

### Features:

- Small size with 16A switching capability.
- Low coil power consumption: 200mW available.

### Typical applications:

- Home appliances, office equipment, instrument, etc.



### Approvals

UL, c-UL (File No.): E179745  
CQC (File No.): CQC02001002127  
TUV (File No.): R50139459

### Contact Data

Contact arrangement	1 Form A(NO)
Rated voltage	250VAC
Max.switching voltage	277VAC
Rated current	10A/16A
Min. recommended contact load	1A, 6VDC
Breaking capacity max.	4432VA
Contact material	AgNi , AgSnO <sub>2</sub>
Frequency of operation	360 ops./h
Operate/release time max.	15ms/8ms
Electrical endurance	See electrical endurance graph

### Contact ratings

Type	Contact	Load	Cycles
<b>UL 60947-4-1</b>			
SPA	A(NO)	5A/10A/15A/16A,250VAC/277VAC,cos φ=1,85℃	1X10 <sup>5</sup>
SPA	A(NO)	10A, 24 VDC,85℃	1X10 <sup>5</sup>
SPA	A(NO)	TV-8, 250 VAC,85℃	2.5X10 <sup>4</sup>
<b>GB/T 21711.1-2023</b>			
SPA	A(NO)	10A/16A,250VAC/277VAC,85℃	2X10 <sup>4</sup>
SPA	A(NO)	10A/16A,250VAC/277VAC,105℃	2X10 <sup>4</sup>
<b>IEC 61810</b>			
SPA	A(NO)	10A,30VDC,85℃	1X10 <sup>5</sup>
SPA	A(NO)	16A/10A,250VAC/277VAC,85℃	1X10 <sup>5</sup>
Mechanical endurance			≥1x10 <sup>7</sup>

### Coil Data

Coil voltage range:	5 to 24VDC
Operative range, IEC 61810	2
Coil insulation system according UL	Class F

### Coil Data(continued)

Coil versions, DC coil

Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω ( 1±10% )	Rated coil powers mW
5	≤3.75	≥0.25	125	200
6	≤4.5	≥0.3	180	200
9	≤6.75	≥0.45	405	200
12	≤9	≥0.6	720	200
18	≤13.5	≥0.9	1620	200
24	≤18	≥1.2	2880	200

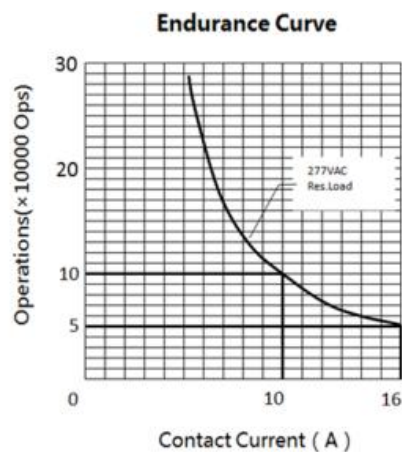
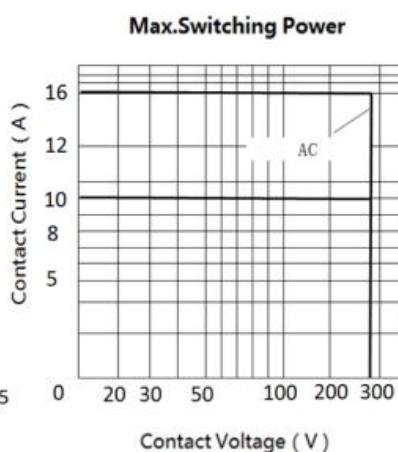
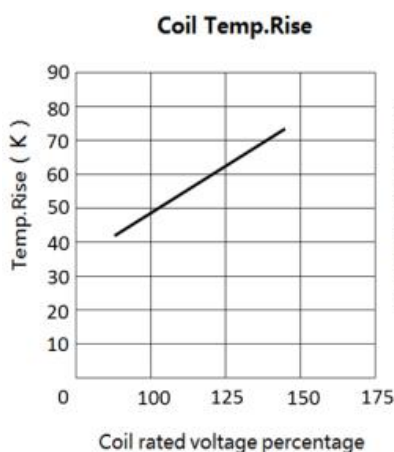
All figures are given for coil without pre-energization, at ambient temperature 20℃

### Insulation Data

Initial dielectric strength	
between open contacts	1000VAC
between contact and coil	2500VAC
Clearance/Creepage	
between contact and coil ( Clearance )	≥3.5mm(actual)
between contact and coil ( Creepage )	≥4.0mm(actual)
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 175V/PTI 250V

### Other Data

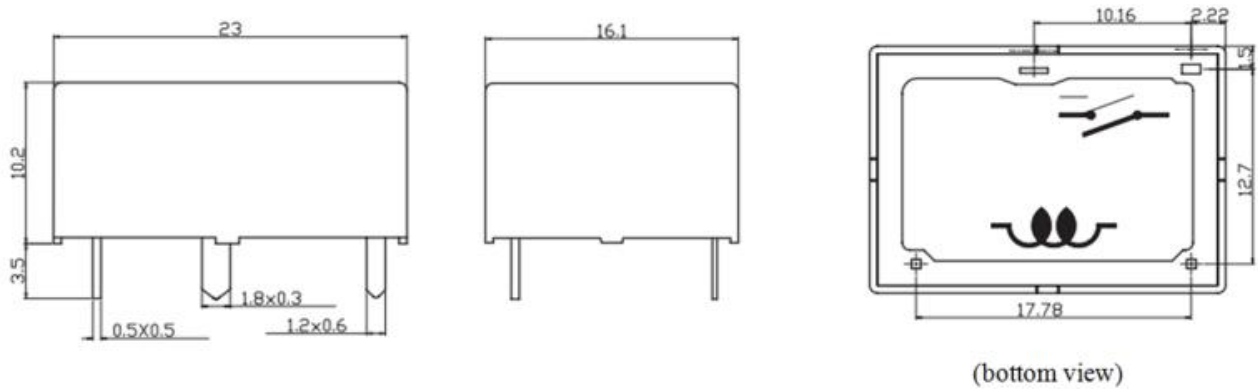
Material compliance:	EU RoHS/ELV, China RoHS, REACH
Ambient temperature	-40℃ to +85℃,-40℃to +105℃
Category of environmental protection	
IEC 61810	RTII - flux proof RTIII - Sealed type washable
Weight	Approx. 8.6g
Resistance to soldering heat THT (IEC 60068-2-20)	260℃/5s
Packaging/unit	tube, tray



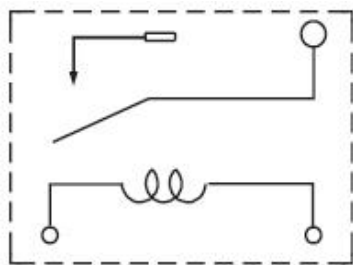
Note:

- (1) Test conditions: room temperature, flux-proof product, resistive load, 1s on, 9s off.
- (2) The above curves are for reference only, and the final result is subject to the experiment.

### Dimensions

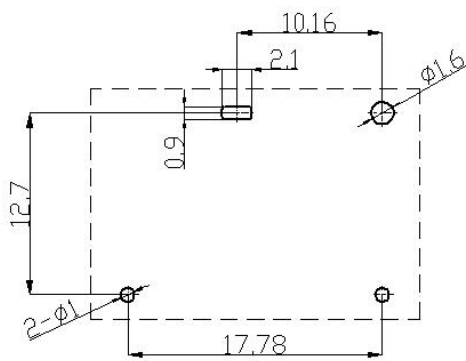


### Wiring Diagrams



Wiring Diagram(Bottom view)

### PCB Layouts (bottom view)



P.C.B.Layout(Bottom view)

In case of no tolerance shown on outline dimension

If dimension < 1 mm, tolerance:  $\pm 0.2\text{mm}$

If dimension 1~5mm, tolerance:  $\pm 0.3\text{mm}$

If dimension > 5mm, tolerance:  $\pm 0.4\text{mm}$

Notes:

1.The dimension of pin is the size before tinning

2.Tolerance of PCB layout:  $\pm 0.1\text{ mm}$ .

### Product Code Structure

SPA	-S	-1	12	D	M	2	-F	-XX	
									Special Parameter : Letter or number - Special requirement
									Insulation System : Nil - Standard B - Class B F - Class F
									Contact Material : 2 - AgSnO <sub>2</sub> 3 - AgNi & AgSnO <sub>2</sub>
									Contact Arrangement: M-Form A
									Coil Power : D - 0.2W
									Rated Coil Voltage(VDC): 05, 06, 09, 12, 18, 24
									Number of Poles: 1 - 1Pole
									Protective Construction S - Flux-proof      SH - Sealed type washable
									Type: SPA

### Examples of Ordering Codes

SPA-S-112DM2      relay SPA , Flux-proof , rated DC voltage 12V ,coil power 0.2W ,1NO,and contact material AgSnO<sub>2</sub>  
SPA-S-112DM3      relay SPA , Flux-proof , rated DC voltage 12V ,coil power 0.2W ,1NO,and contact material AgNi & AgSnO<sub>2</sub>.

### Disclaimer

The specification is for reference only. Specifications are subject to change without prior notice.

We could not evaluate all the performance and all the parameters for every possible applications. Thus the users should in a right position to choose suitable product for their own application. For sealed relays, after installation and cleaning, please open the ventilation hole in the case before use. If there is any query, please contact Sanyou for technical services. However it is the user's responsibility to determine which product should be used.