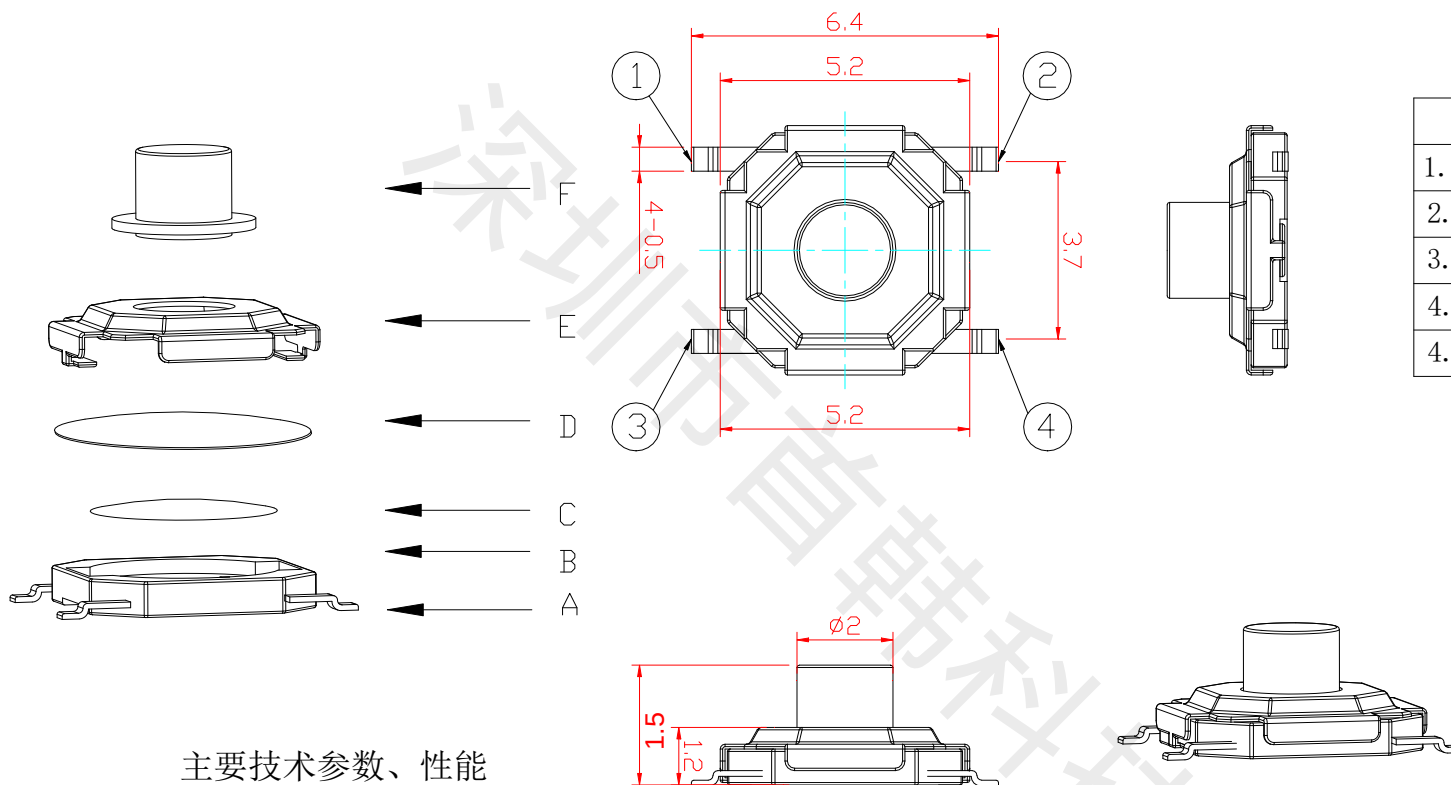
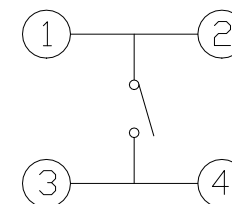
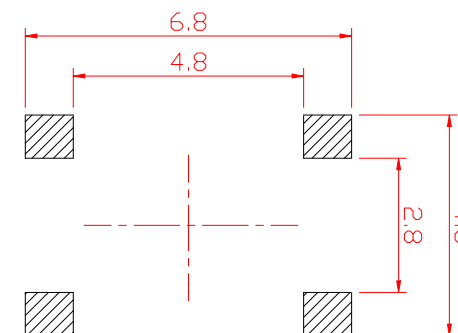




| H   |     |
|-----|-----|
| 1.5 | 1.7 |
| 2.0 | 2.5 |
| 3.0 | 3.5 |
| 4.0 | 4.3 |
| 4.5 | 5.0 |



电路图  
CIRCUIT DIAGRAM



PCB. 焊接图  
PCB. WELDING DRAWING

主要技术参数、性能  
The Main Thchnology Performance

|                                 |              |
|---------------------------------|--------------|
| 额定电流、电压<br>Rate voltage,current | 50mA DC12V   |
| 接触电阻<br>Contact resistance      | ≤100mΩ       |
| 按力<br>Operating force           | 160±50gf     |
| 行程<br>travel                    | 0.25±0.1mm   |
| 绝缘电阻<br>Insulated resistance    | ≥100MΩ       |
| 介电强度<br>Dielectric strength     | ≥250VAC/1min |
| 寿命<br>Endurance                 | ≥100000次     |

|            |                   |                |           |                        |
|------------|-------------------|----------------|-----------|------------------------|
| F          | 按钮                | 黄铜             | 1         | 酸洗                     |
| E          | 盖板                | 不锈钢            | 1         | 镀银                     |
| D          | 防尘膜               | 聚酰亚胺           | 1         | 橙黄色                    |
| C          | 弹片                | 不锈钢            | 1         | 镀银                     |
| B          | 本体                | LCP            | 1         | 黑色                     |
| A          | 卡件                | 黄铜             | 1         | 镀银                     |
| 项目<br>ITEM | 名称<br>DESCRIPTION | 材质<br>MATERIAL | 数量<br>QTY | 表面处理/颜色<br>FINSH/COLOR |

|             |                 |                   |                |            |                    |     |                                                                                       |      |
|-------------|-----------------|-------------------|----------------|------------|--------------------|-----|---------------------------------------------------------------------------------------|------|
|             |                 |                   |                |            | 第一视角<br>FIRST VIEW |     |  |      |
| 标记<br>SING  | 处数<br>FREQUENCY | 更改文件号<br>REVISION | 签名<br>APPROVED | 日期<br>DATE | 比例<br>SCALE        | 1:1 | 一般公差<br>GENERAL TOLERANCE                                                             |      |
| 设计 DESIGN   |                 | 李春风               | 2017.05.17     |            | 单位<br>UNIT         | mm  | >0.5~2                                                                                | ±0.1 |
| 审核 CHECKED  |                 | 钟华华               | 2017.05.17     |            | 重量<br>WEIGHT       |     | >2~5                                                                                  | ±0.2 |
| 批准 APPROVED |                 | 罗孝金               | 2017.05.17     |            |                    |     | >5~10                                                                                 | ±0.3 |
|             |                 |                   |                |            |                    |     | 角度<br>ANGLE                                                                           | ±0.5 |

|                                                                                                   |                        |
|---------------------------------------------------------------------------------------------------|------------------------|
| 名称/NAME:                                                                                          | 轻触开关<br>TACTILE SWITCH |
| 型号/MODEL:                                                                                         | TS5215A 160gf 025      |
|  深圳市首韩科技有限公司 |                        |



深圳市首韩科技有限公司

SHENZHEN SHOUHAN TECHNOLOGY CO., LTD

Tel: 0755-27597601 Fax: 0755-27597491

## 承 认 书

### SPECIFICATION FOR APPROVAL

产 品 编 码

Material code: \_\_\_\_\_

产品名称 Project: \_\_\_\_\_

轻触开关

规格型号 Part No: \_\_\_\_\_

TS5215A 160gf 025

贵公司承认印 Approval signatures

| 料 号/Part No. | 签 章/Signatures |
|--------------|----------------|
|              |                |

日期 Date: \_\_\_\_\_

|             |     |                                                                                      |
|-------------|-----|--------------------------------------------------------------------------------------|
| 拟制/Drawn    | 李春风 |  |
| 审核/Check    | 钟华华 |                                                                                      |
| 批准/Approved | 罗孝金 |                                                                                      |

## 产 品 规 格 书

### PRODUCT SPECIFICATION

|                               |                                    |                                                                                                                                                                      |                                                                                     |
|-------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| SIRLES                        |                                    | 系列:FLIP SWITCHES(轻触开关)                                                                                                                                               |                                                                                     |
| MODEL                         |                                    | 型号: TS5215A 160gf 025                                                                                                                                                |                                                                                     |
| 1.RATING                      |                                    | 额定值:50mA 12V DC                                                                                                                                                      |                                                                                     |
| 2.CONSTRUTION DIMENSION 结构尺寸  |                                    | Apply to the appended drawing:符合附加图纸                                                                                                                                 |                                                                                     |
| 3.APPEARANCE 外观               |                                    | Have no remarkable damage,crack and rust etc:无明显损伤,裂纹,锈迹等.                                                                                                           |                                                                                     |
| 4.CONTACTLOOP 接触回路            |                                    | Monople loop:单通单极回路                                                                                                                                                  |                                                                                     |
| ITEM 专案                       |                                    | TEST CONDITION 测试条件                                                                                                                                                  | SPECIFICATION 规格                                                                    |
| 5.CAPABILITY OF ELECTRIC 电气性能 |                                    |                                                                                                                                                                      |                                                                                     |
| 5A                            | INSULATION RESISTANCE<br>绝缘电阻      | Measurements shall be made following Application of DC500V potential across terminals and across terminals and fuame for 1minute,在端子之间和端子与壳之间加 DC250V 条件下,持续 1 分钟测量. | 100M $\Omega$ min<br>100 M $\Omega$ 以上.                                             |
| 5B                            | WITHSTAND VILTAGE<br>耐电压           | AC250V、50HZ、1 min (imin(interrupting current $\leq$ 500uA). AC250V、50HZ、1 分钟(漏电流 500uA)                                                                              | There shall be no briakdown 无击穿现象出现。                                                |
| 5C                            | CONTACT CIRCUIT<br>接触电路            | Addition 1.5-2 time force on the top of the keystrok and press the switch,DC50V100mA 在按键顶端上等于作用力 1.5-2 倍的力按动开关,DC50V,10Ma.                                           | 100m $\Omega$ Max<br>100m $\Omega$ 以下                                               |
| 5D                            | SWITCH CONNECTION FLASH<br>开关接触点抖动 | Addition DC5V on the two side of switch,at a speed of 3-5time a sec.to press the switch.在开关的两端加 DC5V 的电压,以 3-5 次/秒的速度按动开关.                                           | The flash time between open not more than 10ms.<br>开关在接通和断开时的接点抖动时间不大于 10 ms.       |
| 6.MECHANICAL EFFICIENCY 机械性能  |                                    |                                                                                                                                                                      |                                                                                     |
| 6A                            | CONTACT STRENGTH<br>按键强度           | The contact shall be capable of a rorce of 5N for 5 seconds in any directions.沿开关动作方向可承受静能压力 5N, 保持 5 秒钟.                                                            | Switch electric andmechanical efficiency does not break 无损开关电气或者机械性能                |
| 6B                            | CONTACT JOURNEY                    |                                                                                                                                                                      | 按键行程<br>0.25 $\pm$ 0.1mm                                                            |
| 6C                            | DRIVE FORCE<br>驱动力                 | Being measure at across spring piece and across keystoke forergometer.<br>用测力计在按键与弹片之 间测量.                                                                           | Contact switch'sd drive dirive fouce was160 $\pm$ 50gf.<br>按键的开关驱动力为 160 $\pm$ 50gf |

|                                             |                                                                                                                                                                                                                                       |                                                                                                                                                                                         |                                                                                                                                              |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 6D                                          | CONNECTION<br>STRENGTH<br>接线端强度                                                                                                                                                                                                       | A force of 1N being applying in any directions of the switch connection partt..在接线端的作用方向施加 1N 的力.                                                                                       | Switch mechanical efficiency does not break.无损开关机械性能.                                                                                        |
| 6E                                          | MECHANICAL LIFE<br>机械寿命                                                                                                                                                                                                               | Operatin at a rate of 30-50 cycles a minute. 以 30-50 次/分的驱动速度操作.                                                                                                                        | Life:100000cycles<br>寿命:100000次                                                                                                              |
| 7.ENVIRONME NT---RESISTANT EFFICIENCY 耐环境性能 |                                                                                                                                                                                                                                       |                                                                                                                                                                                         |                                                                                                                                              |
| 7A                                          | CHANGE OF<br>TEMPERATURE 温度变化                                                                                                                                                                                                         | The first temperature shall be 70 °C ,3h and changed to-25°C, 0.5h, 5cycles of above test. 先 70°C, 3h, 然后-25°C, 0.5h, 如此重复 5 次.                                                         | 1. The appearance should not break.外观应无损伤.<br>2. Contact resistance $\leq 100\text{ M}\Omega$ 接触电阻 $\leq 100\text{M}\Omega$                  |
| 7B                                          | HUMIDITY RESISTANT<br>耐湿热                                                                                                                                                                                                             | 40 $\pm$ 2°C in temperature and 90-95%RH, Ruring thetest time without load; After testing the temperature should be 24h. 经 40 $\pm$ 2°C, 相对湿度 90-95%, 试验期间, 开关不动作, 不带电负荷, 试验后恢复到常温 24h. | 3. Insulation resistance $\geq 100\text{ M}\Omega$ . 绝缘电阻 $\geq 100\text{ M}\Omega$                                                          |
| 8.IOINTING EFFICIENCY 焊接性能                  |                                                                                                                                                                                                                                       |                                                                                                                                                                                         |                                                                                                                                              |
| 8A                                          | SOLDERABILITY<br>可焊性                                                                                                                                                                                                                  | Temperature260 $\pm$ 5 °C ;Duration;3 $\pm$ 0.5S:温度在 260 $\pm$ 5 °C, 持续 3 $\pm$ 0.5S.                                                                                                   | Solderability part should above 90% 可焊部分被焊料覆盖面应在 90% 以上.                                                                                     |
| 8B                                          | SOLDER—RESISTANT<br>耐焊剂性                                                                                                                                                                                                              | Warm-up temperature:100°C,40S, 焊锡温度 260 $\pm$ 5 °C, 浸焊时间 5 $\pm$ 0.5S.                                                                                                                  | Froth height of assist solder should under board and switch electric and mechanical efficien- cy does not break.助焊剂发泡不应超过印制板,无损伤开关电气或机械动作性能. |
| 8C                                          | JOINTING—RESISTANT<br>耐焊接热                                                                                                                                                                                                            | Jointing temperature: 260 $\pm$ 5 °C ,Duration of immersion: 5 $\pm$ 1S. 焊锡温度 260 $\pm$ 5 °C, 浸焊时间 5 $\pm$ 1S                                                                           | efficiency does not break 无损伤开关电气或机械动作性能.                                                                                                    |
| 8D                                          | NORMAL JOLNTING TIMES<br>正常焊接次数                                                                                                                                                                                                       |                                                                                                                                                                                         | $\leq 2$ times 小于 2 次                                                                                                                        |
| 9.NOTES                                     |                                                                                                                                                                                                                                       |                                                                                                                                                                                         |                                                                                                                                              |
| 9A                                          | The whole boxes of switch should keep in the temperature -30--80 °C and less than 80%RH withort acidic,alkalescence,caustic gas in the environment of the storage.<br>整箱包装的开关,应在温度为-30--80°C,相对湿度不大于 80%,周围的空气中没有酸性、碱性或其他腐蚀性气体的库房内保管。 |                                                                                                                                                                                         |                                                                                                                                              |
| 9B                                          | Operating Temperature Range:-25 to 70°C<br>操作温度的范围: -25 to 70°C                                                                                                                                                                       |                                                                                                                                                                                         |                                                                                                                                              |
| 9C                                          | Switch should install in a correct method.<br>开关应按正确的安装方法进行正确安装使用。                                                                                                                                                                    |                                                                                                                                                                                         |                                                                                                                                              |