

AC charging point dedicated 20W, AC-DC converter



RoHS



FEATURES

- Input voltage range: 165 - 264VAC/230 - 370VDC
- Isolation voltage: 3KVAC
- Triple regulated output, High output voltage accuracy
- High efficiency up to 78%
- Output short circuit, over-current, over-voltage protection
- Safety Class: CLASS II

LO20-10C0512-01—a compact size power converter offered by Mornsun. It features universal input voltage, taking both DC and AC input voltage, high efficiency, high reliability, safer isolation. It offers good EMC performance, which meet IEC60950 standard, and it's widely used in charging point application.

Selection Guide

Part No.	Output Power	Nominal Output Voltage and Current			Efficiency (230VAC, %/Typ.)	Max. Capacitive Load(μF)		
		Vo1/Io1	Vo2/ Io2	-Vo2/ -Io2		Vo1	Vo2	-Vo2
LO20-10C0512-01	18.7W	5V/500mA	12V/1200mA	-12V/150mA	78	680	1000	330

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	AC input	165	--	264	VAC
	DC input	230	--	370	VDC
Input frequency		47	--	63	Hz
Input current	165VAC	--	--	0.4	A
	230VAC	--	--	0.3	
Inrush current	165VAC	--	23	--	
	230VAC	--	30	--	
Recommended External Input Fuse		2A/250V, slow fusing			
Hot Plug		Unavailable			

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Vo2	--	--	±2	%
	-Vo2/Vo1	--	--	±3	
Line Regulation	Full load	Vo2	±0.5	--	
		-Vo2/Vo1	±1.5	--	
Load Regulation	10% -100% load	Vo2	±3	--	
		-Vo2/Vo1	±5	--	
Ripple & Noise*	20MHz bandwidth (peak-peak value)	--	100	200	mV
Short Circuit Protection		Continuous, self-recovery -Vo2/Vo1 Short Circuit, other normal output; Vo2 Short Circuit, all Short Circuit Protection			
Over-current Protection		≥110%Io self-recovery			
Over-voltage Protection	Vo2	≤20VDC (-Vo2/Vo1 normal output)			
	-Vo2/Vo1	No over-voltage Protection			
Min. Load	Vo2	10	--	--	%
	-Vo2/Vo1	0	--	--	
Hold-up Time	165VAC input (Vo2)	--	10	--	ms
	230VAC input (Vo2)	--	35	--	

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 (Vo2/-Vo2) – output (Vo1)		500	--	--	VDC
Operating Temperature			-25	--	+70	°C
Storage Temperature			-25	--	+85	
Storage Humidity			--	--	90	%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		+55°C to +70°C	2	--	--	%/°C
Safety Standard			Meets IEC60950/EN60950/UL60950			
Safety Class			CLASS II			
MTBF			MIL-HDBK-217F@25°C ≥ 300,000 h			

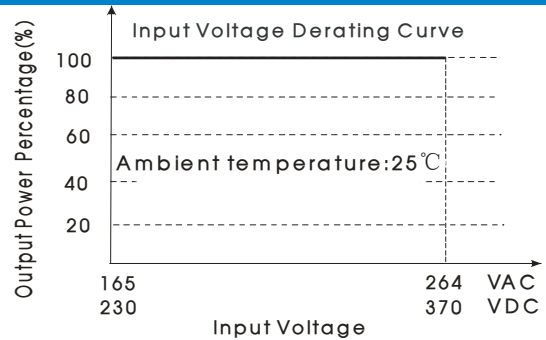
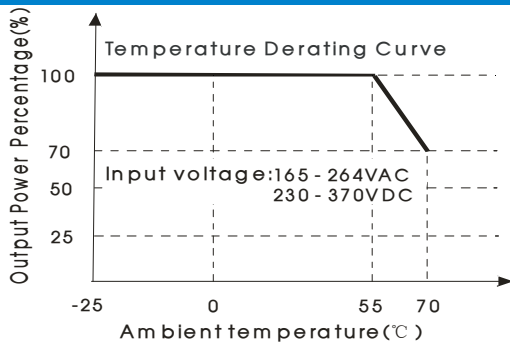
Physical Specifications

Dimension	70.00*48.00*23.00 mm
Weight	56g(Typ.)
Cooling method	Free air convection

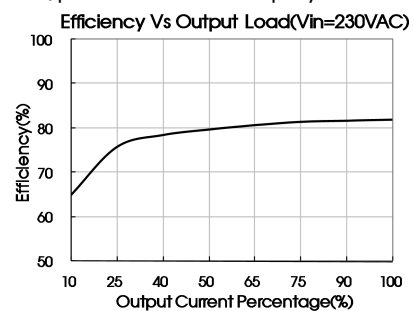
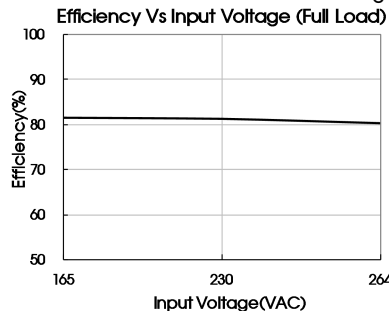
EMC Specifications

EMI	CE	CISPR22/EN55022	CLASS A	
	RE	CISPR22/EN55022	CLASS A	
EMS	ESD	IEC/EN61000-4-2	Contact ±4KV/Air ±6KV	Perf. Criteria B
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	±2KV	perf. Criteria B
	Surge	IEC/EN61000-4-5	line to line ±1KV / line to ground ±2KV	perf. Criteria B

Product Characteristic Curve



Note: ① 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

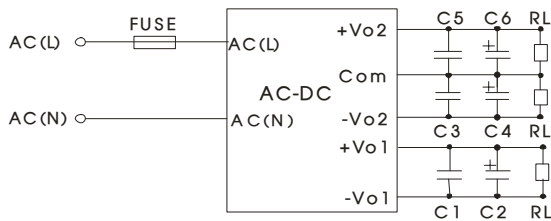


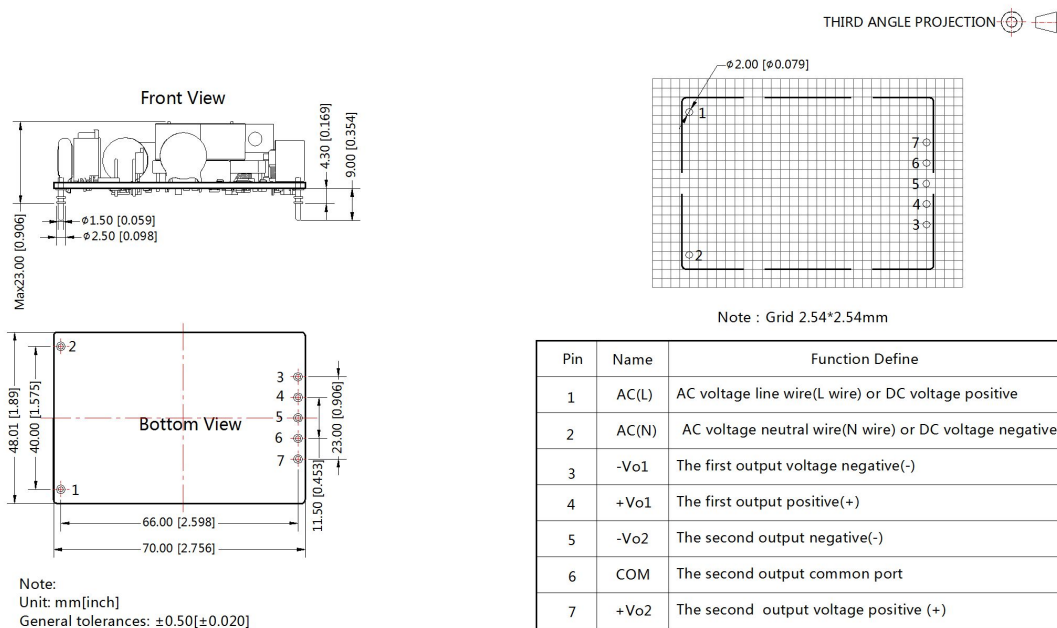
Fig. 1: typical application circuit

Model	C1,C3,C5(μF)	C2,C4,C6(μF)
LO20-10C0512-01	1	100

Note:
Output filtering capacitors C2, C4, C6 are electrolytic capacitors, it is recommended to use high frequency and low impedance electrolytic capacitor. For capacitance and current of capacitor please refer to manufacture's datasheet. Capacitor withstand voltage derating should be 80% or above. C1, C3, C5 are ceramic capacitors, which is used to filter high-frequency noise. External input FUSE model is recommended to use 2A/250V slow fusing, necessary.

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: 58220006;
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 $T_a=25^\circ\text{C}$, 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. Specifications are subject to change without prior notice.

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