

产品规格承认书

PRODUCT SPECIFICATION RECOGNITION

客 户 CUSTOMER	
客户物料编号 CUSTOMER PART NO	
本厂料号 PART NUMBER	605C
物料名称 PART NAME	轻触开关
物料型号 MATERIAL MODELS	TS-1109 系列
日 期 DATE	2023.10.09

供方确认 Supplier confirmation:

制 作 AUTHOR	审 核 AUDIT	批 准 APPROVAL
郑衍静	梁金带	黄朝阳

需方确认 Confirmed by the demander:

- 1.Customers need to confirm whether the product meets your design requirements before use. Our company only guarantees that the product meets the requirements of this acknowledgement
客户使用前需确认本产品是否符合您的设计要求，我司仅保证本产品符合此份承认书的要求；
- 2.The data modification in the acknowledgement letter must be negotiated and approved by both parties; otherwise, it shall be deemed invalid 承认书内的数据修改必须经过双方协商并认可，否则
视作无效；
- 3.The customer shall sign this acknowledgement before placing the order, If the customer does not sign the acknowledgement, this acknowledgement shall prevail 客户下单前需回签本承认书，
如若未回签下单，视作以本份承认书为准；
- 4.This product is designed for use only in consumer electronic products. If it is used in other non-consumer electronic occasions, please inform us in advance 本产品设计目的只适用于消费
电子产品应用，如有使用在其他非消费电子场合，请提前告知我司。

[illegible]

3. SPECIFICATIONS 规格参数

3.1、适用范围

本此规范含盖单推柄和无推柄的轻触开关要求。

This specification covers the requirements for single key switches which have no key top, (TACT SWITCHES:MECHANICAL CONTACT).

3.2、使用温度范围

本使用温度范围 Operating Temperature Range

-30 to +70 °C 正常湿度, 标准压力 (normal humidity,normal press.)

3.3、保存温度范围

保存温度范围 Storage Temperature Range

-40 to +85 °C 正常湿度, 标准压力 (normal humidity,normal press.)

3.4、测试条件

温测试条件 Test Conditions

测试和计量按下列标准条件除非特殊说明:

Tests and measurements shall be made in the following standard conditions unless otherwise specified:

标准温度 Normal temperature (temperature 5 to 35 °C)

正常湿气 Normal humidity (relative humidity 45 to 85%)

标准压力 Normal pressure (pressure 860 to 1060 mbars)

3.5、动作类型 TYPE OF ACTUATION

轻触返回 Tactile feedback

3.6、接触形式 CONTACT ARRANGEMENT

1 接点 1 回路 1 poles 1 throws

详细接线图在外形图中 (Details of contact arrangement are given in the assembly drawings.)

3.7、额定规格 MAXIMUM RATINGS

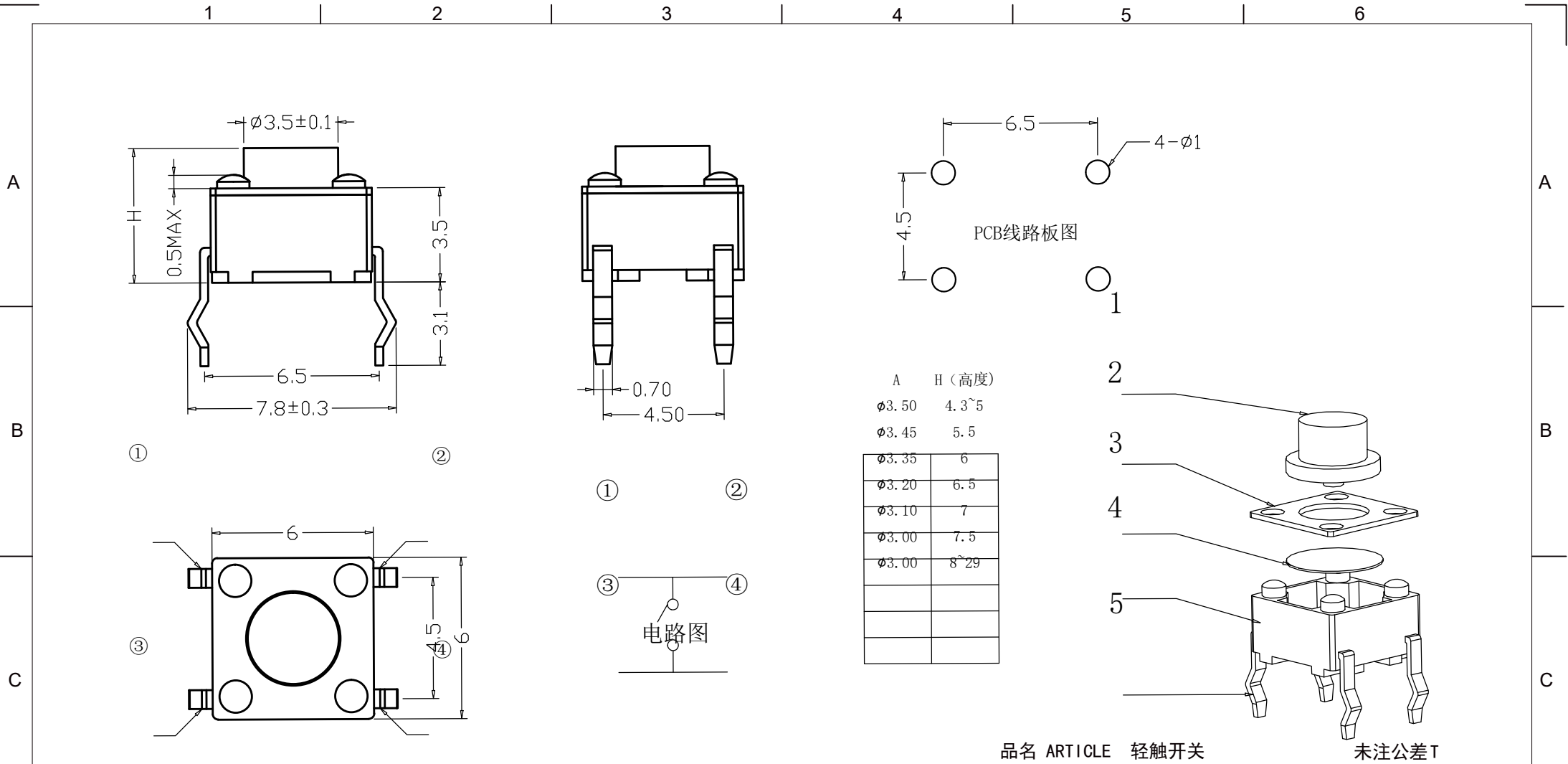
DC 12 V 50 mA

3.8、CONFIGURATION & DIMENSIONS 结构和外形尺寸(Unit: mm)

外观: 应无明显收缩、飞边、划伤, 镀层均匀, 无脱落等现象 Appearance: It should no obvious shrinkin 、upset metal、Scrape、 plating path well-distributed and no coming off.

尺寸: (附外形图)

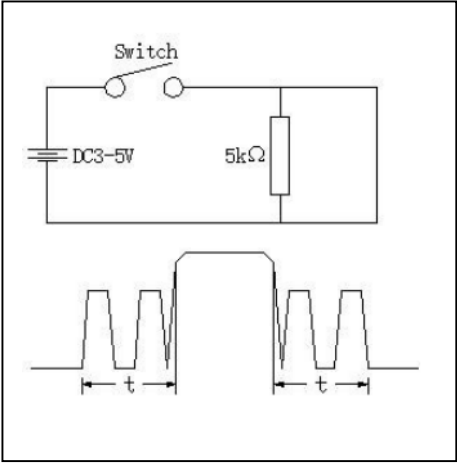
Size:Making (drawing attached)



							LERANCE	
0							0~5mm	±0.30
							5.01~10mm	±0.50
							10.01~50mm	±0.80
							±5°	
							角度	视图方法
							制图DRAW	审核CHECK
							钟欣	张耀
							批准APPRO.	黄朝阳
							PROJECTION	
更版标记	承认	日期	5	接线片	铜	1	复银	
REVISION NOTE	APPRO.	DATE	4	基座	PPA	1		
			3	弹片	不锈钢(30万次)	1		
			2	接板	PPA	1		
			NO.	名称 PARTNAME	材质MATERIAL	数量QTY	备注REMARK	

4. 性能 General specification

4.1、电气性能

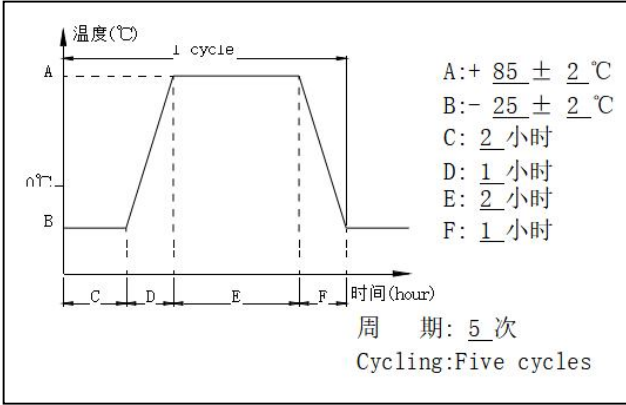
项目 Item		测试条件 Test Condition	要求 Requirements
4.1.1	接触电阻 Contact Resistance	用两倍的动作力作静负载施加于按钮的中心,并用 <u>1</u> 千赫 (kHz) 小电流接触电阻仪测量. Applying static load twice the actuating force to the center of the stem, measurements shall be made with a <u>1</u> kHz small-current contact resistance meter.	小于 <u>100 mΩ</u> ≤ <u>100 mΩ</u>
4.1.2	绝缘电阻 Insulation Resistance	在端子与端子之间,端子与外壳之间施加 DC <u>100</u> V/一分钟 Measurements shall be made following application of DC <u>100</u> V potential between terminals and between individual terminals and frame for one minute.	大于 <u>100 MΩ</u> ≥ <u>100 MΩ</u>
4.1.3	耐电压 Dielectric withstanding voltage	在端子与端子之间,端子与外壳之间施加 AC <u>250</u> V (50HZ-60HZ) AC <u>250</u> V (50Hz or 60Hz) shall be applied between terminals and between individual terminals and frame for one minute.	无击穿、闪烁现象 There shall be no breakdown
4.1.4	抖动 Bounce	在正常使用中(以每秒 <u>3</u> - <u>4</u> 次周期)轻轻地在手柄中心加力,在通与断瞬间测试抖动 Lightly striking the center of the stem at a rate encountered in normal use (<u>3</u> to <u>4</u> operations per sec), Bounce shall be tested when "ON" and "OFF" <div></div>	<u>10</u> mS 以下 示波器 Oscillograph t为触点抖动时间

4.2、机械性能 Mechanical properties

项目 Item		测试条件 Test Condition	要求 Requirements
4.2.1	动作力 Actuating Force	<p>开关的动作方向为垂直放置, 开关向推柄中心逐渐地增加负荷直到推柄停止时所测量的最大负荷</p> <p>Place the switch such that the direction of switch operation is vertical and then gradually increase the load applied to the center of the stem, the maximum load required for the stem to come to a stop shall be measured</p>	250 ± 50 gf
4.2.2	行程 Travel	<p>开关的动作方向为垂直放置开关, 并以双倍动作力的静负荷作用推柄中心, 测量推柄从开始到停止的行程距离</p> <p>Place the switch such that the direction of switch operation is vertical and then apply a static load twice the actuating force to the center of the stem, the travel distance for the stem to come to a stop shall be measured</p>	0.25 ± 0.10 mm
4.2.3	返回力 Return Force	<p>开关的动作方向为垂直放置开关, 在已有行程的推柄中心向上减小压力, 推柄回到自由位置时所测量到的力</p> <p>The sample switch is installed such that the direction of switch operation is vertical and, upon depression of the stem in its center the whole travel distance, the force of the stem to return to its free position shall be measured</p>	50 gf min
4.2.4	静止强度 Static Strength	<p>开关的动作方向为垂直放置开关, 在推柄动作方向施加 300gf 的静负荷, 持续 60 秒</p> <p>Placing the switch such that the direction of switch operation is vertical, a static load of 3 kgf shall be applied in the direction of stem operation for a period of 60 seconds</p>	<p>无机械的和电气的损伤迹象 There shall be no sign of damage mechanically and electrically</p>

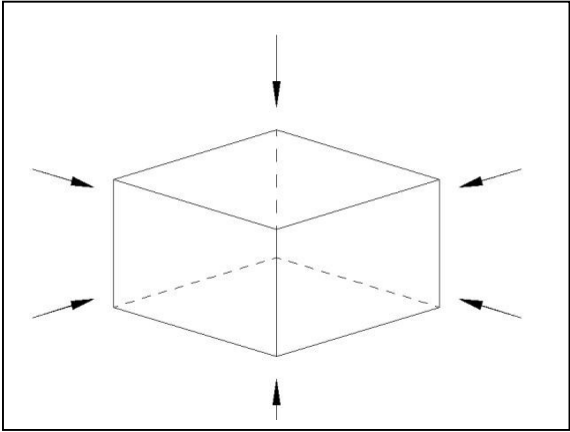
4.3、使用耐久性能 Service Durability

项目 Item		测试条件 Test Condition	要求 Requirements
4.3.1	耐 低 温 Low Temperature Resistance	<p>样品按下列条件进行耐低温试验, 试验后在正常温度和湿度条件下放置 <u>1</u> 小时后测定</p> <p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for one hour before measurements are made</p> <p>(1)温 度 Temperature: <u>-20</u> ± <u>2</u> °C</p> <p>(2)时 间 Time: <u>96</u> 小时 hours</p> <p>擦除水珠 Water drops shall be removed.</p>	<p>接触电阻 Contact resistance: <u>200 mΩ</u> Max.</p> <p>绝缘电阻 Insulation resistance: <u>100 MΩ</u> Min</p> <p>项目 Item 4.1.3、4.1.4 项目 Item 4.2.1~ 4.2.3</p>
4.3.2	耐 高 温 Heat Resistance	<p>样品按下列条件进行耐热试验, 试验后在正常温度和湿度条件下放置 <u>1</u> 小时后测定</p> <p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for one hour before measurements are made</p> <p>(1)温 度 Temperature: <u>80</u> ± <u>2</u> °C</p> <p>(2)时 间 Time: <u>96</u> 小时 hours</p>	<p>接触电阻 Contact resistance: <u>200 mΩ</u> Max.</p> <p>绝缘电阻 Insulation resistance: <u>100 MΩ</u> Min</p> <p>项目 Item 4.1.3、4.1.4 项目 Item 4.2.1~4.2.3</p>
4.3.3	耐 潮 湿 Moisture Resistance	<p>样品按下列条件进行耐潮湿试验, 试验后在正常温度和湿度条件下放置 <u>1</u> 小时后测定</p> <p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for one hour before measurements are made.</p> <p>(1)温 度 Temperature: <u>40</u> ± <u>2</u> °C</p> <p>(2)相对湿度 Relative humidity: <u>90</u> to <u>95</u>%</p> <p>(3)时 间 Time: <u>96</u> 小时 hours</p> <p>擦除水珠 Water drops shall be removed.</p>	<p>接触电阻 Contact resistance: <u>200 mΩ</u> Max.</p> <p>绝缘电阻 Insulation resistance: <u>100 MΩ</u> Min</p> <p>项目 Item 4.1.3、4.1.4 项目 Item 4.2.1~ 4.2.3</p>

项目 Item		测试条件 Test Condition	要求 Requirements
4.3.4	动作寿命 Operating Life	<p>按下列条件进行寿命试验：</p> <p>Measurements shall be made following the test set forth below:</p> <p>(1) 无负载条件 No load condition</p> <p>(2) 动作频率：30 ~ 50 次/分钟</p> <p>Rate of operation: 30 to 50 operations per minute</p> <p>(3) 动作次数：10 万次</p> <p>Cycles of operation: 100,000 cycles</p>	<p>接触电阻</p> <p>Contact resistance:</p> <p>200 mΩ Max.</p> <p>绝缘电阻 Insulation resistance:</p> <p>100 MΩ Min.</p> <p>动作力</p> <p>Actuating force:</p> <p>± 30% 初始动作力</p> <p>+ 30% or- 30% of initial force</p> <p>项目 Item 4.2.2</p>
4.3.5	温度循环 Change of Temperature	<p>样品按下列条件进行高低温循环试验, 试验后在正常温度和湿度条件下放置 1 小时后测定</p> <p>Following ten cycles of high temperature test. The Sample shall be Placed in Normal temperature and humidity Conditions for one hour before measurements are made. During this test, water drops shall be removed</p> <div></div>	<p>接触电阻</p> <p>Contact resistance:</p> <p>200 mΩ Max.</p> <p>绝缘电阻 Insulation resistance:</p> <p>100 MΩ Min</p> <p>项目 Item</p> <p>4.1.3、4.1.4</p> <p>项目 Item</p> <p>4.2.1~4.2.3</p>

4.3.6	盐雾测试 Salt Spray Test	<p>样品按下列条件进行盐雾试验</p> <p>The salt spray test shall be conducted at the following conditions:</p> <p>(1) 浓 度 Density: 溶液 (<u>5 ± 1</u>) % NaCl (质量百分比)</p> <p>(2) 温 度 Temperature: <u>35 ± 2</u> °C</p> <p>(3) 时 间 Time: 铁盖 <u>4</u> 小时hours</p> <p>注: 此项针对金属外壳不包含端子。</p> <p>This item does not include terminals for metal enclosures.</p>	金属件无发黄、生锈 No yellowing and rusting of metal parts
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项目 Item		测试条件 Test Condition	要求 Requirements
4.3.7	耐 振 动 Vibration Resistance	<p>按下列条件进行抗振动试验</p> <p>Measurements shall be made following the test set forth below:</p> <p>(1) 频率范围 Range of oscillation: <u>10</u> to <u>55</u> Hz</p> <p>(2) 振幅 Amplitude: 峰-峰 <u>1.5</u> mm(pk-to-pk: <u>1.5</u> mm)</p> <p>(3) 扫描周期 Cycle of sweep: <u>10</u> - <u>55</u> - <u>10</u> Hz 约一分钟内(in one minute, approx.)</p> <p>(4) 扫描方式 Mode of sweep: 对数扫描式恒定扫描 (Logarithmically sweep or uniform sweep.)</p> <p>(5) 振动方向 Direction of oscillation: <u>3</u> 个相互 垂直方向, 包括推柄行程方向 (Three mutually perpendicular directions, including the direction of stem travel.)</p> <p>(6) 每方向 <u>2</u> 小时. 共 <u>6</u> 小时 (<u>2</u> hours each, for a total of <u>6</u> hours.)</p>	项目 Item 4.1 项目 Item 4.2.1、4.2.2

4.3.8	抗冲击 Impact Shock Resistance	<p>按下列条件进行冲击试验</p> <p>Measurements shall be made following the test set forth below:</p> <p>(1) 加速度 Acceleration: <u>80</u> g</p> <p>(2) 试验次数 Cycles of test: 每个方向 <u>3</u> 次, <u>6</u> 个方向共 <u>18</u> 次 (<u>3</u> cycles each in <u>6</u> directions, for a total of <u>18</u> cycles)</p> 	<p>项目 Item 4.1</p> <p>项目 Item 4.2.1、4.2.2</p>
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4.4、使用焊接条件 Welding conditions

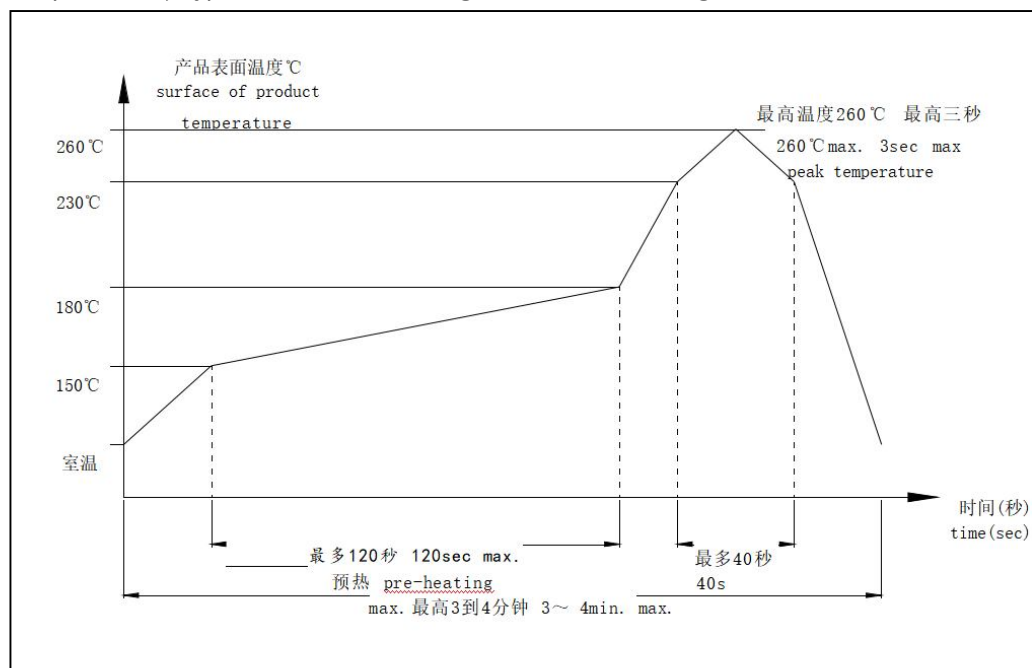
项目 Item	推荐条件 Recommended conditions
4.4.1	<p>手工焊接 Hand soldering</p> <p>请按以下条件进行焊接:</p> <p>(1) 焊锡温度: <u>350±3</u> °C</p> <p>(2) 连续焊接时间: <u>3±1</u> S</p> <p>Please practice according to bellow conditions:</p> <p>(1) Soldering temperature : <u>350±3</u> °C</p> <p>(2) (2)Continuous soldering time: <u>3±1</u> S</p> <p>注: 此项请不要用烙铁触碰到产品塑胶本体。</p> <p>Please do not touch the plastic body of the product with a soldering iron.</p>

4.4.2

自动焊接
Automatic
flow
soldering

本产品，请按以下条件进行焊接：

This product ,type solder according to the following conditions:



注意：以上提及的条件是零部件上 PWB 表面的温度,由于 PWB 的材料、尺寸、厚度等不同,PWB 从开关表面获得的温度也会有很大不同,因此,千万小心不要让开关表面温度超过 260℃.

Caution: the condition mentioned above is a temperature on the PWB surface on which parts are mounted. There are cases where PWB temperature greatly differs from switch's surface temperature depending on PWB material, size, thickness, etc. The switch's surface temperature shall not allowed to exceed 260℃

焊接次数：不超过1次。

Welding times:Not more than once.

注：此项根据图纸塑胶而定。This item depends on the plastic in the drawing.

5. PRODUCTS STORAGE AND CAUTION 存储及使用注意事项:

5.1. To maintain the weldability of the terminal electrodes, follow the following guidelines 为了保持终端电极的可焊性, 请遵循如下原则:

Storage temperature and humidity conditions: 5~ 26°C and 20%-70% RH; Recommended products should be used within 6 months form the time of delivery; The packaging material should be kept where no chlorine or sulfur exists in the air ; Do not keep products in unsuitable storage conditions, such as areas susceptible to high temperatures, high humidity, dust or corrosion; Do not touch the electrode directly with your hand, as grease and sweat will inhibit welding. 存储温度、湿度条件: 5~ 26°C, 20% ~ 70% RH; 推荐产品自交货之日起 6 个月内使用; 包装材料应保存在空气中无氯、无硫的地方; 不要将产品保存在不合适的存储条件下, 例如易受高温、高湿、灰尘或腐蚀的地方; 不要用手直接触摸电极, 因为油脂和汗液会抑制焊接。

5.2. Please note the following when using the product 产品使用时请注意如下事项:

This products itself does not have any protective function in abnormal condition, such as overload, short-circuit, open-circuit conditions, etc. Therefore it shall be confirmed that there is no risk of smoke, fire, dielectric withstand voltage, insulation resistance, etc. or use in abnormal conditions protective devices protection circuit in the end product; Hi-Pot test with higher voltage than spec value will damage insulating material and shorten its life; Refrain from rinsing coils; Circuit design, component placement, PCB size and thickness, cooling system, etc., will affect the temperature of the product. Please confirm the temperature of the product when using. 本产品本身在过载、短路、开路等异常情况下不具有任何保护功能。因此, 应确认最终产品中不存在冒烟、火灾、耐介电电压、绝缘电阻等危险, 或在异常情况下使用保护装置保护电路; 电压高于规格值的 Hi-Pot 试验会损坏绝缘材料, 缩短其寿命; 避免冲洗产品; 电路设计、元件放置、PCB 尺寸和厚度、冷却系统等, 都会影响产品的温度, 最后使用时请确认产品温度。

5.3. Our specification limits the quality of the component as a single unit. Please ensure the component is thoroughly evaluated in your application circuit. 本承认书只保证我司产品作为一个单体时的质量情况, 当我司产品被安装到贵司产品上时, 请贵司对使用在贵司电路上的产品情况进行了有效评估和确认。

5.4. If your use of our products has exceeded the product functions defined in this acknowledgement, we will not guarantee the resulting failure. 如果贵司对我司产品的使用已超过了本承认书所界定的产品功能和应用条件, 那么对于由此引发的失效, 我司将不予保证。

5.5. If you have any special requirements, please contact our technical staff in advance. 如有特殊规格要求, 请事先联络我司技术部人员。

产品规格书

PRODUCT SPECIFICATIONS

产品名称Product Name		轻触开关	
型 号Model No		TS-1109	
料 号Part No		6C3502021系列	
1. 一般特性(General Characteristics):			
1.1 适用范围 (Application):		该规格书指轻触开关的一般使用范围 (This specification is applied to the Tact switch for general applications.)	
1.2 使用温度范围 (Operating Temperature Range):		-20℃~+80℃	
1.3 相对湿度 (Operating Relative Humidity)		≤ 96%RH, +40℃ (≤96%at+40℃)	
1.4 实验条件 (Test Conditions):		若没有特殊说明, 则试验在大气条件如下 (Unless otherwise specified, the atmospheric conditions for making measurements and tests are as follows;) 环境温度 (Ambient Temperature): 5-35℃ 大气压力 (Air pressure): 86-106Kpa (860-1060mbar) 相对湿度 (Relative Humidity): 45-85%RH	
2. 外观, 结构及尺寸 (Appearance, Structure & Dimension):			
2.1 外观 (Appearance):		产品外观良好, 无锈蚀, 裂纹和镀层缺陷. (The switch shall have good finishing, and no rust, crack or plating defects.)	
2.2 结构及尺寸 (Structure & Dimensions)		参见产品图纸. (Refer to individual product drawing.)	
2.3 标识 (Markings):		参见产品图纸. (Refer to individual product drawing.)	
3. 额定值 (Rating): DC 12V 50mA			
4. 电气性能 (Electrical Characteristics):			
	项目 (Item)	标准 (Criteria)	实验方法 (Test Method)
4.1	接触电阻 (Contact Resistance)	30毫欧以下 30m ^Ω Max	以1A, 5V DC或在1KHz±200Hz (20mV Max, 50mA Max) 采用电压降法测量. (Shall be measured at 1KHz±200Hz (20mV Max, 50mA Max) or 1A, 5V DC by voltage drop method.)
4.2	绝缘电阻 (Insulation Resistance)	100兆欧以上 100M ^Ω Min	在相互绝缘的所有端子之间及个接线端子与外露的非载流金属零件之间加载250V直流电, 持续时间60±5秒. (250V DC voltage is applied between each pair of terminals and between the terminal and metal frame for 60±5Sec.)
4.3	抗电强度 (Dielectric Voltage)	无击穿现象发生 (No dielectric breakdown shall occur.)	在相互绝缘的所有接线端子之间加载250V (50-60Hz, 泄漏电流10mA) 交流电, 各接线端子与外壳或非载流金属零件之间加载250V (50-60Hz, 泄漏电流10mA) 交流电, 持续时间60±5秒. 250V (50-60Hz, 10mA) alternate current load is applied between open terminals connected with wires; or 250V (50-60Hz, 10mA) alternate current load is applied between frame & terminal or between metal parts, for 60±5Sec.
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5. 机械性能 (Mechanical Characteristics)

	项目 (Item)	标准 (Criteria)	实验方法 (Test method)
5.1	驱动力 (Drive Force)	_____ $\pm 30\text{gf}$	用测力计在按键与弹片之间测量 Being measure at across spring piece and across keystone forergometer
5.2	回复力 (Releasing Force)	50gf Min	在操作元件末端沿操作方向均匀减少静载荷, 使操作元件从动作位置转换到释放位置. (A static load shall be reduced to the tip of actuator in operating direction to change component from operating position to release position)
5.3	行程 (Travels)	0.25 $\pm$ 0.1mm	从自由位置到动作位置的距离. (The distance from release position to operating position)
5.4	接线端强度 (Terminal strength)	-端子无松动, 损坏及绝缘层的破裂 -电气性能应符合第4部分的要求 (-Shall be free from terminal looseness damage and insulator breakage) (The electrical performance requirements specified in section 4 shall be satisfied)	以300gf作用力沿轴向施加于接线端末端, 作用力方向离开关向外指向, 保持15秒, 每个接线端子测量一次. (A static load of 300gf shall be applied to the tip of terminal in a desired direction for 15Sec. The test shall be done once per terminal)
5.5	可焊性 (Solder Ability)	超过75%的焊锡面积被焊料所覆盖 (More than 75% of immersed part shall be covered with solder)	试件在下述参数条件下进行试验. (Switch shall be checked after fallowing test): (1) 焊料 (Solder): H63A (JIS Z 3282) (2) 焊剂: 焊剂 (JIS K 5902), 质量百分比为25%松香 75%甲醇的 无色透明溶液. Flux: Rosin Flux (JIS K 5902) having a nominal composition of 25% solids by mass of water white rosin in methyl alcohol (JIS K 1501) solution (3) 焊接温度: $230 \pm 5^\circ\text{C}$ 焊接时间: 3 ± 0.5 秒 (Soldering Temperature : $230 \pm 5^\circ\text{C}$ Immersing Time : $3 \pm 0.5\text{Sec}$)

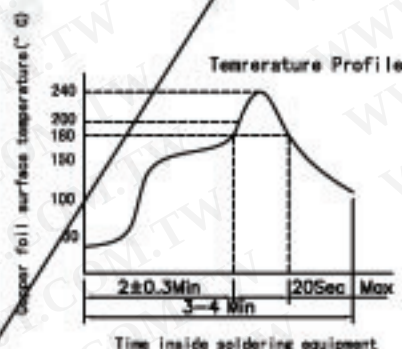
注：本产品不耐高温，不可过回流焊！

一、回流焊方法 Re-flow soldering method:

回流焊接条件: (Reflow soldering conditions)

预热: 被焊接部位进入焊接设备之后的 2 ± 0.3 分钟, 铜片表面的温度可达到 180°C . (Preheat: Temperature on the copper foil surface should reach 180°C , 2 ± 0.3 minutes after the P.W.B entered into the soldering equipment.)

焊接温度: 被焊接部位进入焊接区的20秒内, 铜片表面的温度最高达 240°C . (Soldering heat: Temperature on the copper foil surface should reach the peak temperature of 240°C within 20 seconds after the P.W.B enter into soldering heat zone.)



二、自动焊接方法 Solder bath method

焊接温度: $230 \pm 5^{\circ}\text{C}$ 时间: 5 ± 1.0 秒

Temperature: $230 \pm 5^{\circ}\text{C}$

Sinking time: $5 \pm 1\text{s}$

PCB 厚度: 1.6mm

Thickness of PCB: 1.6mm

Immersion depth: Up to the surface of the board

三、手工焊接方法 Solder iron method

焊接温度: $350 \pm 10^{\circ}\text{C}$ 时间: 3 ± 1.0 秒

Bit temperature: $350 \pm 10^{\circ}\text{C}$

Application time: $3 \pm 1.0\text{s}$

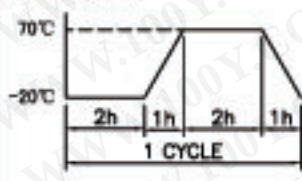
5.6

耐焊接热
(Solder Heat Resistance)

无外观及功能损坏, 电气性能应符合第4部份的要求
(-No abnormalities shall be observed in appearance and operation
-The electrical performance requirements specified in item 4 shall be satisfied)

<p>5.7 振动测试 Vibration test</p>	<p>无外观及功能损坏, 电气性能应符合第4部份的要求和机械性能的5.1, 5.2, 5.3的要求 (No abnormalities shall be observed in appearance and operation. -The electrical performance requirements specified in item 4 shall be satisfied, The mechanical characteristics requirements specified in item 5.1, 5.2, 5.3 shall be satisfied.)</p>	<p>(1) 振幅 (Amplitude): 1.5mm (2) 振动频率 (Sweep rate): 1分钟10-55-10Hz (10-55-10Hz for 1 minute.) (3) 振动方法 (Sweep method): Logarithmic frequency sweep rate. (4) 振动方向 (Vibration direction): X, Y, Z (3 direction) (5) 时间 (Time): 每个方向2个小时 (Each direction 2 hours)</p>
<p>5.8 冲击 Impact Shock</p>	<p>实验后: 接触电阻: 0.5^{Ω} Max. 绝缘电阻: $100M^{\Omega}$ Min. 电气性能应符合第4.3条的要求, 表面无变形且操作无异常. After test, Contact resistance: 0.5^{Ω} Max Insulation resistance: $100M^{\Omega}$ Min The Electrical performance requirements specified in item 4.3 shall be satisfied. Shall be free from mechanical abnormalities.</p>	<p>试件在下述参数条件下进行试验: (1) 安装方法: 常规方法 (2) 加速度: 490m/s (3) 时间: 11ms (4) 实验方向: 图示6方向 (5) 冲击次数: 每个方向3次 (总共18次) Switch shall be measured after following test (1) Mounting Method: Normal (2) Acceleration : 490m/s (50G) (3) Duration: 11ms (4) Test Direction: 6 directions</p>  <p>(5) Number of shocks: 3 times per direction (18 times in total)</p>
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6. 耐候性能(Weather Proof Characteristics):

	项目(Item)	标准(Criteria)	实验方法(Test Method)
6.1	低温 Cold Proof	实验后(After test): -接触电阻(Contact resistance): 200m Ω Max. -绝缘电阻(Insulation resistance): 100M Ω Min -抗电强度应符合第4.3格的要求。 (Electrical performance requirements specified in item 4.3 shall be satisfied) -操作力变化在 $\pm 10\%$ 以内 (Operating force shall be within $\pm 10\%$ of specified value) -开关外观及结构应无损坏。 (The switch shall be free from abnormalities in appearance & construction.)	试件在 $-40\pm 2^{\circ}\text{C}$ 的温控箱内保持96个小时,然后在正常的温度和湿度下恢复1小时,并在此后1小时内对试品进行测量,水滴应消失。 (After testing at $-40\pm 2^{\circ}\text{C}$ for 96 hours, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that. Water drops shall be eliminated.)
6.2	高温 Hot Proof		试件在 $85\pm 2^{\circ}\text{C}$ 的温控箱内保持96个小时,然后在正常的温度和湿度下恢复1小时,并在此后1小时内对试品进行测量。 (After testing at $85\pm 2^{\circ}\text{C}$ for 96 hours, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that.)
6.3	恒定湿热 Moisture Resistance		试件在 $60\pm 2^{\circ}\text{C}$, 90-95%RH的温控箱内保持96个小时,然后在正常的温度和湿度下恢复1小时,并在此后1小时内对试品进行测量,水滴应消失。 (After testing at $60\pm 2^{\circ}\text{C}$, 90-95%RH for 96 hours, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that. Water drops shall be eliminated.)
6.4	温度转换 Temperature Cycling		试件按下述实验条件试验80个循环,然后在正常温度和湿度下恢复1小时,并在此后1小时内对试品进行测量,水滴应消失。 (After 80 cycles of following conditions, the switch shall be allowed to stand normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that. Water drops shall be eliminated.) 

6.5	盐雾实验 Salt Mist	实验后 (After test): -接触电阻 (Contact resistance): $200m\Omega$ Max. -绝缘电阻 (Insulation resistance): $100M\Omega$ Min -抗电强度应符合第4.3格的要求. (Electrical performance requirements specified in item 4.3 shall be satisfied) -操作力变化在 $\pm 10\%$ 以内 (Operating force shall be within $\pm 10\%$ of specified value.) -开关外观及结构应无损坏. (The switch shall be free from abnormalities in appearance & construction.)	5%的NaCl溶液、喷雾铜料、不锈钢24小时, 铁料8小时, 用水清洗并在室温下30分钟. At 5% NaCl liquor for Brass and sus 24 hours/Spec 8 hours, after washing, keep in normal condition for 30 min,
6.6	耐硫化测试 Resistance to sulfuration		After following testing, the switch shall be allowed to stand under Dormal roomtemperature and bumidity conditions for 1 h, and measurement shall be madeafter that. 按下列条件实验后, 在常温常湿环境中放置1小时再测定. Temperature 温度: $40\pm 2^{\circ}C$ Humidity 湿度: $75\pm 5\%RH$ Density 密度: H S gas 10 ± 2 ppm Duration 测试时间: 12 h

7. 寿命试验 (Durability Characteristics)			
	项目 (Item)	标准 (Criteria)	实验方法 (Test Method)
7.1	机械寿命 (Operating life without Load)	实验后 (After test): -接触电阻 (Contact resistance): $200m\Omega$ Max -绝缘电阻 (Insulation resistance): $100M\Omega$ Min -抗电强度应符合第4.3格的要求. (Electrical performance requirements specified in item 4.3 shall be satisfiec -操作力变化在 $\pm 30\%$ 以内. (Operating force shall be within $\pm 30\%$ of specified value.) -开关外观及结构无损坏. (The switch shall be free from abnormalities in appearance & construction.)	在无负荷的条件下, 在寿命试验设备连续转换50,000次. (30-50次/分) 50,000 cycles of operation shall be performed continuously at a rate of 30-50 cycles per minute without load.
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