

5W, AC-DC converter



RoHS

LO05-13D0505-01E— a compact size power converter offered by Mornsun. It features universal input voltage, taking both DC and AC input voltage, high reliability. It offers good EMC performance, EMS meet the international IEC/EN61000-4 standard, and widely used in computer protection and other industrial, office and civilian industries.

FEATURES

- Input voltage range: 85 - 305VAC/ 100 - 430VDC
- Isolation voltage: 3K VAC
- Regulated output, Low ripple & noise
- Output short circuit, over-current, over-voltage Protection
- EFT /Surge: ±4KV Perf. Criteria B

Selection Guide

Part No.	Output Power	Nominal Output Voltage and Current(Vo/Io)		Efficiency (230VAC, %/Typ.)	Max. Capacitive Load (μF)	
		(Vo1/Io1)	(Vo2/Io2)		Vo1	Vo2
LO05-13D0505-01E	5W	5.0V/900mA	5.0V/100mA	73	2700	500

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	AC input	85	--	305	VAC
	DC input	100	--	430	VDC
Input Frequency		47	--	63	Hz
Input Current	115VAC	--	--	0.15	A
	230VAC	--	--	0.1	
Inrush Current	230VAC	--	30	--	
Recommended External Input		2A/300V, slow fusing, necessary			
Hot Plug		Unavailable			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Balance load	Primary output (Vo1)	--	±2	--	%
		Secondary output (Vo2)	--	±10	--	
Line Regulation	Full load	Primary output (Vo1)	--	±1	--	
		Secondary output (Vo2)	--	±3	--	
Load Regulation	10%-100% load	Primary output (Vo1)	--	±2	--	
		Secondary output (Vo2)	--	±5	--	
Ripple & Noise*	20MHz bandwidth (peak-peak value)		--	--	100	mV
Temperature Coefficient	Primary output (Vo1)		--	±0.02	--	%/°C
Stand-by Power Consumption			--	--	0.4	W
Short Circuit Protection	230VAC		Hiccup, continuous, self-recovery			
Over-current Protection			≥110% Io, self-recovery			
Over-voltage Protection	Primary output (Vo1)	5VDC output	≤7.5VDC			
Min. Load			10	--	--	%
Hold-up Time	115VAC input		--	15	--	ms
	230VAC input		--	75	--	

Note: * Ripple and noise are measured by "parallel cable" method, please see AC-DC Converter Application Notes for specific operation.

General Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Isolation Voltage	Input-output	Test time: 1min	3000	--	--	VAC
	Output-output		2500	--	--	
	Vo1- Vo2		1000	--	--	VDC
Operating Temperature			-40	--	+70	°C
Storage Temperature			-40	--	+105	
Storage Humidity			--	--	95	%RH
Welding Temperature	Wave-soldering	260 ± 5°C; time: 5 - 10s				
	Manual-welding	360 ± 10°C; time: 3 - 5s				
Switching Frequency			--	65	--	KHz
Power Derating	-40°C to -10°C		2.0	--	--	% / °C
	50°C to +70°C		3.0	--	--	
	85 - 100VAC		2.0	--	--	%/VAC
Safety Class			CLASS I			
MTBF	MIL-HDBK-217F@25°C		> 300,000 h			

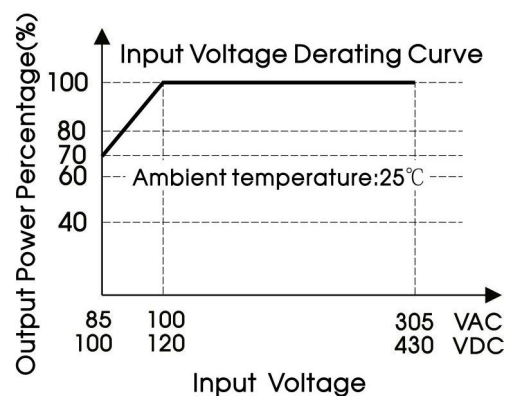
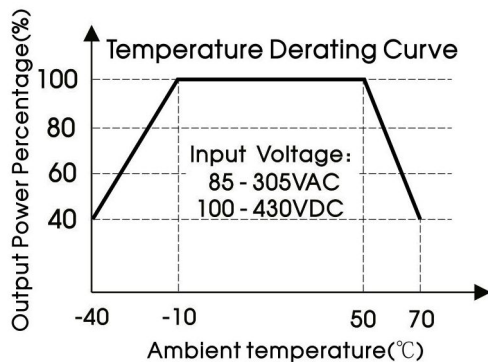
Physical Specifications

Dimension	56.20*32.10*26.00mm
Weight	28g(Typ.)
Cooling Method	Free air convection

EMC Specifications

EMS	ESD	IEC/EN61000-4-2 Contact ±4KV	Perf. Criteria B
	RS	IEC/EN61000-4-3 10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4 ±4KV	perf. Criteria B
	Surge	IEC/EN61000-4-5 Line to line ±2KV/line to ground ±4KV	perf. Criteria B
	CS	IEC/EN61000-4-6 10Vr.m.s	perf. Criteria A
	Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11 0%,70%	perf. Criteria B

Product Characteristic Curve



Note:

- ① Input voltage should be derated based on temperature derating when it is 85 - 100VAC/100 - 120VDC;
- ② This product is suitable for use in natural air cooling environments, if in a closed environment, please contact our company's FAE.

Design Reference

1. Typical application circuit

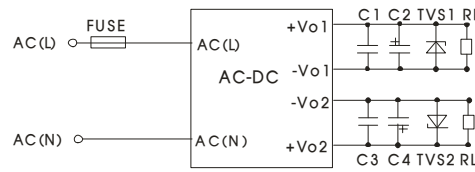


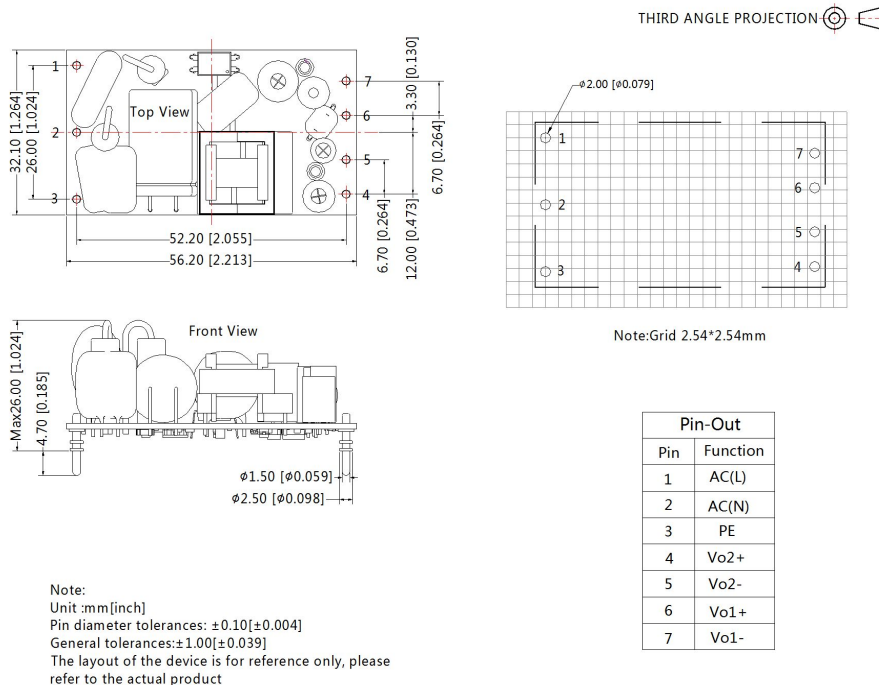
Fig. 1

Model	FUSE	C1/C3(μF)	C2(μF)	C4(μF)	TVS1	TVS2
L 005-13D0505-01E	2A/300V, slow fusing, necessary	0.1	220μF/16V	100μF/16V	SMBJ6.8A	SMBJ7.5A

Note: Output filtering capacitor C2/C4 is electrolytic capacitor, it is recommended to use high frequency and low impedance electrolytic capacitor. Capacitor voltage reduced to at least 80%. C1/C3 is ceramic capacitor, which is used to filter high-frequency noise. TVS protect post-circuits (if converter fails).

2. For more information, Please find the application note on www.mornsun-power.com

Dimensions and Recommended Layout



Notes:

1. Packing information please refer to Product Packing Information which can be downloaded from www.mornsun-power.com. Packing bag number: 58220052;
2. If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
3. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75% with nominal input voltage and rated output load;
4. All index testing methods in this datasheet are based on our Company's corporate standards;
5. We can provide product customization service, please contact our technicians directly for specific information;
6. Products are related to laws and regulations: see "Features" and "EMC";
7. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

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