



东莞市颖鑫电子科技有限公司

规格承认书 APPROVALSHEET

客 户:

CUSTNOME. _____

品 名:

DESC. _____

轻触开关

型 号:

PARTNO. _____

1.6*2.6带点

客户型号:

CUST. NO _____

WRITTEN

制定: _____

APPROVAL审核: _____

承认单位 DEPT	采购部 PURCHING	品管部 QC	研发工程部 R&Q	零件承认单 APPROVALSLGNET
审核 CHCK				
确认 APPOVAL				

审核结果:

合格

不合格

INSPEC. RESULT

ACCEPT

REJECT

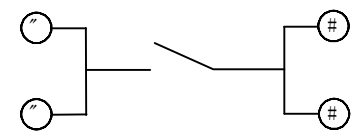
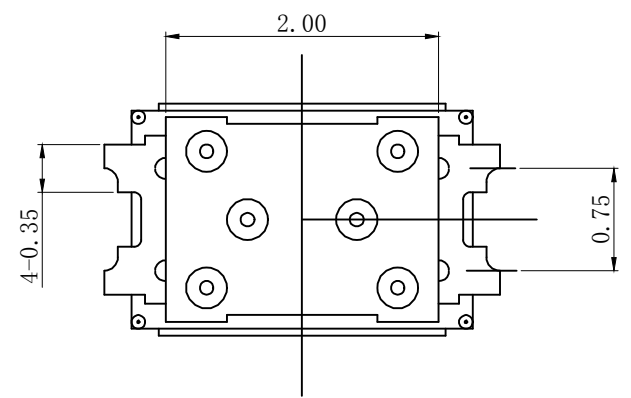
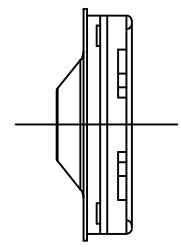
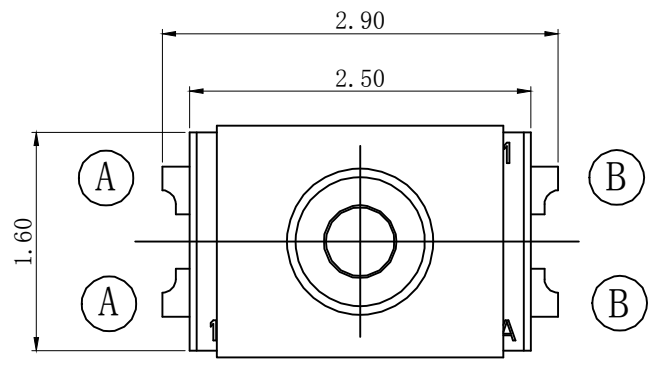
说明

EXPOS: _____

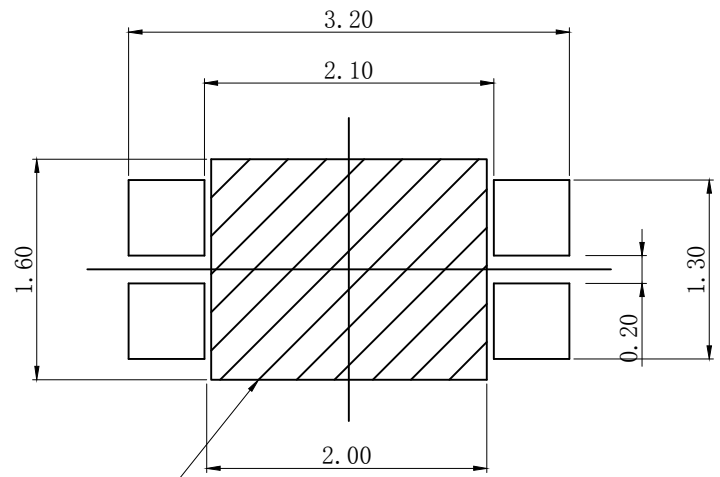
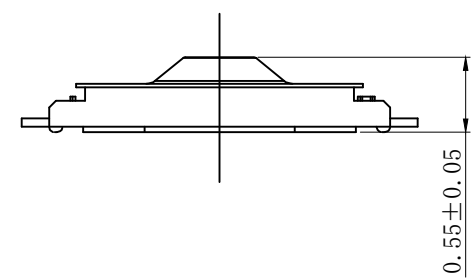
联系人: _____

日期: 2019-03-22

Version	ECM	Amendments	Modifier	Date Modified
A/0				



Circuit diagram



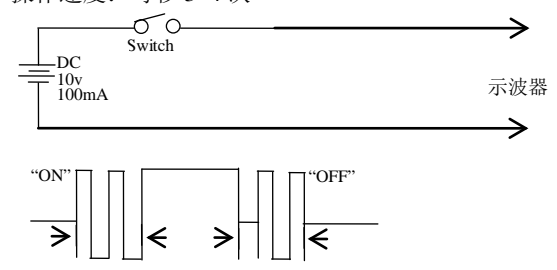
No soldering, No silk

Pad Distribution Map of PCB Plate
Solder thickness : 100 μm

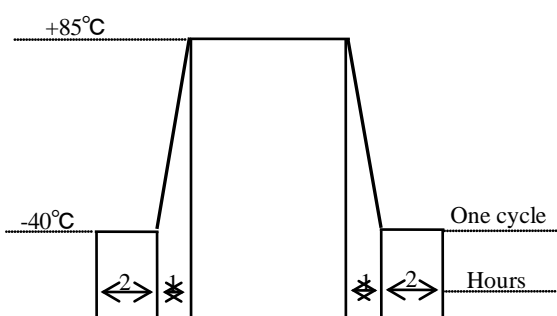
Remarks:

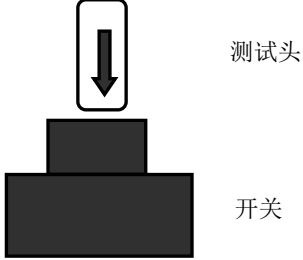
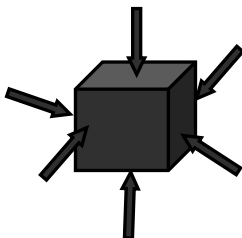
1. Rated current、Voltage: DC 12V 50mA
2. Contact resistance: $\leq 100m\Omega$
3. Insulation resistance: $\geq 100M\Omega$
4. The intensity of operations:
120±30gf 160±50gf 240±50gf
5. Life requirements: 50000 times
6. Withstand voltage: AC250V 1 minute
7. All materials comply with RoHS standards

					General Tolerance	DRAWN				Product Name	Tact switch	
					$X \leq 1$	±0.05	AFFIRM				Model Number	TS16AF55A24B301
5	Button	Polyimide	1	Yellow	$1 \leq X \leq 5$	±0.10	AUDITING				DATE	2019-03-22
4	Paster	Polyimide	1	Transparent	$5 \leq X \leq 10$	±0.15						
3	Shrapnel	SUS	2	Ag Plating	$X > 10$	±0.25	SHEET	1:1	UNIT	mm		
2	Housing	PPA	1	Black	ANGLE	±3°						
1	Terminal	Phosphor copper	2	Ag Plating	Dongguan Yingxin Electronic Technology Co., LTD							
NO.	PART NAME	MATERIAL	QTY	FINISHING								

1.General specification 基本事项			
1.1 Switch action 开关种类: Slide Switch 轻触开关			
1.2 Switch rating 最大额定值: DC 12V, 50mA			
1.3 Operation temperature range 使用温度试验范围: -30°C~+85°C			
1.4 Preservative temperature range 保存温度范围: -40°C~+85°C			
1.5 Appearance and dimensions: See outside drawing page 外形尺寸: 见外形尺寸图			
1.6 Standard condition: Unless otherwise specified, the test and measurements shall be carried out as follows: 试验、测定状态 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 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)			
2.Performance 性能			
2.1 Electrical characteristics 电气性能			
	Item 项目	Test condition 测试条件	Performance 规格
2.1.1	Contact Resistance 接触电阻	Push force: (Operation force)x2 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,20V,5~50mA)	100mΩ Max 100 毫欧以下
2.1.2	Insulation Resistance 绝缘电阻	DC 250V(Between terminals) frame for 1 minute 不相接的两端子间、端子与塑胶间施加 DC250V 电压, 持续 1 分钟测量	100MΩ Min 100 兆欧以上
2.1.3	Withstand Voltage 耐电压	AC 250V(Between terminals) frame for 1 minute 不相接的两端子间、端子与塑胶间施加 AC250V 电压, 持续 1 分钟测量	No insulation destruction 无绝缘破坏
2.1.4	Bouncing 触点抖动	Operation speed:3~4times/s 操作速度: 每秒 3~4 次 	ON: 5ms max 以下 OFF: 5ms max 以下

2.2 Mechanical Characteristics 机械性能			
Item 项目		Test condition 测试条件	Performance 规格
2.2.1	Operations Force 动作力	Push by recommended operating condition 测量时，轻触开关动作方向均匀施加静负荷。	160±50gf
2.2.2	Travel to closure 运作行程	Push by recommended operating condition F=(Operations Force)x2 在开关的顶鞍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。	0.25±0.1mm
2.2.3	Kond strength 手柄强度	30N (3Kgf) for 1 minute 在开关驱动器件顶端中央，在垂直方向加 30N (3Kgf)力， 作用 60 秒	No damage(Electrical and mechanical) 无异常（电气、机械性能）
2.2.4	Vibration test 耐振性	1)Amplitude 全振幅：1.5mm 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。
2.2.5	Soldering heat test 耐焊接热	Soldering area: t/2 of P.W.B thickness (P.C.B: T=1.6mm) 焊接面积：印刷基板的 1/2 厚度处 Soldering temperature: 260±5°C 焊接温度：260±5°C Soldering time: 3±0.5sec 焊接时间：3±0.5 秒	No damage(Electrical and mechanical) 无异常（电气、机械性能）
2.2.6	Solderbility 可焊性	After sprated flux 涂上助焊剂后 Temperature: 245±5°C 温度：245±5°C Soldering time: 3±0.5sec 焊接时间：3±0.5 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

2.3 Climatic Characteristics 机械性能		
Item 项目	Test condition 测试条件	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	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。
2.3.2 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	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。
2.3.3 Temperature cyclig test 温度并变试验	According to following figure, after 5cycles, test after Keeping in normal condition for 30min. 如图环境所示, 循环 5 次后, 放置在正常环境中, 1 小时 后进行测量。 	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。
2.3.4 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	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。

Item 项目	Test condition 测试条件	Performance 规格
2.3.5 Endurance (switching) action 耐久特性（开关寿命）	1) Operation speed: 20~30times/min 动作速度: 20~30 次/分钟 3) Push force: Maximum vale of operation force 按力: 动作力规格值的上限 3) Operation number: 50, 000 times 动作次数: 50, 000 次 安装示意图 	Contact resistance: 200mΩ max 接触电阻: 200mΩ 以下 Bouncing: 10 ms max 触点抖动: 10 毫秒以下 Insulation resistance: 100MΩ min 绝缘电阻: DC 250V, 大于 100MΩ Withstand voltage: No.destruction 耐电压: 无绝缘破坏 Variations rate of operation force shall be within ±30% to the value be fore testing 动作力的变化范围在初始值的±30%以内 2.2.2 shall be satisfied 满足 2.2.2 项
2.3.6 Withstand K ₂ S 耐 K ₂ S	1) Density: 3±1ppm 浓度: 3±1ppm 2) Temperature: 40±2°C 温度: 40±2°C 3) Relative humidity: 90~95% 相对湿度: 90~95% 4) Duration of test: 12h 持续时间: 12 小时 5) Standard conditions after test: 1h 试验后的放置条件: 1 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。
2.3.7 Salt mist 盐雾试验	At 5% Nacl liquor for 8 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 8 小时, 用清水洗干净后并在室温下晾干。	No remarkable corrosion shall be recognized in metal part. 在金属件上没有腐蚀斑点。
2.3.8 Shock 耐冲击性	Peak acceleration: 500m/S ² Duration of test: 11ms 冲击加速度: 500m/S ² 持续时间: 11ms Test time-6direction, each 3 times total 18 times 测试次数-6 个方向, 各 3 次共计 18 次。 	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。

3.Precaution 注意事项	
3.1 Soldering condition 浸焊条件	
Item 项目	Condition 测试条件
Preheat temperature 预热温度	110°C max (Embilomental temperature of soldering surface of P.C.B) 110°C以下 (印刷基板焊锡周围的温度)
Preheat time 预热时间	60 sec, max 60 秒以内
Area of flux 助焊剂面积	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	260±5°C max 260±5°C 以下
Times of immersion 浸焊时间	Within 5 sec 5 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
<p>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。</p> <p>2) In the case of using soldering iron, soldering conditions shall be 280°C max and 3 sec max. 在使用烙铁的情况下, 焊锡温度应在 280°C以下、3 秒以内。</p> <p>3) Right after switches were soldered; please be careful not to load on the knobs of switches. 浸焊后, 注意不要在手柄顶部施加负荷。</p> <p>3.2 Design instructions (设计中应注意事项)</p> <p>1) Follow recommended P.C.B piercing plan in the outside drawing page. 印刷基板的安装孔尺寸参见产品图。</p> <p>3.3 Note (注意点)</p> <p>1) Please be cautious not to give excessive static load or shock to switches. 注意不要施加超过负荷的压力或晃动开关。</p> <p>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。</p> <p>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. 保管时尤其应注意避开高湿高温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。</p>	