



日昇電子科技有限公司  
 深圳市丰华日昇科技有限公司

RI SHENG HI-TECH ELECTRICAL CO., LIMITED  
 TEL: 0755-29663560 FAX: 0755-29648851

承认书  
 Acknowledgment

CUSTOMER NAME 客户名称: \_\_\_\_\_  
 CUSTOMER PARTS NO 客户料号: \_\_\_\_\_  
 DESIGNATION 系列: \_\_\_\_\_  
 MODEL NO 型号: ST-1102-6(H=6mm)  
 DRAWING NO 图型号: \_\_\_\_\_  
 FORDRAWING ON 客户机种: \_\_\_\_\_

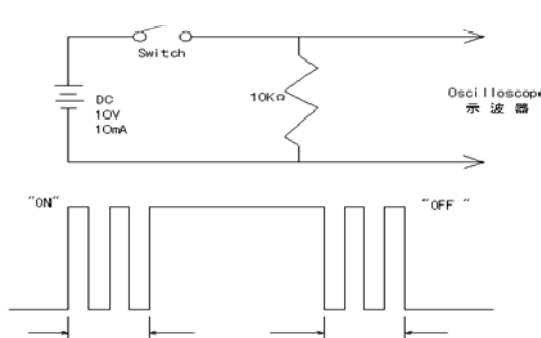

PLEASE CONFIRM OUR SPECIFICATION. 敬请确认规格书之内容。

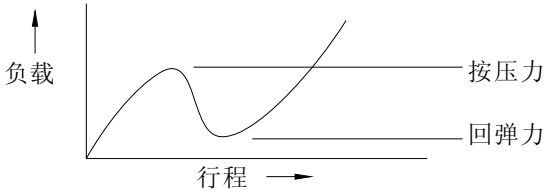

PLEASE CONFIRM AND RETURN TO US. 请确认后惠返 (1) 份。

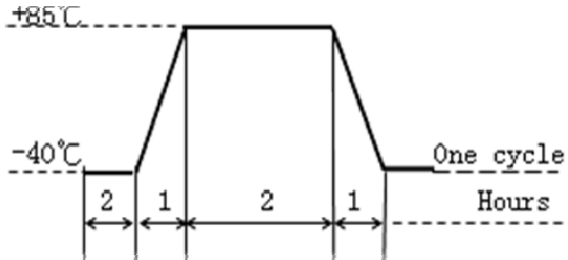

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| APPROVAL STATUS 审批 |            |
| APPROVED 接受        | FAILED 不接受 |
| SIGNATURE 签署       | DATE 日期    |

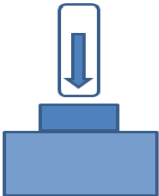
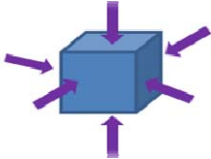

|          |          |          |    |
|----------|----------|----------|----|
| DGN 制表人  | CKD校对    | APPD审核   |    |
| 刘丽       | 张伟       |          |    |
| DATE 日期/ | DATE 日期/ | DATE 日期/ | NO |


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|   |                               |   |                                    |
|---|-------------------------------|---|------------------------------------|
| 1. General specification 基本事项   |                               |   |                                    |
| 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, 50mA   |                               |   |                                    |
| 1.3 Operation temperature range 使用温度试验范围: -20℃~+70℃   |                               |   |                                    |
| 1.4 Preservative temperature range 保存温度范围: -40℃~+85℃  |                               |   |                                    |
| 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<br>Ambient temperature 温度: 5~35℃<br>Relative humidity 相对湿度: 45~85%<br>Air pressure 气压: 86~106kPa(860~1060mbar)<br>However ,if doubt arises on the decision based on the measured<br>Values under the above-mentioned conditions ,the following conditions be employed:<br>但是在对判定产生疑义时,按下述状态实施:<br>Ambient temperature 温度: 20±2℃<br>Relative humidity 相对湿度: 65±5%<br>Air pressure 气压: 86~106kPa(860~1060mbar) |                               |   |                                    |
| 2. Performance 性能   |                               |   |                                    |
| 2.1 Electrical characteristics 电气性能   |                               |   |                                    |
|   | Item<br>项目                    | Test condition<br>测试条件  | Performance<br>规格                  |
| 2.1.1   | Contact Resistance<br>接触电阻    | Push force: (Operation force)X2。<br>测定时的负荷: 操作方向动作力基准值的 2 倍<br>Measurement tool: Contact resistance meter<br>测定器: 微电流接触电阻计 (1kHz,20mV,5~50mA) | 100mΩ max.<br>100 毫欧以下。            |
| 2.1.2   | Insulation Resistance<br>绝缘电阻 | DC 250V(Between terminals) frame for 1 minute.<br>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.<br>100 兆欧以上。            |
| 2.1.3   | Withstand Voltage<br>耐电压      | AC 250V (Between terminals) frame for 1 minute.<br>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<br>无绝缘破坏 |
| 2.1.4   | Bouncing<br>触点抖动              | Operation speed:3~4times/s<br>操作速度: 每秒 3~4 次<br>          | ON: 3ms max 以下<br>OFF: 8ms max 以下  |
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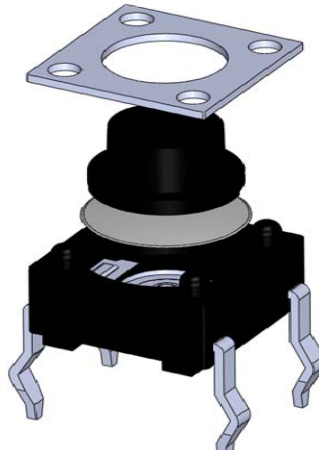
| 2.2 Mechanical Characteristics 机械性能  |                             |  |   |
|--|-----------------------------|--|---|
| Item<br>项目   |                             | Test condition<br>测试条件   | Performance<br>规格   |
| 2.2.1  | Operations Force<br>动作力     | Push by recommended operating condition.<br>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。<br>  | Push force<br>按压力 $2.6 \pm 0.5N$ ( $260 \pm 50gf$ )<br>Return force<br>回弹力 $0.5N$ ( $50gf$ 最小)                    |
| 2.2.2.   | Travel to closure<br>运作行程   | Push by recommended operating condition<br>$F=(Operation\ force) \times 2$<br>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。  | $0.3 \pm 0.1mm$   |
| 2.2.3  | Push strength<br>按压强度       | 30N (3Kgf) for 1 minute<br>在开关驱动器件顶端中央，在按压力方向加 30N (3Kgf) 压力，作用 60 秒。  | No damage(Electrical and mechanical)<br>无异常(电气、机械性能)  |
| 2.2.4  | Vibration test<br>耐振性       | 1) Amplitude 全振幅: 1.5mm<br>2) Sweep rate: 10-55-10Hz for 1 minute<br>扫描速度: 10-55-10Hz 1 分钟<br>3) Sweep method: Logarithmic frequency sweep rate<br>扫描方式: 对数频率扫描速度<br>4) Vibration direction : X、Y、Z (3 directions)<br>振动方向: X、Y、Z (3 方向)<br>5) Time: Each direction 2 hours (Total 6 hours)<br>时间: 每个方向 2 个小时 (共 6 小时) | No.2.1 and 2.2.1 to 2.2.2 shall be satisfied<br>满足 2.1 项和 2.2.1 至 2.2.2 项。  |
| 2.2.5  | Soldering heat test<br>耐焊接热 | Soldering area: $t/2$ of P.W.B thickness<br>(P.C.B:T=1.6mm)<br>焊接面积: 印刷基板的 $1/2$ 厚度处<br>Soldering temperature: $260 \pm 5^{\circ}C$<br>焊接温度: $260 \pm 5^{\circ}C$<br>Soldering time: $3 \pm 0.5sec$<br>焊接时间: $3 \pm 0.5$ 秒   | No damage (Electrical and mechanical)<br>无异常(电气、机械性能)   |
| 2.2.6  | Solderbility<br>可焊性         | After sprated flux<br>涂上助焊剂后<br>temperature: $245 \pm 5^{\circ}C$<br>温度: $245 \pm 5^{\circ}C$<br>Soldering time: $3 \pm 0.5sec$<br>焊接时间: $3 \pm 0.5$ 秒   | 90% or more of surface area of the portion immersed in solder shall be covered by new solder<br>90%或更多的浸焊面积能被焊锡覆盖 |
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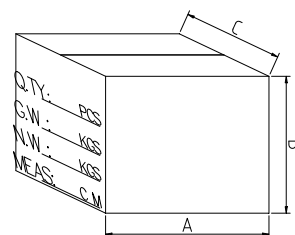
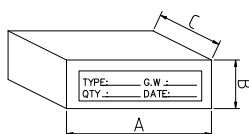
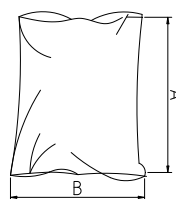
| 2.3 Climatic characteristics 耐候性能  |                                   |  |   |
|--|-----------------------------------|--|---|
| Item<br>项目   |                                   | Test condition<br>测试条件   | Performance<br>规格   |
| 2.3.1  | Cold test<br>耐寒性                  | 1) Temperature: $-40\pm 2^{\circ}\text{C}$<br>温度: $-40\pm 2^{\circ}\text{C}$<br>2) Duration of test: 96h<br>持续时间: 96 小时<br>3) Take off a drop water<br>去掉水珠<br>4) Standard conditions after test: 1h<br>试验后的放置条件: 1 小时   | Contact resistance : 200m $\Omega$ max<br>接触电阻: 200 m $\Omega$ 以下<br>Insulation resistance: 10M $\Omega$ min<br>绝缘电阻: DC. 100V, 大于 10M $\Omega$<br>Withstand voltage :No. destruction.<br>耐电压: 无绝缘破坏。<br>No. 2.2.1 to 2.2.2 shall be satisfied<br>满足 2.2.1 到 2.2.2 项。 |
| 2.3.2  | Heat test<br>耐热性                  | 1) Temperature: $80\pm 2^{\circ}\text{C}$<br>温度: $80\pm 2^{\circ}\text{C}$<br>2) Duration of test: 96h<br>持续时间: 96 小时<br>3) Standard conditions after test :1h<br>试验后的放置条件: 1 小时   | Contact resistance : 200m $\Omega$ max<br>接触电阻: 200 m $\Omega$ 以下<br>Insulation resistance: 10M $\Omega$ min<br>绝缘电阻: DC. 100V, 大于 10M $\Omega$<br>Withstand voltage :No. destruction.<br>耐电压: 无绝缘破坏。<br>No. 2.2.1 to 2.2.2 shall be satisfied<br>满足 2.2.1 到 2.2.2 项。 |
| 2.3.3  | TEMPERATURE CYCLIG TEST<br>温度交变试验 | According to following figure, after 5cycles, test after keeping in normal condition for 30min.<br>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。<br>                                     | Contact resistance : 200m $\Omega$ max<br>接触电阻: 200 m $\Omega$ 以下<br>Insulation resistance: 10M $\Omega$ min<br>绝缘电阻: DC. 100V, 大于 10M $\Omega$<br>Withstand voltage :No. destruction.<br>耐电压: 无绝缘破坏。<br>No. 2.2.1 to 2.2.2 shall be satisfied<br>满足 2.2.1 到 2.2.2 项  |
| 2.3.4  | Humidity test<br>耐湿性              | 1) Temperature: $60\pm 2^{\circ}\text{C}$<br>温度: $60\pm 2^{\circ}\text{C}$<br>2) Relative humidity: 90~95%<br>相对湿度: 90~95%<br>3) Duration of test: 96h<br>持续时间: 96 小时<br>4) Take off a drop water<br>去掉水珠<br>5) Standard conditions after test: 1h<br>试验后的放置条件: 1 小时 | Contact resistance : 200m $\Omega$ max<br>接触电阻: 200 m $\Omega$ 以下<br>Insulation resistance: 10M $\Omega$ min<br>绝缘电阻: DC. 100V, 大于 10M $\Omega$<br>Withstand voltage :No. destruction.<br>耐电压: 无绝缘破坏。<br>No. 2.2.1 to 2.2.2 shall be satisfied<br>满足 2.2.1 到 2.2.2 项  |
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| Item<br>项目   |  | Test condition<br>测试条件  | Performance<br>规格   |             |
|--|--|---|---|-------------|
| 2.3.5  | Endurance (switching) action<br>耐久特性(开关寿命) | 1) Operation speed: 1time/s<br>动作速度: 1次/秒<br>2) Push force: Maximum value of operation force<br>按力: 动作力规格值的上限<br>3) Operation number: 30,000 times<br>动作次数: 30,000次<br><br>安装示意图<br> | Contact resistance : 200mΩ max<br>接触电阻: 200 mΩ 以下<br>Bouncing : 10 ms max<br>触点抖动: 10 毫秒以下<br>Insulation resistance: 10MΩ min<br>绝缘电阻: DC.100V, 大于 10MΩ<br>Withstand voltage :No. destruction.<br>耐电压: 无绝缘破坏。<br>Variations rate of operation force shall be within ±30% to the value before testing<br>动作力的变化范围在初始值的±30%以内<br>2.2.2 shall be satisfied<br>满足 2.2.2 项 |             |
| 2.3.6  | Withstand H2S<br>耐 H2S                     | 1) Density: 3±1ppm<br>浓度: 3±1ppm<br>1) Temperature: 40±2℃<br>温度: 40±2℃<br>2) Relative humidity:90~95%<br>相对湿度: 90~95%<br>3) Duration of test: 12h<br>持续时间: 12 小时<br>4) Standard conditions after test:1h<br>试验后的放置条件: 1 小时  | Contact resistance : 200mΩ max<br>接触电阻: 200 mΩ 以下<br>Insulation resistance: 10MΩ min<br>绝缘电阻: DC.100V, 大于 10MΩ<br>Withstand voltage :No. destruction.<br>耐电压: 无绝缘破坏。<br>No.2.2.1 to 2.2.2 shall be satisfied<br>满足 2.2.1 到 2.2.2 项  |             |
| 2.3.7  | Salt mist<br>盐雾实验<br>(铁材质不做盐雾要求)           | At 5% Nacl liquor for 24 hours (SUS 24 H、Cu 24 H、) depend on 35℃, after washing ,keep in normal condition.<br>5% 的 Nacl 溶液, PH 值: 6.5~7.2, 在 35℃ 的条件下喷雾 24 小时(不锈钢 24 小时、铜材 24 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.<br>在金属件上没有腐蚀斑点。  |             |
| 2.3.8  | Shock<br>耐冲击性                              | Peak acceleration: 500m/S <sup>2</sup><br>冲击加速度: 500m/S <sup>2</sup><br>脉冲持续时间 11ms<br>Test time-6direction,each 3 times total 18 times<br>测试次数-6 个方向,各 3 次共计 18 次<br><br>         | Contact resistance : 200mΩ max<br>接触电阻: 200 mΩ 以下<br>Insulation resistance: 10MΩ min<br>绝缘电阻: DC.100V, 大于 10MΩ<br>Withstand voltage :No. destruction.<br>耐电压: 无绝缘破坏。<br>No.2.2.1 to 2.2.2 shall be satisfied<br>满足 2.2.1 到 2.2.2 项  |             |
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| 3. Precaution 注意事项  |   |            |             |
|---|---|------------|-------------|
| 3.1 Soldering condition 浸焊条件  |   |            |             |
| Item 项目   | Condition 测试条件  |            |             |
| Preheat temperature<br>预热温度   | 110°C max ( Embilmental temperature of soldering surface of P.C.B )<br>110°C 以下 (印刷基板焊锡周围的温度) |            |             |
| Preheat time<br>预热时间  | 60 sec, max<br>60 秒以内   |            |             |
| Area of flux<br>助焊剂面积   | 1/2 max of P.C.B. thickness<br>印刷基板厚度的 1/2 以内   |            |             |
| Temperature of solder<br>焊锡温度   | 260±5°C max<br>260±5°C 以下   |            |             |
| Times of immersion<br>浸焊时间  | Within 5 sec<br>5 秒以内   |            |             |
| Soldering number<br>浸焊次数  | Within 2 times (But should bring down heat of the first soldering)<br>2 次以内 (但应把第一次焊锡的温度降下来)  |            |             |
| Printed wiring board<br>印刷基板  | Single sided copper- clad laminates<br>单面铜箔   |            |             |
| <p>1) After switches were soldered, please be careful not to clean switches with solvent<br/>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.<br/>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.<br/>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.<br/>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.<br/>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.<br/>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.<br/>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> |   |            |             |
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|   |   |            |             |

#### 4. Specification 材质

| NO | Part Name<br>名称 | QTY<br>数量 | Material<br>颜色 | Specification<br>材质 | Photos<br>照片  |
|----|-----------------|-----------|----------------|---------------------|---|
| 1  | 盖板              | 1         | 灰色             | 铁镀锡梯                |  |
| 2  | 按钮              | 1         | 黑色             | PPA                 |   |
| 3  | 簧片              | 1         | 单面银白色          | 铜镀银                 |   |
| 4  | 基座              | 1         | 黑色             | PPA                 |   |
| 5  | 端子              | 1         | 银白色            | 黄铜镀银                |   |



|          |                  |                         |                            |
|----------|------------------|-------------------------|----------------------------|
| 4.3H-7H  | 每袋1K装<br>1K EACH | 每盒5袋装<br>5 BAGS PER BOX | 每箱20盒装<br>20 BOXES PER BOX |
| 7.5H-10H | 每袋1K装<br>1K EACH | 每盒4袋装<br>4 BAGS PER BOX | 每箱20盒装<br>20 BOXES PER BOX |

| A  | B  |  |
|----|----|--|
| 19 | 14 |  |

| A    | B    | C   |
|------|------|-----|
| 23.3 | 15.3 | 7.2 |

| A  | B    | C    |
|----|------|------|
| 48 | 32.5 | 37.5 |



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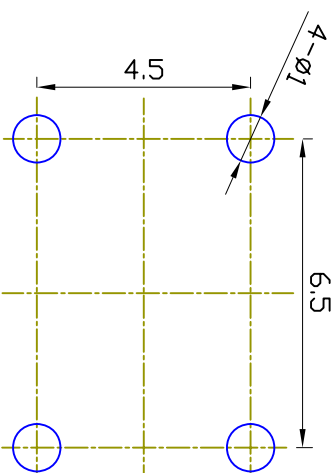
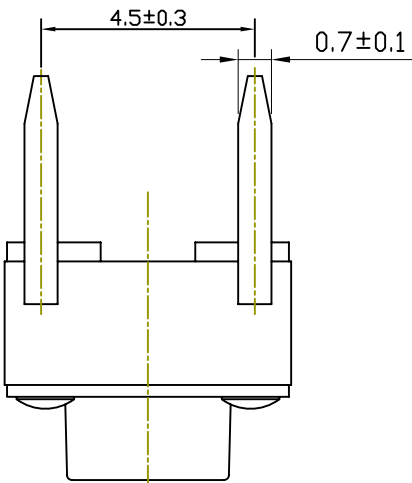
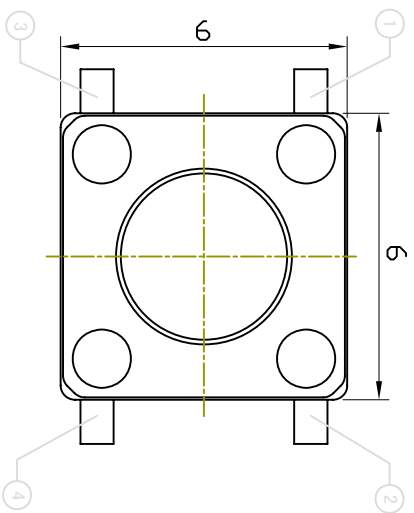
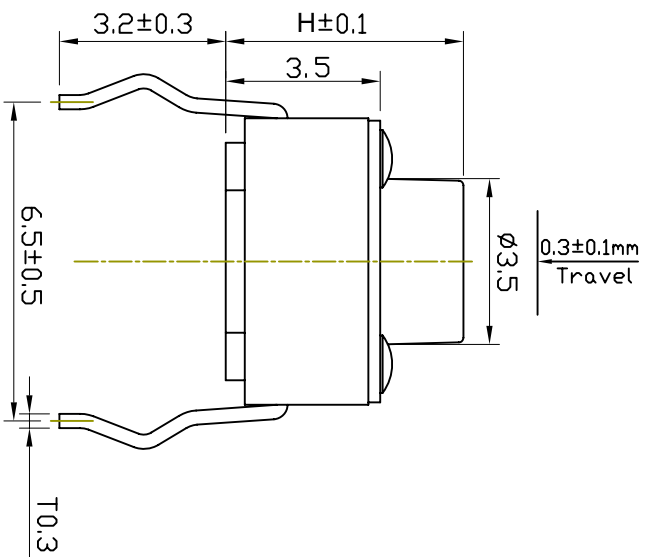
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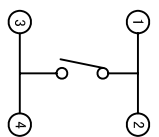
### P. C. B MOUNTING PATTERN DIMENSION

the following soldering are recommended for reflow soldering

| H    | H    |
|------|------|
| 4.3  | 4.5  |
| 5.0  | 5.5  |
| 6.0  | 6.5  |
| 7.0  | 7.5  |
| 8.0  | 8.5  |
| 9.0  | 9.5  |
| 10.0 | 10.5 |
| 11.0 | 12.0 |
| 13.0 | 14.0 |
| 15.0 | 16.0 |



CIRCUIT DIAGRAM



### 技术参数

| NO | 项目   | 参数                |
|----|------|-------------------|
| 1  | 额定电流 | 50mA 12V DC       |
| 2  | 接触电阻 | ≤100mΩ            |
| 3  | 按力   | 260±50gf          |
| 4  | 行程   | 0.3±0.1mm         |
| 5  | 绝缘电阻 | ≥100MΩ            |
| 6  | 抗电强度 | AC 250V 50Hz 1Min |
| 7  | 寿命   | 30,000 c/c        |

| 未注公差    |       |
|---------|-------|
| 30<L    | ±0.30 |
| 10<L≤30 | ±0.20 |
| 5<L≤10  | ±0.15 |
| L≤5     | ±0.10 |
| 角       | ±2°   |



日昇电子科技有限公司  
RISHENG HI-TECH ELECTRICAL CO., LIMITED

产品名称: 轻触开关 TACT SWITCH  
产品型号: ST-1102-6 (H=6mm)

|      |  |       |  |    |  |    |  |      |  |    |  |    |  |    |  |    |  |     |    |  |
|------|--|-------|--|----|--|----|--|------|--|----|--|----|--|----|--|----|--|-----|----|--|
| 底图总号 |  | 更改文件号 |  | 标记 |  | 日期 |  | 变更内容 |  | 担当 |  | 审核 |  | 批准 |  | 角度 |  | ±2° | 批准 |  |
| 签    |  |       |  |    |  |    |  |      |  |    |  |    |  |    |  |    |  |     |    |  |
| 日    |  |       |  |    |  |    |  |      |  |    |  |    |  |    |  |    |  |     |    |  |

|          |  |
|----------|--|
| 程(通)用件登记 |  |
| 描        |  |
| 描        |  |
| 校        |  |
| 旧底图总号    |  |