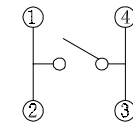
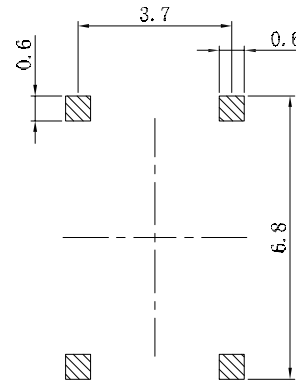
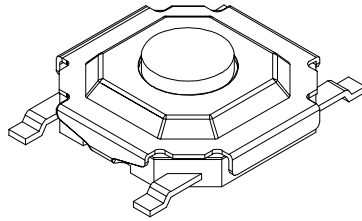
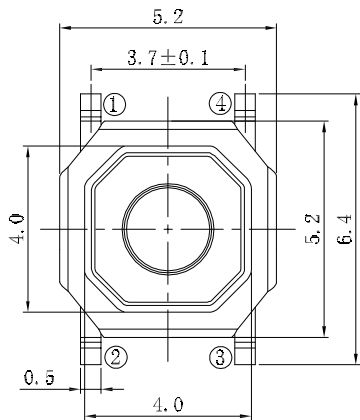
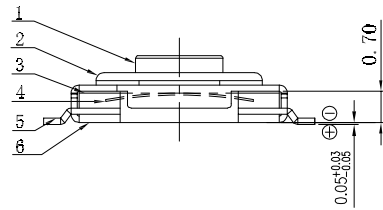
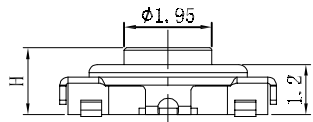


NO.	H	
01	1.5	
02	1.6	
03	1.7	
04	1.8	√
05	2.0	
06	2.5	
07	3.0	

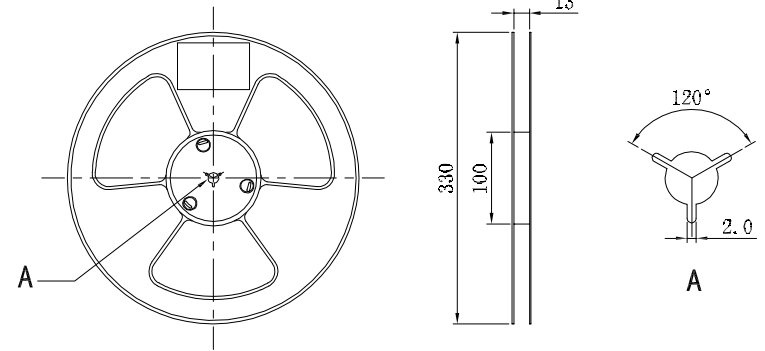
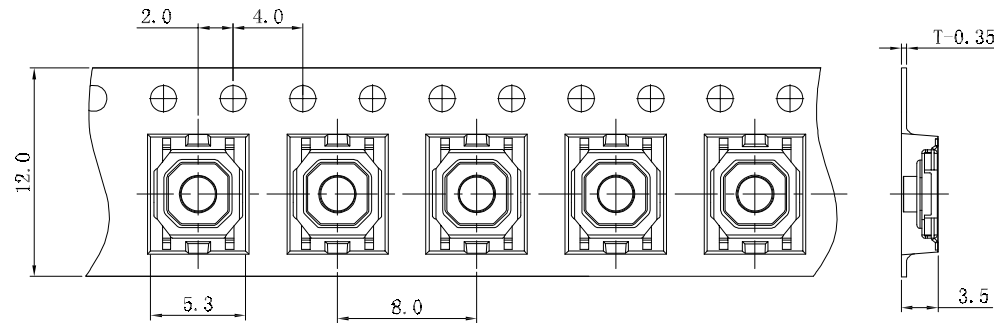


Circuit Diagram

Remarks:

1. Rated current, Voltage: DC 12V 50mA
2. Contact resistance:  $\leq 100m\Omega$
3. Insulation resistance:  $\geq 100M\Omega$
4. The intensity of operations:  $250 \pm 50gf$
5. Life requirements: 100000 times
6. Withstand voltage: AC250V 1 minute
7. All materials comply with RoHS standards

P. C. B. Layout

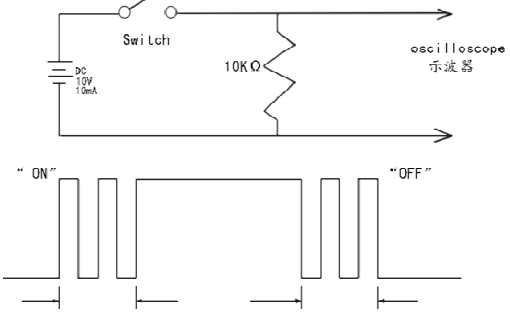


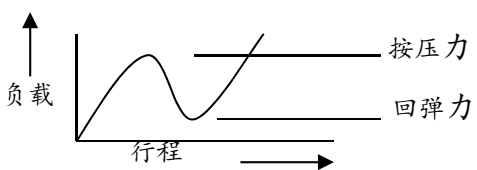
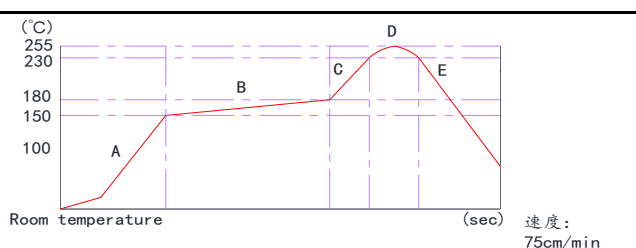
Remarks:

- 1, The number of tapes per volume is 2000 PCS;
- 2, Braiding process, can not be caused by carrying half crushed;
- 3, Pay attention to the direction of the tape, with a clockwise direction out of the carrier tape, with a hole in the top or right

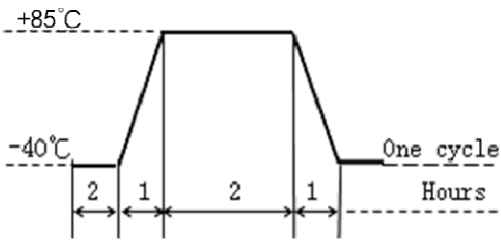
6	Housing	PPA	1	Black
5	Terminal	Phosphor copper	4	Ag Plating
4	Shrapnel	SUS	1	Ag Plating
3	Paster	Polyimide	1	Yellow
2	Cover	SUS	1	Primary
1	Button	Brass	1	Yellow
NO.	PART NAME	MATERIAL	QTY	FINISHING

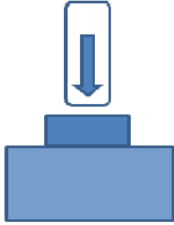
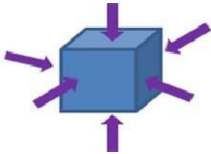
GENERAL TOLERANCE		DWG NO.	JYSA0909-001	APPD:	WIND	Scale	1:1
$X \leq 1$	$\pm 0.05$	Title	轻触开关/5.2*5.2*1.8mm	CHKD:		UNIT	mm
$1 \leq X \leq 5$	$\pm 0.10$			DR:			
$5 \leq X \leq 10$	$\pm 0.15$	Part NO.	JYS-TS180-040	Date	2018/10/31		
$X > 10$	$\pm 0.25$						
ANGLE	$\pm 3^\circ$	SHEET 1/1					

<b>1. General specification 基本事项</b>			
1.1 Switch action 开关种类 : Tact Switch 轻触开关			
1.2 Switch rating 最大额定值: DC 12V , 50 mA			
1.3 Operation temperature range 使用温度试验范围 : - 20~ + 70°C			
1.4 Preservative temperature range 保存温度范围 : - 40~ + 85°C			
1.5 Appearance and dimensions : See outside drawing page 外形及尺寸: 见外形尺寸图			
1.6 Standard condition :Unless otherwise specified, the test and measurements shall be carried out as follows: 标准条件: 试验和测量应进行如下: Ambient temperature 温度: 5 ~ 35°C Relative humidity 相对湿度: 45 ~ 85% Air pressure 气压: 86 ~ 106kPa(860~1060mbar) However, if doubt arises on the decision based on the measured Values under the above-mentioned conditions, the following conditions shall be employed: 但是在对判定产生疑义时,按下述状态实施: Ambient temperature 温度:20±2°C Relative humidity 相对湿度: 65±5% Air pressure 气压: 86 ~ 106kPa(860~1060mbar)			
<b>2. Performance性能</b>			
2.1 Electrical characteristics电气性能			
No. 序号	Item 项目	Test condition 试验条件	Performance 规格
2.1.1	Contact Resistance 接触电阻	Push force: (Operation force) x 2. 测定时的负荷: 操作方向动作力基准值的2倍 Measurement tool : Contact resistance meter 测定器: 微电流接触电阻计(1kHz, 20mV, 5~50mA)	100mΩ MAX 100mΩ 以下
2.1.2	Insulation Resistance 绝缘电阻	DC 250V(Between terminals) 不相接的两端子间、端子与塑胶间施加DC 250V 的电压	100MΩ min 100MΩ 以上
2.1.3	Withstand Voltage 耐电压	AC 250V for 1 min (Between terminals) 不相接的两端子间、端子与塑胶间施加AC 250V 的电压	No insulation destruction. 无绝缘破坏.
2.1.4	Bouncing 触点抖动	Operation speed : 3~4 times/s 操作速度: 每秒3~4次 	ON:3ms max 以下 OFF:8ms max 以下

2. 2 Mechanical Characteristics机械性能																											
No. 序号	Item 项目	Test condition 试验条件	Performance 规格																								
2. 2. 1	Operation Force 动作力	Push by recommended operating condition. 测量时在开关的顶端的面中央、按开关动作方向均匀施加静负荷。 	Push force按压力: $2.48 \pm 0.49\text{N}$ ( $250 \pm 50\text{gf}$ ) return force回弹力: $0.49\text{N min}$ ( $50\text{gf 最小}$ )																								
2. 2. 2	Travel to closure 动作行程	Push by recommended operating condition. $F=(\text{Operation force}) \times 2$ 在开关的顶端的面中央沿开关动作方向施加2倍操作力测量行程, 测量仪器的顶端应平整	$0.20 \pm 0.1\text{mm}$																								
2. 2. 3	Push trength 按压强度	30N(3Kgf) for 1 minute 在开关驱动器器件顶端的中央, 在按压力方向加30N (3Kgf) 压力, 作用60秒。	No damage (Electrical and mechanical) 无异常(电气、机械性能)																								
2. 2. 4	Terminal strength 端子强度	A static load of 300gf shall be applied to the tip of the terminal for 15 sec in any dircetion 在任意一个方向的顶端加上300gf力度测试, 时间为15秒。	No damage (Electrical and mechanical) 端子没有裂开, 松动 等异常, 满足于机械, 电器性能。																								
2. 2. 5	Vibration test 耐振性	1) Amplitude 全振幅: 1.5 mm 2) Sweep rate: 10-55-10HZ for 1 minute 扫描速度: 10-55-10HZ 1 分钟 3) Sweep method: Logarithmic frequency sweep rate 扫描方式: 对数频率扫描速度 4) Vibration direction : X, Y, Z ( 3 directions ) 振动方向: X, Y, Z ( 3 方向) 5) Time : Each direction 2 hours (Total 6 hours) 时间: 每个方向2个小时(共6个小时)	No. 2. 1 and 2. 2. 1 to 2. 2. 2 shall be satisfied 满足2.1项和2.2.1至2.2.2项。																								
2. 2. 6	Soldering heat test 耐焊接热 For reflux welding 适用于回流焊	Peak temperature : $250 \pm 5^\circ\text{C}$ 峰值温度: $250 \pm 5^\circ\text{C}$ Peak time : 10 secMax. 峰值时间: 10秒以内	No damage electrical and mechanical) 无异常。(电气、机械特性)																								
2. 2. 7	Solderbility 可焊性	After sprated flux 涂上助焊剂后 temperature : $245 \pm 5^\circ\text{C}$ 温度: $245 \pm 5^\circ\text{C}$ soldering time : $3 \pm 0.5 \text{ sec}$ 焊接时间: $3 \pm 0.5 \text{ 秒}$	90% or more of surface area of the portion immersed in solder shall be covered by new solder 90% 或更多的浸焊面积能被焊锡覆盖。																								
2. 2. 8	Reflux soldering heat test 回流焊耐热试验	 <table border="1" data-bbox="343 1971 1029 2128"> <thead> <tr> <th>Parts</th> <th>Temperature(°C)</th> <th>Time at temperature(sec)</th> <th>Treatments</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>NO~150</td> <td>60~90S</td> <td>Pre-heating zone</td> </tr> <tr> <td>B</td> <td>150~180</td> <td>90S</td> <td>Heat preservation zone</td> </tr> <tr> <td></td> <td>180~220</td> <td>30~40S</td> <td>Heating zone</td> </tr> <tr> <td></td> <td>220~255~220</td> <td>40S (其中255°C为7~10S)</td> <td>recirulaion zone</td> </tr> <tr> <td></td> <td>220 to NO</td> <td>40~80S</td> <td>Cooling zone</td> </tr> </tbody> </table>	Parts	Temperature(°C)	Time at temperature(sec)	Treatments	A	NO~150	60~90S	Pre-heating zone	B	150~180	90S	Heat preservation zone		180~220	30~40S	Heating zone		220~255~220	40S (其中255°C为7~10S)	recirulaion zone		220 to NO	40~80S	Cooling zone	90% or more of surface area of the portion immersed in solder shall be covered by new solder 90% 或更多的浸焊面积能被焊锡覆盖。
Parts	Temperature(°C)	Time at temperature(sec)	Treatments																								
A	NO~150	60~90S	Pre-heating zone																								
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	220~255~220	40S (其中255°C为7~10S)	recirulaion zone																								
	220 to NO	40~80S	Cooling zone																								

2.3 Climatic characteristics 耐候性能

No. 序号	Item 项目	Test condition 试验条件	Performance 规格
2.3.1	Cold test 耐寒性	1) Temperature : $-40\pm 2^{\circ}\text{C}$ 温度: $-40\pm 2^{\circ}\text{C}$ 2) Duration of test: 96h 持续时间: 96小时 3) Take off a drop water 去掉水珠 4) Standard conditions after test : 1h 试验后的放置条件: 1 小时	Contact resistance: 200mΩ max 接触电阻: 200mΩ 以下 Insulation resistance: 10MΩ min 绝缘电阻: DC. 100V, 大于10MΩ Withstand voltage: No. destruction. 耐电压: 无绝缘破坏. No. 2.2.1 to 2.2.2 shall be satisfied 满足2.2.1到2.2.2项.
2.3.2	Heat test 耐热性	1) Temperature : $80\pm 2^{\circ}\text{C}$ 温度: $80\pm 2^{\circ}\text{C}$ 2) Duration of test: 96h 持续时间: 96小时 3) Standard conditions after test : 1h 试验后的放置条件: 1 小时	Contact resistance: 200mΩ max 接触电阻 200mΩ 以下 Insulation resistance: 10MΩ min 绝缘电阻: DC 100V, 大于10MΩ Withstand voltage: No. destruction. 耐电压: 无绝缘破坏. No. 2.2.1 to 2.2.2 shall be satisfied 满足2.2.1到2.2.2项.
2.3.3	Temperature cycle 温度循环	According to following figure, after 5cycles, test after keeping in normal condition for 1h. 如图示环境中, 循环5次后, 放置在正常环境中, 1小时后进行测量。 	Contact resistance: 200mΩ max 接触电阻 200mΩ 以下 Insulation resistance: 10MΩ min 绝缘电阻: DC 100V, 大于10MΩ Withstand voltage: No. destruction. 耐电压: 无绝缘破坏. No. 2.2.1 to 2.2.2 shall be satisfied 满足2.2.1到2.2.2项.
2.3.4	Humidity test 耐湿性	1) Temperature : $60\pm 2^{\circ}\text{C}$ 温度: $60\pm 2^{\circ}\text{C}$ 2) relative humidity: 90~95% 相对湿度: 90~95% 3) Duration of test: 96h 持续时间: 96小时 4) Take off a drop water 去掉水珠 5) Standard conditions after test : 1h 试验后的放置条件: 1 小时	Contact resistance: 200mΩ max 接触电阻 200mΩ 以下 Insulation resistance: 10MΩ min 绝缘电阻: DC 100V, 大于10MΩ Withstand voltage: No. destruction. 耐电压: 无绝缘破坏. No. 2.2.1 to 2.2.2 shall be satisfied 满足2.2.1到2.2.2项.

2.3.5	Endurance (switching) action 耐久特性 (开关寿命)	<p>1) Operation speed : 1 times / s 动作速度: 1 次/ 秒</p> <p>2) Push force : Maximum value of operation force 按力: 动作力规格值的上限</p> <p>3) Operation number: 100,000 times 动作次数:100,000次</p> <p style="text-align: center;">安装示意图</p>  <p style="text-align: right;">测试头 开关</p>	<p>Contact resistance 200mΩ max 接触电阻 200mΩ 以下</p> <p>Bouncing: 10 ms max 触点抖动: 10毫秒以下</p> <p>Insulation resistance: 10MΩ min 绝缘电阻: DC 100V, 大于10MΩ</p> <p>Withstand voltage: No. destruction. 耐电压: 无绝缘破坏.</p> <p>Variation rate of operation force shall be within ±30% to the value before testing 动作力的变化范围在初始值的±30%以内</p> <p>No. 2.2.2 shall be satisfied 满足2.2.2项.</p>
2.3.6	Withstand H <sub>2</sub> S 耐H <sub>2</sub> S	<p>1) Density : 3±1ppm 浓度 :3±1ppm</p> <p>2) Temperature : 40±2°C 温度 : 40±2°C</p> <p>3) Relative humidity : 90~95% 相对湿度: 90~95%</p> <p>4) Duration of test : 12h 持续时间: 12小时</p> <p>5) Standard conditions after test : 1h 试验后的放置条件:1小时</p>	<p>Contact resistance: 200mΩ max 接触电阻 200mΩ 以下</p> <p>Insulation resistance: 10MΩ min 绝缘电阻: DC 100V, 大于10MΩ</p> <p>Withstand voltage: No. destruction. 耐电压: 无绝缘破坏.</p> <p>No. 2.2.1 to 2.2.2 shall be satisfied 满足2.2.1到2.2.2项.</p>
2.3.7	Salt mist test 盐雾实验	<p>At 5% nacl liquor for 24 hours hours depend on 35°C, after washing, keep in normal condition. 5%的nacl溶液, PH值: 6.5~7.2, 在35°C的条件下喷雾。铜材24小时, 用水清洗干净后并在室温下晾干</p>	<p>No remarkable corrosion shall be recognized in metal part. 在金属件上没有腐蚀斑点。</p>
2.3.8	Shock test 耐冲击性	<p>Measure after test at a condition below 在下列条件下进行测试后的量度</p> <p>Peak acceleration: 500m/S<sup>2</sup> 冲击加速度:500m/S<sup>2</sup></p> <p>Pulse duration 11ms 脉冲持续时间11ms</p> <p>Test time-6direction ,each 3 times total 18 times 测试次数-6个方向, 各3次共计18次。</p> 	<p>Contact resistance: 200mΩ max 接触电阻 200mΩ 以下</p> <p>Insulation resistance: 10MΩ min 绝缘电阻: DC 100V, 大于10MΩ</p> <p>Withstand voltage: No. destruction. 耐电压: 无绝缘破坏.</p> <p>No. 2.2.1 to 2.2.2 shall be satisfied 满足2.2.1到2.2.2项.</p>

### 3. Precaution

#### 注意事项

#### 3.1 Soldering condition

##### 浸焊条件

ITEM 项目	CONDITION 条件
Preheat temperature 预热温度	110°C max (Embilomental temperature of soldering surface of P. C. B) 110°C以下(印刷基板焊锡面周围的温度)
Preheat time 预热时间	60 sec, max 60 秒以内
Area of flux 助焊剂的面积	1/2 max of P. C. B. thickness 印刷基板厚度的1/2以内
Temperature of solder 焊锡温度	Peak temperature of reflux welding: 250 ± 5°Max 回流焊的峰值温度: 250±5°C以下
Peak time for reflux welding 回流焊的峰值时间	Within 10 sec 10秒以内
Soldering number 浸焊次数	Within 2 times (But should bring down heat of the first soldering) 2次以内(但应把第一次焊锡的温度降下来)
Printed wiring board 印刷基板	Single sided copper-clad laminates 单面铜箔

- 1) After switches were soldered, please be careful not to clean switches with solvent  
开关浸焊后,注意不要用溶剂清洗.
- 2) In the case of using soldering iron, soldering conditions shall be 350°C max and 3 sec. max  
在使用烙铁的情况下,焊锡温度应在350°C以下、3秒以内.
- 3) Right after switches were soldered; please be careful not to load on the knobs of switches.  
浸焊后,注意不要在顶部施加负荷.

#### 3.2 Design instructions(设计中应注意的事项)

- 1) Follow recommended P. C. B. piercing plan in outside drawing page.  
印刷基板的安装孔尺寸参见产品图.

#### 3.3 Note(注意点)

- 1) Please be cautious not to give excessive static load or shock to switches.  
注意不要施加超负荷的压力或晃动开关.
- 2) Please be careful not to pile up P. C. B. after switches were soldered.  
开关焊接以后,印刷基板注意不要叠放.
- 3) Preservation under high temperature and high humidity or corrosive gas should be avoided especially. When you need to preserve for a long period, do not open the carton.  
The stock time is not recommended to exceed 6 months, as the shelf life of the general plating parts is 6 months.  
保管时尤其应注意避开高温高湿和有腐蚀性气体的环境.如需长时间保存,请不要打开包装箱.  
库存时间建议不要超过6个月,因一般电镀件保质期时间为6个月.

备注: