


**小型功率继电器**  
**Miniature Power Relay**
**SPA**
**特点 Features**

- 小型, 可达 16A。  
Small size with 16A switching capability.
- 低功耗, 可供 200mW 线圈消耗。  
Low coil power consumption: 200mW available

**安规认证 Safety Approval**

UL/CUL 认证号 (File No.): E179745  
 TUV 认证号 (File No.): R50139459  
 CQC 认证号 (File No.): CQC02001002127

**触点负载 Contact Capacity**

型号 Model	SPA
额定负载 (阻性) Nominal switching capacity (Res. load)	10A 250VAC
最大切换电流 Max. Switching Current	16A
最大切换电压 Max. switching voltage	277VAC
最大切换功率 Max. switching power	4432VA

**性能参数 Characteristic Data**

触点材料 Contact material	银合金 Silver alloy	
接触电阻 Contact resistance	100mΩ Max. (1A 6VDC)	
吸合时间 Actuation time	15msec. Max. (不加二极管 No diode)	
释放时间 Release time	8msec. Max. (不加二极管 No diode)	
绝缘电阻 Initial insulation resistance	1,000MΩ Min.(DC500V)	
介质耐压 Initial dielectric strength	触点与触点间 Between open contacts: AC1,000V, 50/60Hz 1min.	
	触点与线圈间 Between coil and contact: AC2,500V, 50/60Hz 1min.	
抗振动 Vibration resistance	耐久 Functional	10 ~ 55Hz, 双振幅 1.5 mm 10 ~ 55Hz, at double amplitude of 1.5 mm
	误动作 Destructive	10 ~ 55Hz, 双振幅 1.5 mm 10 ~ 55Hz, at double amplitude of 1.5 mm
抗冲击 Shock resistance	耐久 Functional	100G Min.
	误动作 Destructive	10G Min.
寿命 Endurance(operations)	机械寿命(每小时 10,800 次) Mechanical (at 10,800 ops./h)	10,000,000 (室温 at room temperature)
	电气寿命(每小时 360 次) Electrical (at 360 ops./h)	100,000 (室温 at room temperature)
环境温度 Ambient temperature	-40°C ~ +85°C (不冷凝 No condensation) -40°C ~ +105°C 仅适用 CQC 和 UL 安规 Only for CQC and UL safety approval	
重量 Unit weight	约 Approx.8.6g	

**线圈参数(at 20°C) CoilData (at 20°C)**

额定电压 Nominal voltage (VDC)	额定电流 Nominal operating Current ±10% (mA)	线圈电阻 Coil Resistance ±10% (Ω)	最大连续外加电压 Max. Allowable voltage	吸合电压 Pick-up voltage (Max.)	释放电压 Drop-out voltage (Min.)	额定功率 Nominal Operating power
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5	40	125	额定电压的 150% 150% of Nominal voltage	额定电的 75% 75% of Nominal voltage	额定电压的 5% 5% of Nominal voltage	约 0.2W Approx.0.2W
9	22.22	405				
12	16.67	720				
18	11.11	1620				
24	8.33	2880				

### 安规认证负载 (注: 更多详细的认证负载, 参考安规证书)

Safety Approval Ratings (Note: More detail of approval ratings, please refer to the safety certification)

认证类型 Approval	CQC	TUV	UL/CUL
认证号码 File No.	CQC02001002127	R50139459	E179745
认证负载 Approved ratings	10A 250VAC 16A 125/250/277VAC	10A 250VAC 10A 30VAC 16A 125/250/277VAC	15A 125VAC, Resistive 10A 250VAC, Resistive 10A 24VDC, Resistive 5A 125VAC, General use 16A 125/250/277VAC, Resistive

(1) 上述未注明温度的负载, 均指环境温度为室温。

The above-mentioned unspecified temperature ratings, means that the ambient temperature is room temperature.

(2) 以上仅列出了该产品认证的部分负载, 每个负载的详细测试条件不同, 因此电寿命次数不一样。如需了解详细情况, 请联系三友。

Only some typical ratings are listed above. Each rating's test condition is different, so the electrical endurance will be different. If more details are required, please contact us.

(3) 对于塑封式、防水式产品试验时, 应打开外壳的透气孔。

For sealed type testing, please open the ventilation hole of case before test.

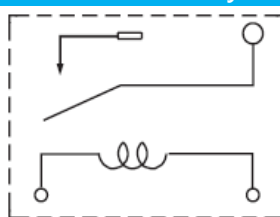
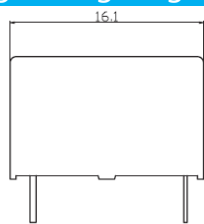
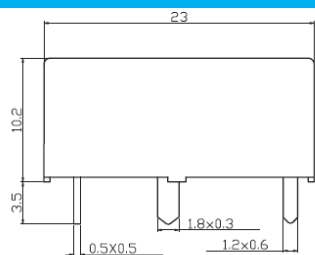
### 订货标记 Ordering Information

#### 型号命名规则 Nomenclature

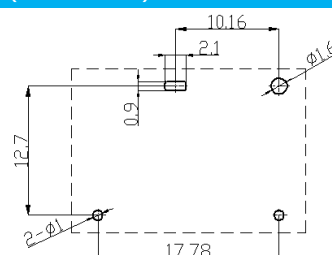
<b>SPA</b>	<b>-S</b>	<b>-1</b>	<b>12</b>	<b>D</b>	<b>M</b>	<b>2</b>	<b>-F</b>	<b>-XX</b>	
									特殊参数 Special Parameter:
									无-标准型, 字母或数字-特殊要求 Nil-Standard type, Letters or Numbers-Special requirements
									绝缘等级 Insulation System:
									无-普通型, Nil-Standard B-Class B, F-Class F
									触点材质 Contact Material:
									2-AgSnO <sub>2</sub> , 3-AgNi+AgSnO <sub>2</sub>
									触点形式 Contact Form:
									M-Form A
									线圈功耗 Coil Power:
									D-0.2W
									线圈规格 Coil Voltage (VDC)
									05, 09, 12, 18, 24
									触点组数 Number of Poles:
									1-1 组 (Pole)
									封装形式 Protective Construction:
									S-塑封式 Flux proofed SH-防水式 Sealed type washable
									基本型号 Type Designation:
									SPA

## 外形尺寸图、接线图、安装孔位图 (单位: mm)

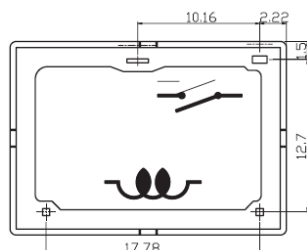
Outline dimension drawing, wiring diagram, installation vacancy drawing (unit: mm)



接线图 (底视图)  
Wiring Diagram  
(bottom view)



安装孔位图 (底视图)  
P.C.B. Layout (bottom view)



未标注尺寸公差 Unless otherwise specified:

< 1mm:  $\pm 0.2\text{mm}$     1~5mm:  $\pm 0.3\text{mm}$     > 5mm:  $\pm 0.4\text{mm}$

注: 1、引出脚尺寸为预焊前尺 Extended terminal dimension is dimension before soldering

## 典型用途 Typical Applications

家用电器、办公自动设备、仪器仪表

Home appliances, office equipment, instrument

声明: 本产品规格书仅供客户使用时参考, 若有更改, 恕不另行通知。

对三友而言, 不可能评定继电器在每个具体应用领域的所有性能参数要求, 因而客户应该根据具体的使用条件选择与之相匹配的产品。对于密封继电器在安装清洗后, 使用前请打开外壳上的透气孔。如有疑问, 请与三友联系获取更多的技术支持。但产品选型责任仅由客户负责。

Disclaimer: This datasheet is for customers' reference. All the specification are subject to change without notice.

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