

SPECIFICATION

SS-240AL Series LED Driver

Model: SS-240AL-XX

Description: 240W LED DRIVER

Rev.: V01

Release Date: 2019-07-05



SHENZHEN SOSEN ELECTRONICS CO.,LTD

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REVISION HISTORY

Rev.	Description of Change	Changed Date	Remarks
V00	Original release	2018/08/06	
V01	Update wire description	2019/07/05	

Features

- Efficiency up to 92%
- IP67 rated
- Protections: SCP, OCP
- Metal case with full potted for hazardous scenarios
- Surge Protection: L/N-PE: 4kV, L-N: 4kV
- 5 years warranty



Description

SS-240AL series are constant Voltage LED driver with universal input voltage 200-264Vac and high power factor. They are specifically designed for LED strips , LED sign, billboard and landscape lights with low standby power, high efficiency, compact housing and good thermal management, which greatly enhance the reliability and lifespan. Comprehensive protections, including Over Voltage Protection, Short Circuit Protection, ensure proper functioning.

Model List

Model	O/P Voltage	O/P Current	Max. O/P Power	O/P Voltage Tolerance	THD (Typ.)	PF (Typ.)	Efficiency (Typ.)
SS-240AL-12	12V	16A	192W	±5%	8%	0.96	91%
SS-240AL-24	24V	10A	240W	±5%	8%	0.96	92%

Note: Default Tested at 230Vac, full load, Ta 25°C.



Input Characteristics

Parameter	Min	Typ.	Max	Remarks
Rated AC input range	220 Vac		240 Vac	
AC input range	200 Vac		264 Vac	
Input frequency range	47Hz		63Hz	
Max input current			1.5A	200Vac, full load
Inrush current			80A	Cold start, 230Vac/50Hz , Twidth=650us measured at 50% Ipeak
No load power		0.8W	1W	240Vac/50Hz, No load
Power factor	0.95	0.96		230Vac/50Hz, full load
	0.90	0.92		220-240Vac/50Hz, 80-100% Load
THD		8%	10%	230Vac/50Hz, full load
			20%	200-240Vac/50Hz, 80-100% Load

Output Characteristics

Parameter	Min	Typ.	Max	Remarks	
Output voltage range	SS-240AL-12	11.4V	12.0V	12.6V	
	SS-240AL-24	22.8V	24.0V	25.2V	
Output current range	SS-240AL-12	0A		16A	
	SS-240AL-24	0A		10A	
Efficiency @230Vac	SS-240AL-12	89%	91%	Output 12V/16A, see Fig. 5	
	SS-240AL-24	90%	92%	Output 24V/10A , see Fig. 5	
Output voltage tolerance	-5%		+5%	full load	
Output voltage ripple (PK-PK)		1%	3%	Oscilloscope/20MHz, output with a 0.1uf ceramic capacitor and a10uf electrolytic capacitor	
Start-up time		0.5S	1.0S	230Vac	
Output overshoot/undershoot	-10%		+10%	When the driver on or off	
Line Regulation	-1%		+1%	Full load	
Load Regulation	-3%		+3%		
Transient response	Overshoot amplitude	-5%		+5%	di/dt=1A/μs, 25%-50%-25%
	Recover time			10mS	

Other Characteristics

Parameter		Min	Typ.	Max	Remarks
Protection	OCP	110% I _o		150% I _o	The output voltage will be limited at the design range
	OVP	105% V _o		180% V _o	
	Short Circuit Protection	Driver will not damaged with short-circuit power <10W			Hiccup mode
Life time			55,000hrs		230Vac, full load, T _c 75°C, See Fig. 6
MTBF			200,000hrs		230Vac, full load, T _a = 25°C, (MIL-HDBK-217F)
Temperature Coefficient		-0.03%/°C		+0.03%/°C	T _c : 0°C ~90°C
T _c				90°C	
Warranty			5years		T _c : 75°C
Net Weight			1300g		
Dimension		244mm*69mm*40mm			L x W x H

NOTE: All the parameters above are tested T_a 25°C, unless specified.

Environmental Requirements

Parameter	Min	Typ.	Max	Remarks
Operating Temperature	-40°C	25°C	+60°C	See Fig. 2
Storage Temperature	-40°C	25°C	+85°C	
Operation Humidity	10%RH		90%RH	
Storage Humidity	5%RH		95%RH	
Altitude	-65m		4,000m	
Cooling Method	Air Cooling			

Safety and EMI/EMS Standards

Certification	Standard	Status	Remark
CCC	GB 19510.14-2009	√	
CE	EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013	√	
Item	Standard	Remark	
Insulation strength	Input-output	3750Vac/10mA Max/60s	Reinforced insulation
	Primary-Earth	1875Vac/10mA Max/60s	Basic insulation
	Sec.- Earth	1000Vac/10mA Max/60s	Function insulation
Insulation resistance	Input-output	≥10MΩ	Testing Voltage: 500Vdc
Ground resistor		≤0.1Ω	25A/1min
Leakage current		≤0.75mA	240Vac
Item	Criterion	Remark	
Conduction Emission	EN55015:2013+A1:2015		
Radiation Emission	EN55015:2013+A1:2015		
Harmonic Current Emissions	IEC/EN 61000-3-2	Class C	
Surge	IEC/EN61000-4-5	Difference mode 4kV, Common mode 4kV Criterion B	

NOTE:

- SOSEN warrants the LED Driver itself complies with EMC standard. However, LED Driver's EMC should be re-checked when integrated into lighting systems due to unexpected interference as component.
- Please short Line and Nuture, V+ and V- when conduct Hi-pot test.

Performance Curves

Fig. 1 Output Power VS Input Voltage

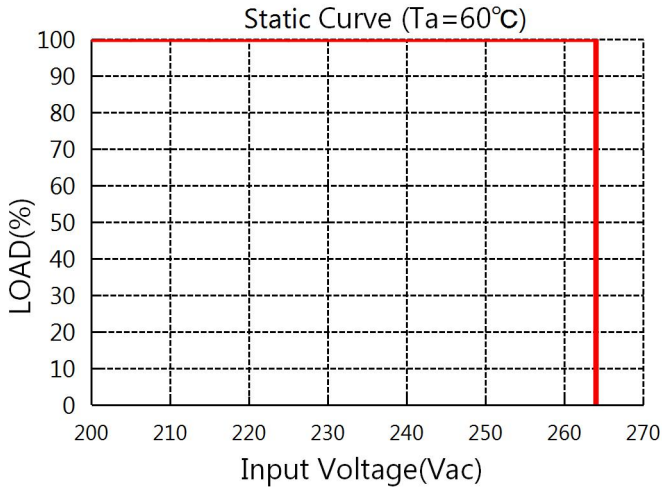


Fig. 2 O/P Power VS Ambient Temperature

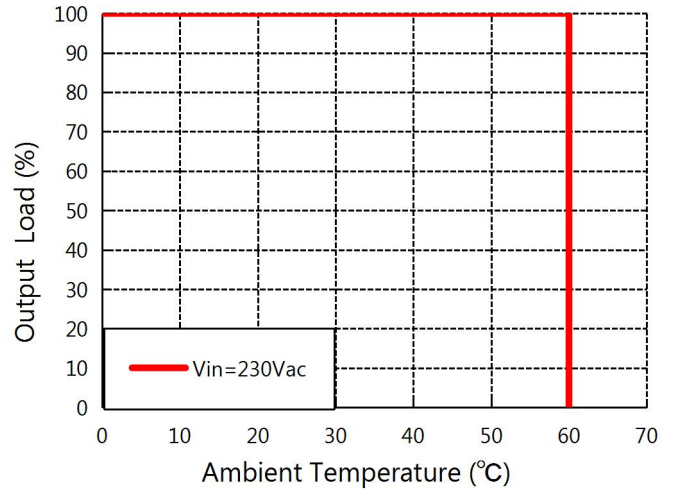


Fig. 3 Power Factor VS Output Power

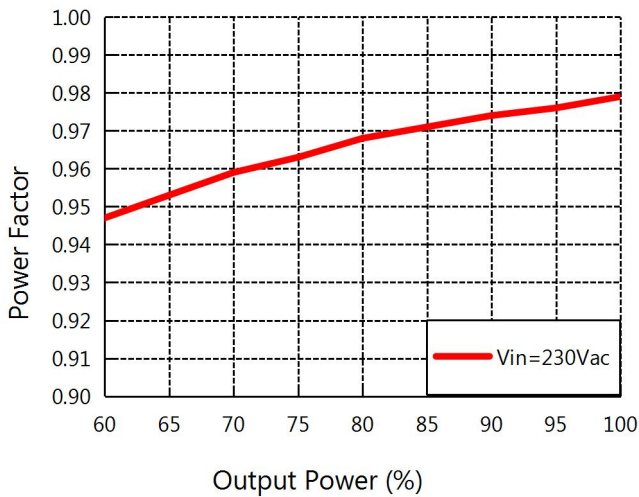


Fig. 4 THD VS Output Power

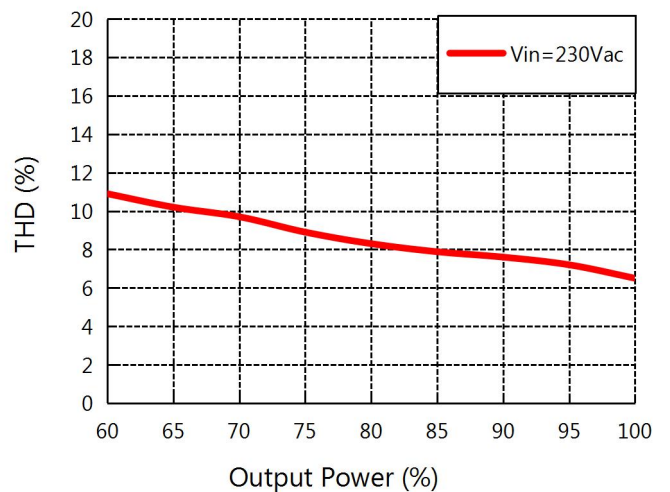


Fig. 5 Efficiency VS Output Power

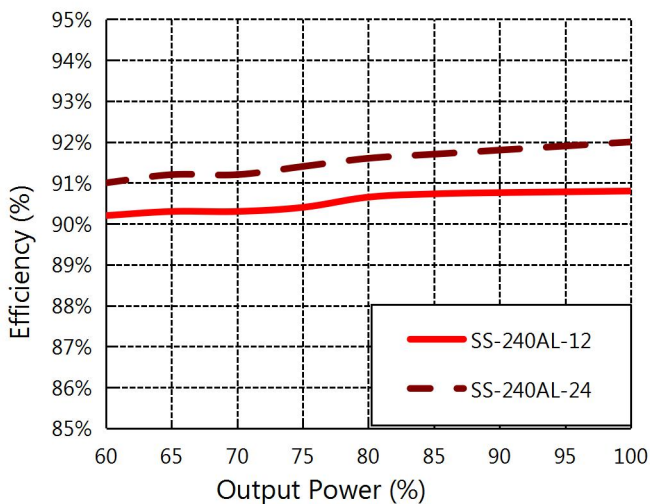
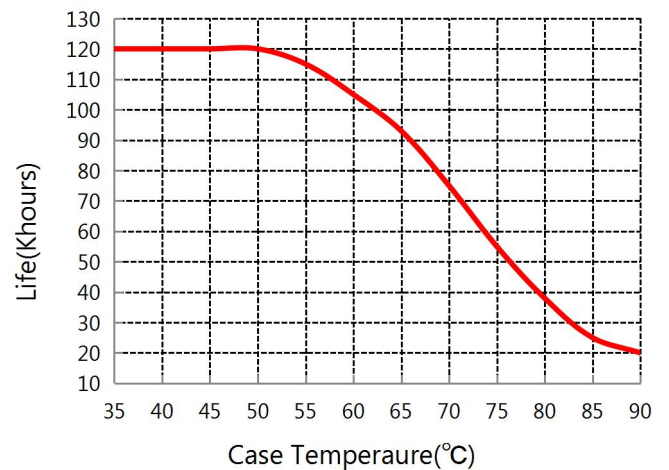
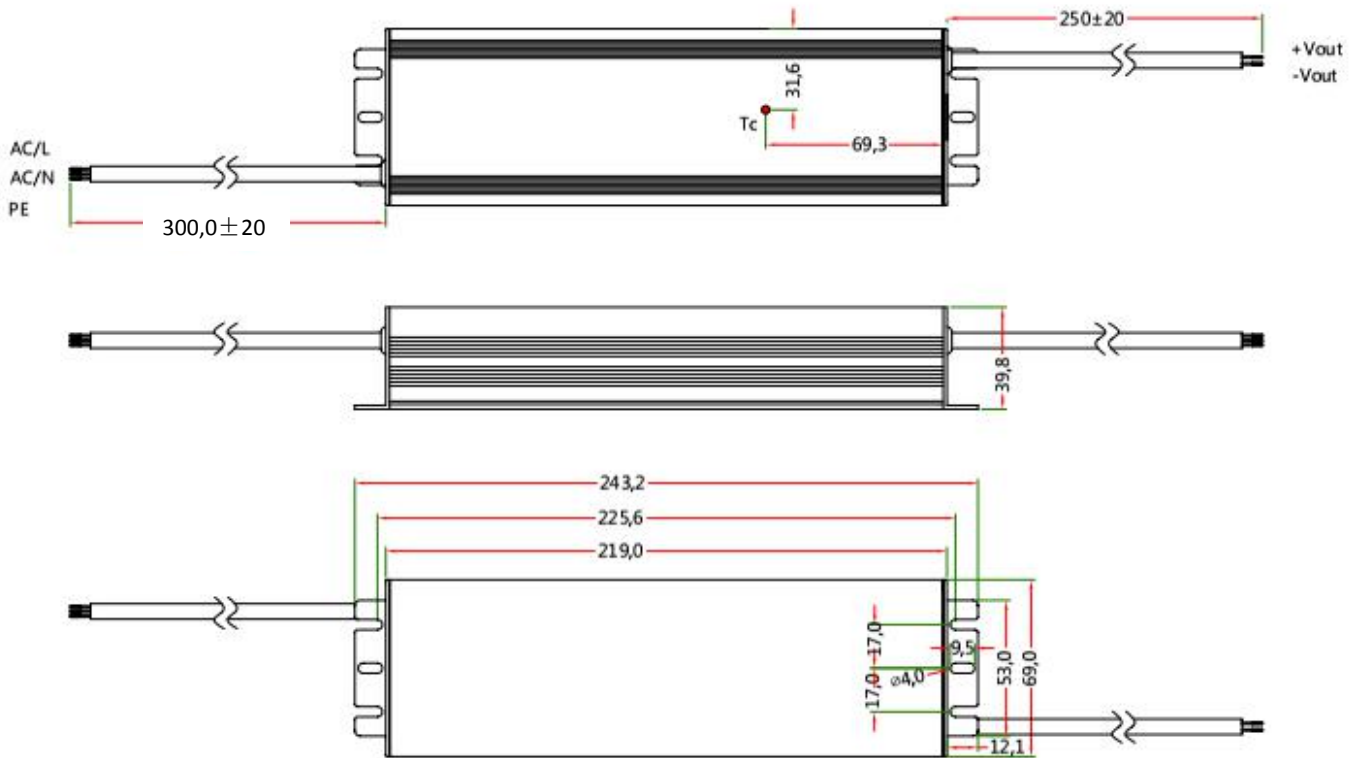


Fig. 6 Lifespan VS Case Temperature



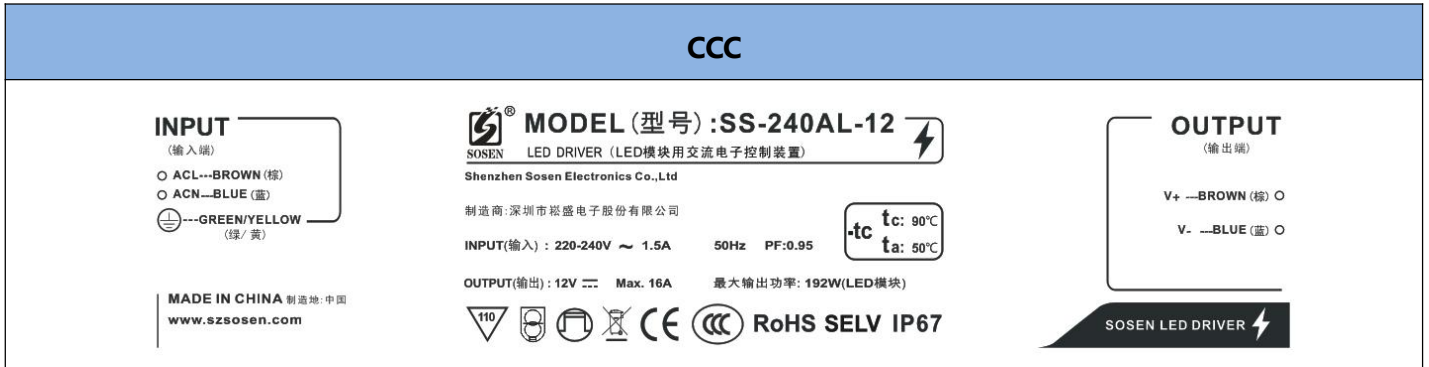
Mechanical Characteristics(Unit: mm)



NOTE:

Input Wire	VDE H05RN-F 3*1.0 mm ² , O.D: 7.4mm, BROWN: L, BLUE: N, YELLOW/GREEN: PE
Output Wire	SS-240AL-12: VDE H07RN-F 2*2.5 mm ² , O.D: 10.2mm, BROWN: V+, BLUE: V- SS-240AL-24: VDE H05RR-F 2*1.5 mm ² , O.D: 8.7mm, BROWN: V+, BLUE: V-

Label



Package, Transportation & Storage

1. Package

- Outside carton dimension: L×W×H =500mm×390mm×170mm;
- 14PCS/Carton;
- Net weight/PC:1.3kg;
- Gross weight/Carton:19kg.

2. Transportation

Packaging is designed suitable for transportation by trucks, vessels and flights. The products should be shielded from direct sunshine, loaded/unloaded with caution.

3. Storage

The product storage meets the standard of the GB 3873—83.

Products should be rechecked if stock for over 1 year before installation.