AC/DC Converter

SLD01(02)-10Bxx Series

1W/2W, ULTRA SMALL SIZE AC/DC converter

FEATURES

- Wide Input voltage Range: 85~305VAC,120~430VDC
- AC and DC dual-use(input from the same terminal)
- Small size, low Ripple and Noise
- Low standby power consumption ,high efficiency, green power
- Output short circuit, over-output current protections
- EMC meets EN55022, EN55024
- Meet IEC61000, UL60950 and IEC60950 standards
- PCB mounting, Chassis mounting, Din-Rail mounting available

SLD01(02)-10Bxx *series---- is a compact size power converter offered by .* **Schmid-M** *It features Wide input voltage, taking both DC and AC input voltage, low power consumption, high efficiency, high reliability, safer isolation. It offers good EMC performance, and is UL & CE certified, and widely used in industrial, electricity, instruments, telecommunication and civil applications.*

Note: Please refer to Design Reference when module being used in a bad EMC environment.

Selection Guide

Certification	Part No.	Output Power	Nominal Output Voltage and Current(Vo/Io)	Efficiency (230VAC, %/Typ.)	Max. Capacitive Load (μF)
UL/CE	SLD01-10B03	1W	3.3V/300mA	63	4000
	SLD01-10B05		5V/200mA	68	4000
	SLD01-10B09		9V/111mA	72	2200
	SLD01-10B12		12V/83mA	73	2200
	SLD01-10B15		15V/67mA	74	1000
	SLD01-10B24		24V/42mA	75	680
	SLD02-10B03	2W	3.3V/600mA	65	4000
	SLD02-10B05		5V/400mA	70	4000
	SLD02-10B09		9V/222mA	72	2200
	SLD02-10B12		12V/167mA	76	2200
	SLD02-10B15		15V/133mA	76	1000
	SLD02-10B24		24V/83mA	78	680

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Voltage Range	AC input		85	--	305	VAC
	DC input		120	--	430	VDC
Input Frequency			47	--	63	Hz
Input Current	115VAC	SLD01models	--	--	0.037	A
		SLD02models	--	--	0.055	
	230VAC	SLD01models	--	--	0.021	
		SLD02models	--	--	0.031	
Inrush Current	115VAC		--	7	--	A
	230VAC		--	14	--	
Leakage Current			--	--	0.15	mA
Recommended External Input Fuse(Special package series include fuse)			1A/300V			
Hot Plug			Unavailable			

AC/DC Converter

SLD01(02)-10Bxx Series

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	3.3V output	--	±6	--	%
	Other output	--	±5	--	
Line Regulation	Full load	--	±2	--	
Load Regulation	10%-100% load	--	±5	--	
Ripple & Noise*	20MHz bandwidth (peak-peak value)	--	100	200	mV
Temperature Coefficient		--	±0.04	--	%/℃
Stand-by Power Consumption		--	--	0.2	W
Short Circuit Protection		Continuous, and auto resume			
Over-current Protection	SLD01-10Bxx	110%～400% IO can auto resume			
	SLD02-10Bxx	120%～240% IO can auto resume			
Hold-up Time	230VAC input	--	50	--	ms

Note: * Ripple and Noise are measured by the method of parallel lines, please see AC-DC Converter Application Notes for specific operation methods.

General Specifications

Item		Operating Conditions	Min.	Typ.	Max.	Unit
Isolation Voltage	Input-output	Tested for 1 minute	3000	--	--	VAC
Operating Temperature			-25	--	+70	℃
Storage Temperature			-25	--	+85	
Storage Humidity			--	--	95	%RH
Switching Frequency			--	--	100	KHz
Power Derating		-25℃～-10℃	1.33	--	--	%/℃
		+55℃～+70℃	3.3	--	--	
Safety Standard			IEC60950/EN60950/UL60950			
Safety Certification			EN60950/UL60950			
Safety Class			CLASS II			
MTBF			MIL-HDBK-217F@25℃ > 300,000 h			

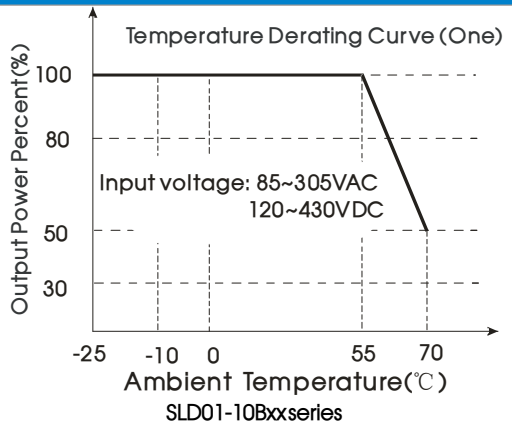
Physical Specifications

Casing Material		Black flame-retardant and heat-resistant plastic (UL94-V0)
Dimension	Horizontal package/A2S chassis mounting/A4S Din-Rail mounting	Refer to the Dimensions
Weight	Horizontal package/A2S chassis mounting/A4S Din-Rail mounting	20g /40g /60g (Typ.)
Cooling Method		Free convection

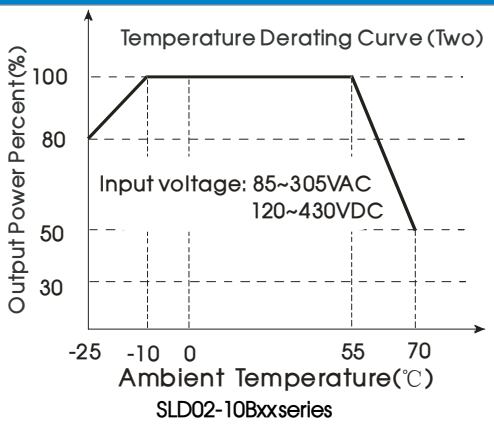
EMC Specifications

EMI	CE	CISPR22/EN55022, CLASS B	
	RE	CISPR22/EN55022, CLASS B	
EMS	ESD	IEC/EN 61000-4-2 ±4KV/±8KV	perf. Criteria B
	RS	IEC/EN 61000-4-3 10V/m	perf. Criteria A
	EFT	IEC/EN 61000-4-4 ±2KV (See Fig. 2 for recommended circuit)	perf. Criteria B
	Surge	IEC/EN 61000-4-5 ±1KV/±2KV (See Fig. 2 for recommended circuit)	perf. Criteria B
	CS	IEC/EN61000-4-6 10Vr.m.s	perf. Criteria A
	PFM	IEC/EN61000-4-8 10A/m	perf. Criteria A
	Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11 0%-70%	perf. Criteria B

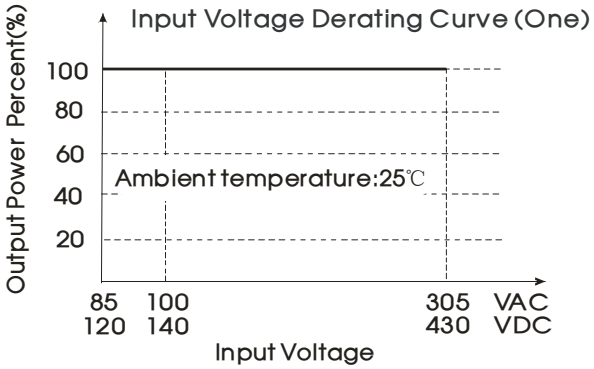
Product Characteristic Curve

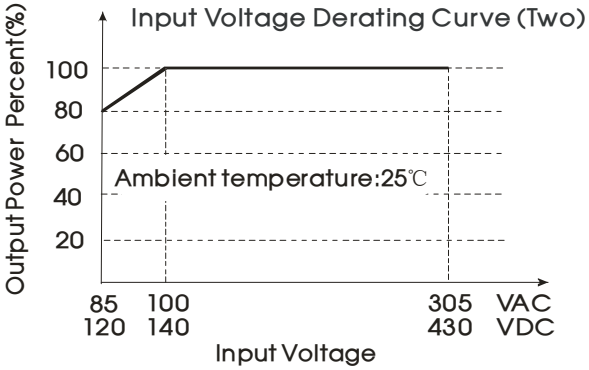


SLD01-10Bxxseries

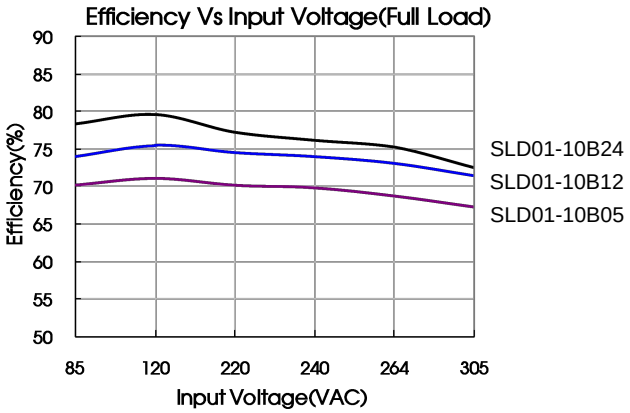


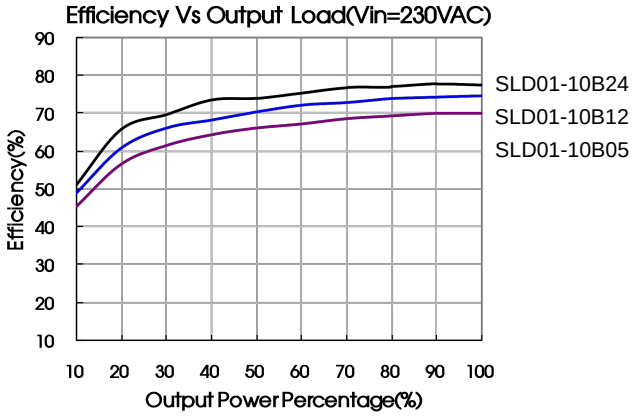
SLD02-10Bxxseries

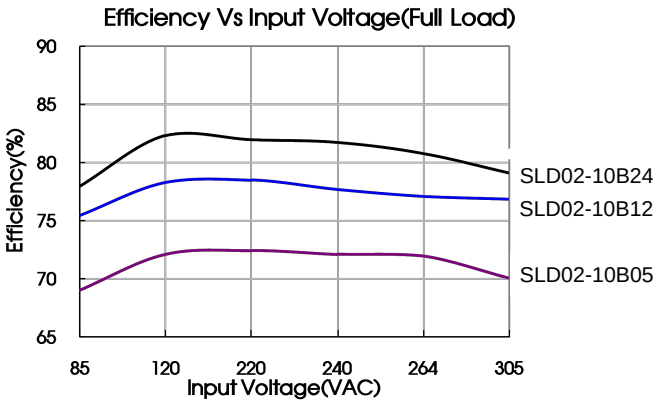


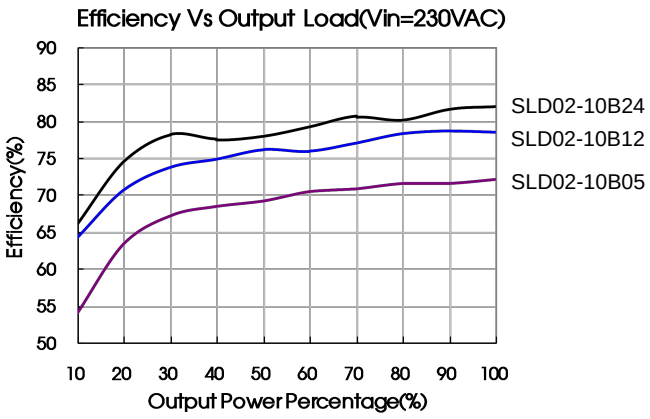


Note: ①SLD02-10Bxxseries input voltage should be derated based on temperature derating when it is 85~100VAC/120~140VDC;
②This product is suitable for use in natural air cooling environments, if in a closed environment, please contact our company's FAE.









Design Reference

1. Typical application circuit

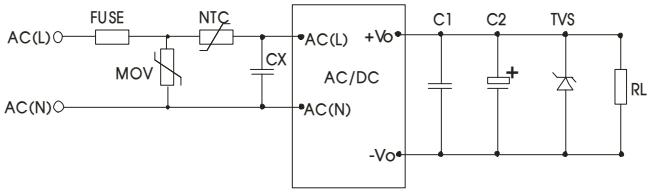


Fig. 1

Model	C1（μF）	C2（μF）	TVS
SLD01(02)-10B03	1	220	SMBJ7.0A
SLD01(02)-10B05		220	SMBJ7.0A
SLD01(02)-10B09		120	SMBJ12A
SLD01(02)-10B12		120	SMBJ20A
SLD01(02)-10B15		120	SMBJ20A
SLD01(02)-10B24		68	SMBJ30A

Note: Output filtering capacitor C2 is electrolytic capacitor, 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 is ceramic capacitor, which is used to filter high-frequency noise. TVS is a recommended component to protect post-circuits if converter fails. External input FUSE is recommended to use 1A/300V; external input MOV is recommended to use S14K350; external input NTC is recommended to use 10D-11; external input CX is recommended to use 0.47μF/305VAC.

2. EMC solution-recommended circuit

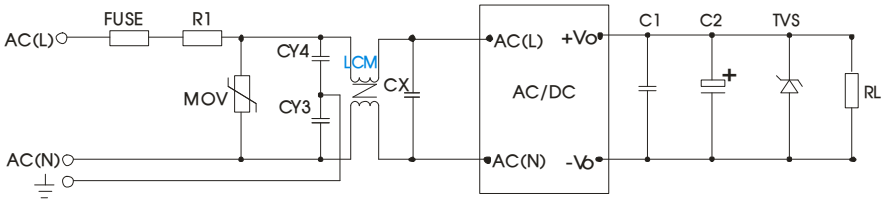
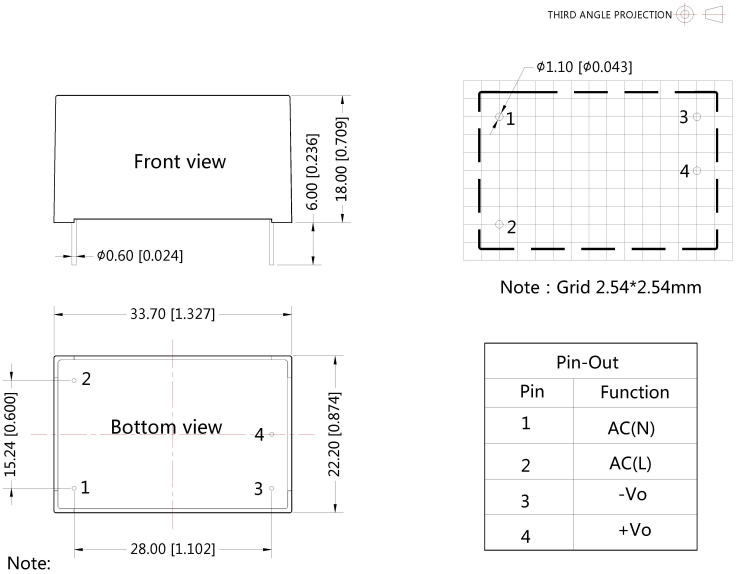


Fig 2

Components	Recommend Parameter
MOV	S14K350
CY3	2.2nF/400V
CY4	2.2nF/400V
CX	0.47μF/305VAC
LCM	10 mH, recommended to use SCHMID-M's SFL2D-Z5-103
R1	47Ω/3w
FUSE	1A/300V, slow blow, it must be connected to FUSE

SLD01(02)-10Bxx Dimensions and Recommended Layout



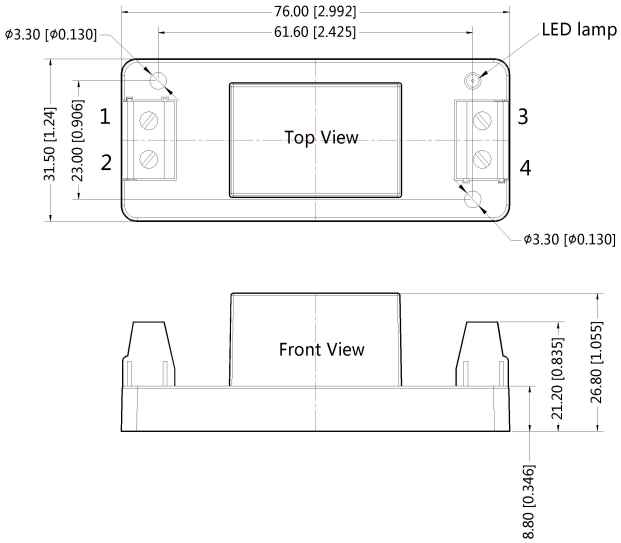
Note : Grid 2.54*2.54mm

Pin-Out	
Pin	Function
1	AC(N)
2	AC(L)
3	-Vo
4	+Vo

Note:
Unit :mm[inch]
Pin diameter tolerances :±0.10[±0.004]
General tolerances:±0.50[±0.020]

SLD01(02)-10BxxA2S Chassis mounting Dimensions

THIRD ANGLE PROJECTION

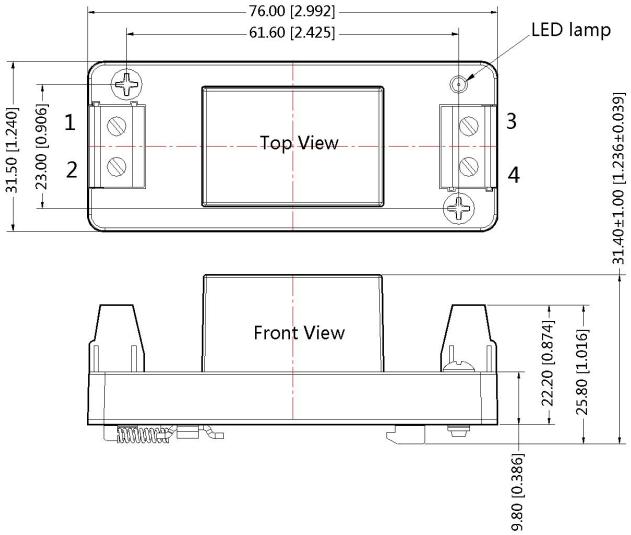


Pin-Out	
Pin	Function
1	AC(N)
2	AC(L)
3	+Vo
4	-Vo

Note:
Unit:mm[inch]
Wire range : 24~12 AWG
General tolerances:±0.50[±0.020]

SLD01(02)-10BxxA4S Din-Rail mounting Dimensions

THIRD ANGLE PROJECTION



Pin-Out	
Pin	Function
1	AC(N)
2	AC(L)
3	+Vo
4	-Vo

Note:
Unit:mm[inch]
Wire range : 24~12 AWG
General tolerances:±0.50[±0.020]

Notes:

1. Packing information please refer to Product Packing Information which can be downloaded from www.schmid-m.com. SLD01(02) Packing bag number: 58220014(Horizontal package), 58220022(A2S/A4S package);
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. The performance parameters of the product models listed in this manual are as above, but some parameters of non-standard model products may exceed the requirements mentioned above. Please contact our technicians directly for specific information;
6. We can provide product customization service;
7. Specifications are subject to change without prior notice.