SLDE20-23BxxR4

Product Feature

- Universal Input: 85-305VAC/100-430VDC
- Package Type: DIP
- Operating Temperature Range：-40℃ - +85℃
- Isolation Voltage: 4000VAC
- Full Load Efficiency: 87%
- Bare metal can meet EMI: CLASS B
- OVC III (meet EN61558-1)
- Output short circuit protection and over current protection
- According to safety standards: IEC/EN61558,IEC/EN60335

CE
EN62368-1

Selection Guide

Certification	Part No.	Input Voltage (VAC)	Output Power (W)	Output Voltage (VDC)	Output Current Max.(mA)	Full Load Efficiency (230VAC,Typ)	Capacitive Load(μF) Max.
EN	SLDE20-23B03R4	85-305	14.9	3.3	4500	81	8000
	SLDE20-23B05R4	85-305	20	5	4000	85	8000
	SLDE20-23B09R4	85-305	19.8	9	2200	84	5400
	SLDE20-23B12R4	85-305	20	12	1670	85	4000
	SLDE20-23B15R4	85-305	20	15	1330	86	3000
	SLDE20-23B18R4	85-305	20	18	1112	86	3000
	SLDE20-23B24R4	85-305	19.9	24	830	87	1000

Note: 1. All the above data were tested within the parameter range of typical application circuits;
2.Adding "A2S" to the product model suffix indicates an extension for wired packaging, while adding "A4S" to the suffix indicates an extension for rail-mounted packaging.
3.The product images are for reference only. Please refer to the actual product for details.

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage	AC Input	85	--	305	VAC
	DC Input	100	--	430	VDC
Input Current	115VAC	--	--	0.5	A
	230VAC	--	--	0.3	
Inrush current	115VAC	--	30	--	
	230VAC	--	60	--	
Input Frequency		47	--	63	Hz
Fuse		3.15A/300V, slow-blow, required			
Leakage Current	230VAC/50Hz	0.1mA RMS MAX.			
Hot Plug		Unavailable			

SLDE20-23BxxR4

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy		--	±2	--	%
Linear Regulation Rate	Vin=Min. to Max. @Full Load	--	±0.5	--	%
Load Regulation Rate	0%-100% load	--	±1.0	--	%
Ripple Noise	20MHz bandwidth,5%-100% load	--	100	150	mV
Temperature Drift Coefficient		--	±0.02	--	%/℃
Stand-by Power Consumption	230VAC	--	0.1	--	W
Min. Load		0	--	--	%
Over Current Protection		110	--	--	%Io
Short-Circuit Protection		Continuous, Self-Recovery			
Hold-up Time	230VAC	--	55	--	ms
Note: The test method for ripple and noise adopts the proximity test method, with a 10uF electrolytic capacitor and a 1uF ceramic capacitor					

General Specifications

Item	Operating Conditions			Min.	Typ.	Max.	Unit
Insulation Voltage	Input-output, test time 1 minute, leakage current less than 5mA			4000	--	--	VAC
Insulation Resistance	Input-output, insulated voltage 500VDC			100	--	--	MΩ
Power Derating	-40℃ - -25℃	Input voltage	85-165VAC	2.0	--	--	%/℃
	+50℃ - +85℃	Output voltage	3.3/5/9V	2.8	--	--	
	+50℃ - +85℃		12/15/18/24V	3.33	--	--	
	85VAC - 100VAC/100VDC-120VDC			2.0	--	--	%/VAC
	277VAC - 305VAC/390VDC-430VDC			0.7	--	--	
Operating Temperature				-40	--	+85	℃
Storage Temperature				-40	--	+85	℃
Storage Humidity				--	--	95	%RH
Soldering Profile	Wave-soldering			260 ± 5℃; time: 5 - 10s			
	Manual-welding			360 ± 10℃; time: 3 - 5s			
Safety Standard	IEC/EN/BS EN62368-1,EN61558-1,EN60335-1;UL62368-1						
Safety Class				CLASS Ⅱ			
MTBF	MIL-HDBK-217F@25℃			>1,500,000h			

SLDE20-23BxxR4

Mechanical Specifications

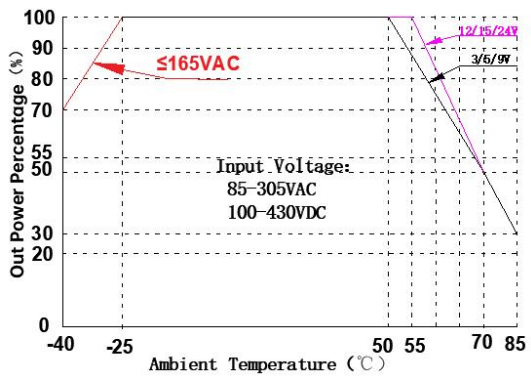
Case Material	Black plastic; flame-retardant and heat-resistant（UL94V-0）
Package Dimensions	52.40 x 27.20 x 24.00mm
Weight	50.5g（Typ.）
Cooling Method	Free air convection

EMC Specifications

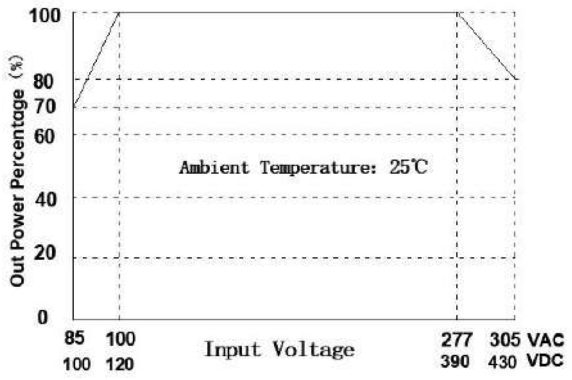
EMI	CE	CISPR32/EN55032 CLASS B CISPR11/EN55011 CLASS B EN55014-1	
	RE	CISPR32/EN55032 CLASS B CISPR11/EN55011 CLASS B EN55014-1	
EMS	RS	IEC/EN61000-4-3 10V/m	perf. Criteria A
		EN55014-2	perf. Criteria A
	EFT	IEC/EN61000-4-4 ±4KV（Recommended Circuit（2-1））	perf. Criteria B
		IEC/EN61000-4-4 ±2KV （Recommended Circuit（2-2））	perf. Criteria A
		EN55014-2	perf. Criteria B
	Surge	IEC/EN61000-4-5 line to line ±1KV	perf. Criteria B
		IEC/EN61000-4-5 line to line ±2KV（Recommended Circuit（2-2））	perf. Criteria B
		IEC/EN61000-4-5 line to line ±2KV/line to PE ±4KV/（Recommended Circuit（2-2））	perf. Criteria A
		EN55014-2	perf. Criteria B
	CS	IEC/EN61000-4-6 10Vr.m.s	perf. Criteria A
		EN55014-2	perf. Criteria A
	ESD	IEC/EN61000-4-2 Contact ±6KV / Air ±8KV	perf. Criteria A

Typical Characteristic Curves

Temperature Derating Curve

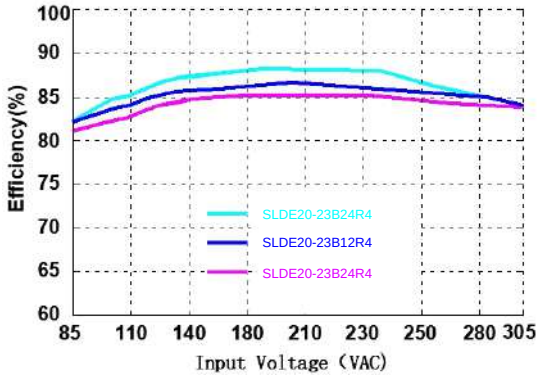


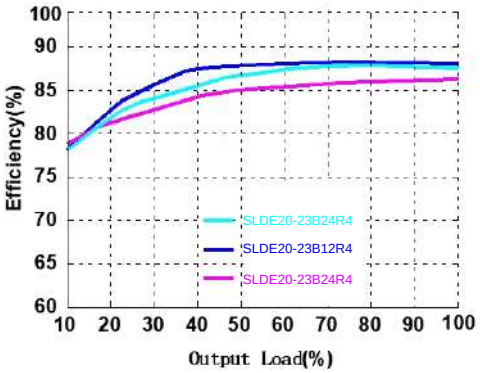
Input Voltage Derating Curve



SLDE20-23BxxR4

Efficiency VS Input Voltage Curve (Full load)	Efficiency VS Output Load Curve(Vin=230VAC)



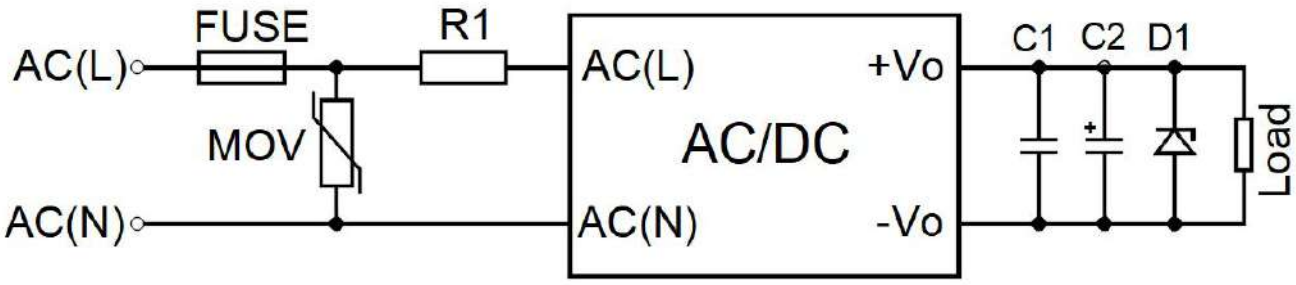


Note: 1. For input voltages of 85-100VAC/277-305VAC, voltage derating should be carried out on the basis of temperature derating.

2.This product is suitable for use in a natural wind-cooled environment.

Typical Circuit Design and Application

Application circuit（Figure 1）



Reference Table for Selection of Peripheral Devices

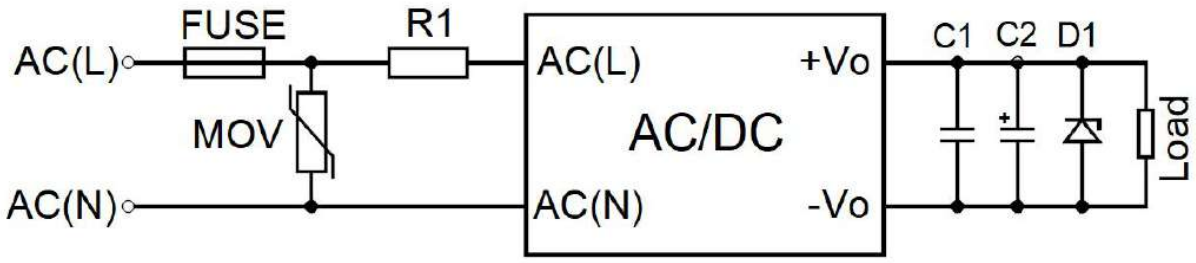
Out Voltage	FUSE	MOV	R1	C1	C2	D1
3.3/5VDC	3.15A/300VAC slow-blow, required	14D561K	3Ω/3W wire-wound resistor, required	1uF/16V	330uF/16V	See Note2
9/12/15VDC				1uF/25V	220uF/25V	
18/24VDC				1uF/50V	100uF/35V	

Note:

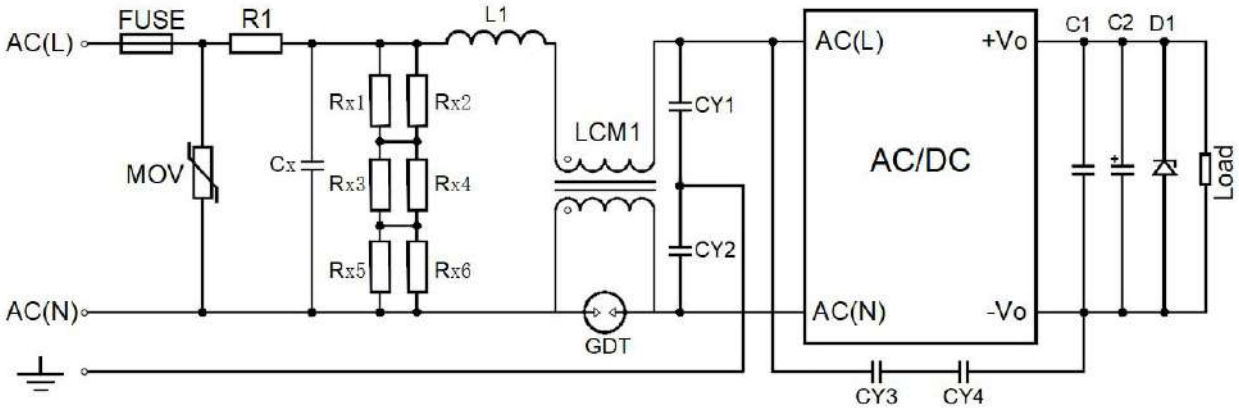
1. FUSE and Mov Can be selected based on actual needs.
2. D1 is a TVS transistor that can protect the downstream circuit in case of module abnormalities. It is recommended to choose a model that is 1.2 times the output voltage.

EMS Solutions - Recommended Circuitst

EMS Solutions - Recommended Circuitst（Figure 2）



EMC Recommended Circuit（**2-1**）



EMC Recommended Circuit（**2-2**）

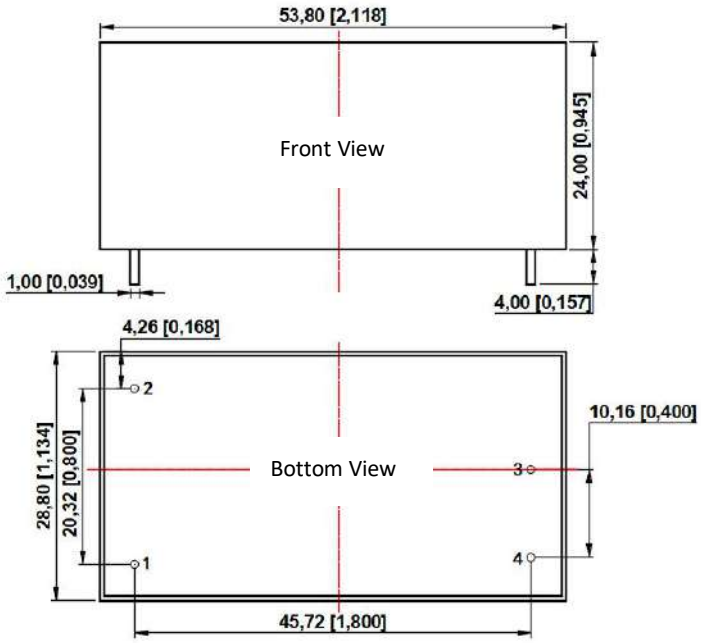
（When the output of the product needs to be connected to PE or connected to PE through Y capacitor，Recommended）

Recommended parameter values for EMC solution circuits	
Model	Recommended value
FUSE	3.15A/300VAC，slow-blow, required
MOV	14D561K
R1	6.8Ω/5W wire-wound resistor, required
Cx	0.33uF/305VAC
L1	1.2mH/0.5A
CY1、CY2、CY3、CY4	2.2nF/400VAC
GDT	300V/1KA
LCM1	20mH，Common mode inductance
Rx1,Rx2,Rx3,Rx4,Rx5,Rx6	1.5MΩ/1206
C1,C2,D1	Refer to typical circuit design and application

SLDE20-23BxxR4

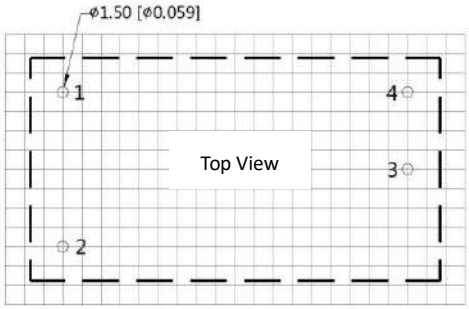
Dimensions and Recommended Layout

Dimensions



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

PCB Printing Layout

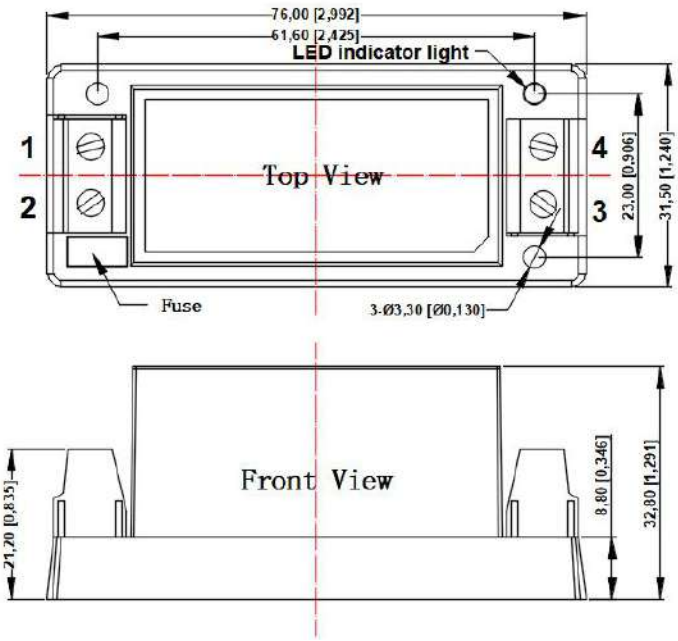


Grid size：2.54*2.54mm

Pin FunctionTable

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

A2S Dimensions



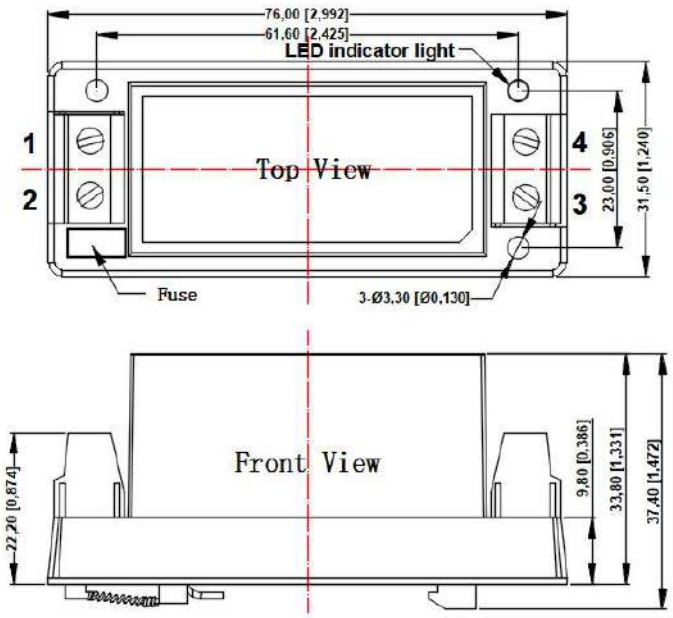
Pin FunctionTable

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

Note:
Unit: mm[inch]
Wire range: 24-12 AWG
Tightening torque: Max 0.4 N·m
General tolerances: +1.00[+0.039]

SLDE20-23BxxR4

A4S Dimensions	Pin FunctionTable



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

Note:

Unit: mm[inch]

Wire range: 24-12 AWG

Tightening torque: Max 0.4 N·m

Mounting rail: TS35, rail needs to connect safety ground

General tolerances: +1.00[+0.039]

Packaging instructions

Pearl Cotton Packaging Information Preview Form			
Model series	Pearl Cotton (pcs/ Cotton)	Inner box (pcs/ box)	Full box Quantity (pcs)
SLDE20-23BxxR4	35	105	210
SLDE20-23BxxR4 A2S	28	56	112
SLDE20-23BxxR4 A4S	28	56	112

Note:

- The input voltage should not exceed the specified range value, otherwise it may cause permanent and irreparable damage;
- It is recommended to use at a load of over 5%. If the load is below 5%, the ripple index of the product may exceed the specifications, but it does not affect the reliability of the product;
- The maximum capacitive load is tested within the input voltage range and under full load conditions;
- Unless otherwise specified, all indicators in this manual are measured at Ta=25 ℃, humidity<75% RH, nominal input voltage, and output rated load;
- All indicator testing methods in this manual are based on our company's corporate standards;
- Our company can provide product customization, and specific requirements can be directly contacted by our technical personnel;
- Product specifications are subject to change without prior notice.