AC/DC Converter
SLO20-10C0512-05

20W, AC-DC converter

RoHS

FEATURES

- 85 - 264V Universal AC or wide 100 - 370V DC Input
- High I/O isolation test voltage of up to 3000VAC
- Triple output, regulated, high output voltage accuracy
- High efficiency up to 79%
- Output short circuit, over-current, over-voltage protection
- Safety Class: CLASS II

SLO20-10C0512-05 is one of SCHMID-M's compact size power converter. The product features universal AC input voltage, at the same time also accepts DC input, high efficiency, high reliability and reinforced insulation. It offers excellent EMC performance, meets IEC62368 safety standard .

Selection Guide

Part No.	Output Power	Nominal Output Voltage and Current			Efficiency at 230VAC (%) Typ.	Capacitive Load (μF) Max.		
		Vo1/Io1	Vo2/ Io2	-Vo2/ -Io2		Vo1	Vo2	-Vo2
SLO20-10C0512-05	17.8W	5V/2000mA	12V/500mA	-12V/150mA	79	4000	680	330

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	AC input	85	--	264	VAC
	DC input	100	--	370	VDC
Input Frequency		47	--	63	Hz
Input Current	115VAC	--	--	0.6	A
	230VAC	--	--	0.3	
Inrush Current	115VAC	--	16	--	
	230VAC	--	35	--	
Recommended External Input Fuse		2A/250V slow-blow required			
Hot Plug		Unavailable			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Vo1		--	±2	--	%
	±Vo2		--	±3	--	
Line Regulation	Full load	Vo1	--	±0.5	--	
		±Vo2	--	±1.5	--	
Load Regulation	10% -100% load	Vo1	--	±3	--	
		±Vo2	--	±5	--	
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)		--	--	150	mV
Short Circuit Protection			Continuous, self-recovery -Vo2/Vo1 Short Circuit, other normal output; Vo2 Short Circuit, all Short Circuit Protection			
Over-current Protection			⩾140%Io, self-recovery			
Over-voltage Protection	Vo1		⩽8.0VDC（±Vo2 normal output）			
	±Vo2		No over-voltage Protection			
Minimum Load			10	--	--	%
Start-up Delay Time	115VAC input		--	10	--	ms
	230VAC input		--	60	--	

Note: * The "parallel cable" method is used for ripple and noise test, please refer to AC-DC Converter Application Notes for specific information.

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General Specifications

Item		Operating Conditions	Min.	Typ.	Max.	Unit
Isolation	Input-output	Electric Strength Test for 1min., leakage current <5mA	3000	--	--	VAC
	Vo2/（-Vo2）- Vo1		500	--	--	
Operating Temperature			-40	--	+70	°C
Storage Temperature			-40	--	+85	
Storage Humidity			--	--	90	%RH
Soldering 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
		+55°C to +70°C	2.0	--	--	
		85VAC-100VAC	1.67	--	--	%/VAC
		240VAC-264VAC	1.0	--	--	
Safety Standard			UL62368/EN62368/IEC62368			
Safety Class			CLASS II			
MTBF			MIL-HDBK-217F@25°C > 300,000 h			

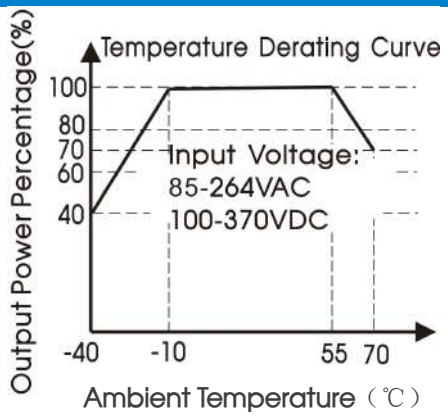
Mechanical Specifications

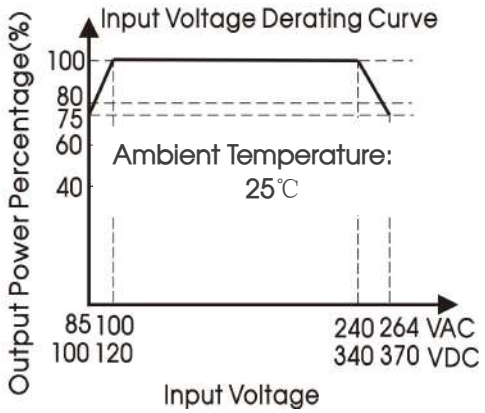
Dimension	70.00 x 48.00 x 23.00 mm
Weight	60g(Typ.)
Cooling method	Free air convection

Electromagnetic Compatibility (EMC)

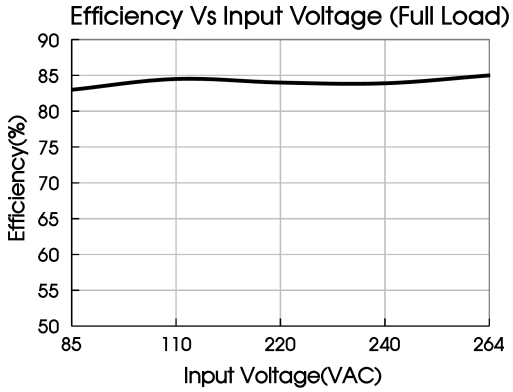
Emissions	CE	CISPR32/EN55032	CLASS A	
	RE	CISPR32/EN55032	CLASS A	
Immunity	ESD	IEC/EN61000-4-2	Contact ±4KV/Air ±6KV	Perf. Criteria B
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	±2KV	perf. Criteria B
	Surge	IEC/EN61000-4-5	line to line ±1KV / line to ground ±2KV	perf. Criteria B

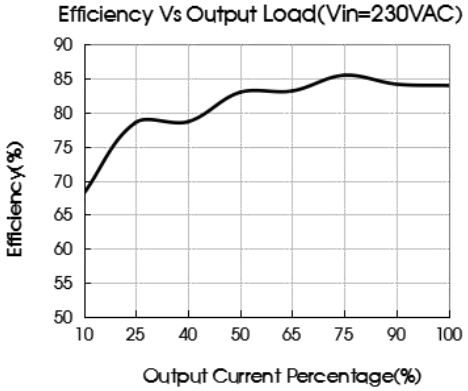
Product Characteristic Curve





Note: ① With an AC input between 85-100V/240-264VAC and a DC input between 100-120V/340-370VDC, the output power must be derated as per temperature derating curves;
② This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.





Design Reference

1. Typical application

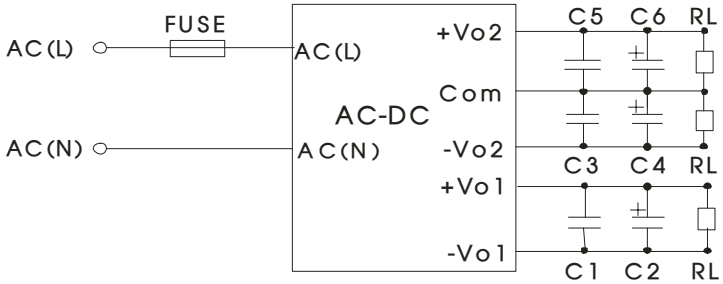
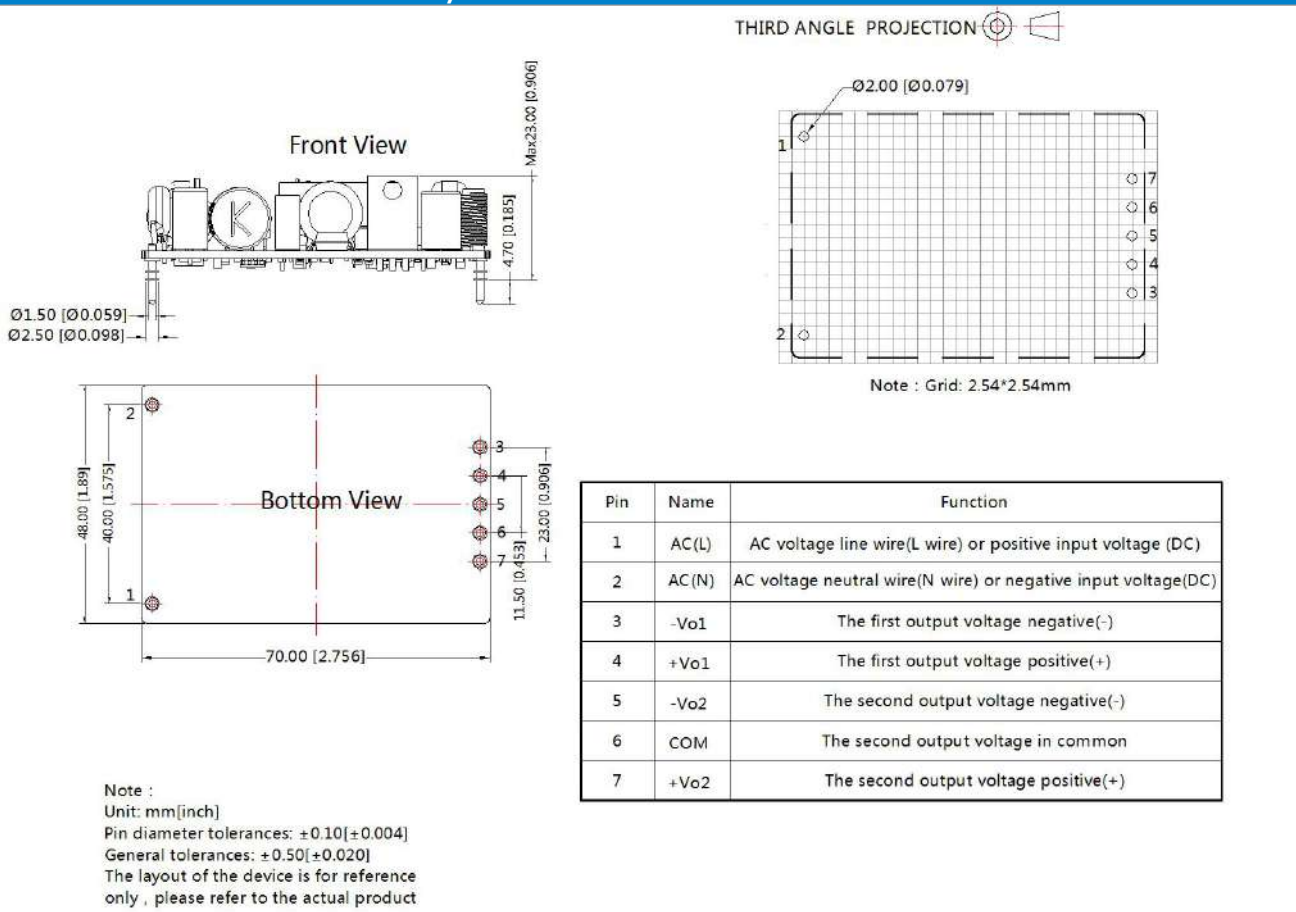


Fig. 1: Typical circuit diagram

Part No.	FUSE	C1, C3, C5	C2, C4, C6
SL020-10C0512-05	2A/250V, slow-blow , required	1μF/25V	100μF/25V

Output Filter Components:
We recommend using an electrolytic capacitor with high frequency, and low ESR rating for C2, C4, C6 (refer to manufacture's datasheet). Choose a capacitor voltage rating with at least 20% margin, in other words not exceeding 80%. C1, C3, C5 is a ceramic capacitor used for filtering high-frequency noise.

Dimensions and Recommended Layout



Pin	Name	Function
1	AC(L)	AC voltage line wire(L wire) or positive input voltage (DC)
2	AC(N)	AC voltage neutral wire(N wire) or negative input voltage(DC)
3	-Vo1	The first output voltage negative(-)
4	+Vo1	The first output voltage positive(+)
5	-Vo2	The second output voltage negative(-)
6	COM	The second output voltage in common
7	+Vo2	The second output voltage positive(+)

Note :
Unit: mm[inch]
Pin diameter tolerances: ±0.10[±0.004]
General tolerances: ±0.50[±0.020]
The layout of the device is for reference only , please refer to the actual product

Note:

1. 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;
2. 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;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. We can provide product customization service, please contact our technicians directly for specific information;
5. Products are related to laws and regulations: see "Features" and "EMC";
6. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.