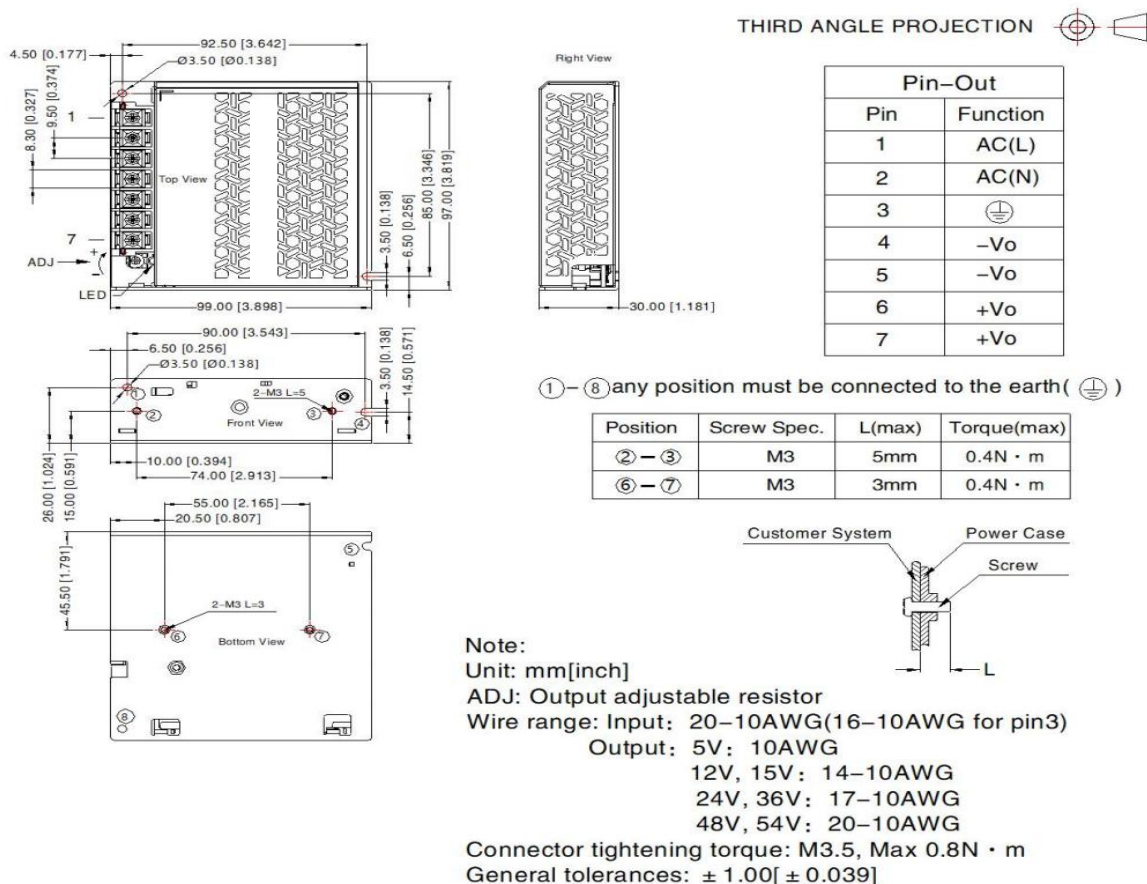
Product Characteristic Curves



Note: 1. With an AC input voltage between 80 -100VAC/277-305VAC and a DC input between 100 -140VDC/390-430VDC the output power must be derated as per the temperature derating curves;



Dimensions and Recommended Layout



Note:

- 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 the earth ($\oplus$) 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.