

# 承 認 書

## PRODUCT APPROVAL SHEET

产品名称 PRODUCT Name : 轻触开关

规格型号 PART NO : 6\*6 四脚贴片

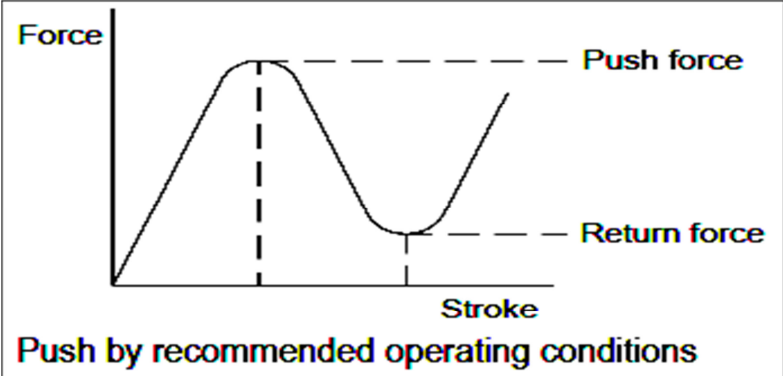
物 料 号 PART NO : KH-6X6X9.5H-SMT-160G

|                  |                  |                  |  |
|------------------|------------------|------------------|--|
| 制表/DESIGNED BY   | 校对/CHECKED BY    | 审核/APPROVED BY   |  |
| 吴永余              | 吴永友              | 张 鹏              |  |
| DATE 日期 20201117 | DATE 日期 20201117 | DATE 日期 20201117 |  |



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|                                                                                                      |            |      |       |             |
|------------------------------------------------------------------------------------------------------|------------|------|-------|-------------|
| 深圳市金航标电子有限公司                                                                                         |            |      | 产品系列  | 轻触开关        |
| TACT SWITCH SPECIFICATION<br>轻触开关产品承认书                                                               |            |      |       |             |
| 1、概述 GENERAL                                                                                         |            |      |       |             |
| 1.1 适用范围 APPLICATION                                                                                 |            |      |       |             |
| 此规格书适用于机械式轻触开关的相关要求                                                                                  |            |      |       |             |
| This specification is applied to the requirements for TACTILE SWITCH(MECHANICAL CONTACT)             |            |      |       |             |
| 1.2 工作温度范围                                                                                           |            |      |       |             |
| Operating Temperature Range                                                                          |            |      |       |             |
| -20℃~70℃ (在标准大气压、标准温度条件下)                                                                            |            |      |       |             |
| -20℃~70℃ (Normal humidity, normal air pressure)                                                      |            |      |       |             |
| 1.3 贮藏温度范围                                                                                           |            |      |       |             |
| Storage Temperature Rane                                                                             |            |      |       |             |
| -40℃~85℃ (在标准大气压、标准温度条件下)                                                                            |            |      |       |             |
| -40℃~85℃ (Normal humidity, normal air pressure)                                                      |            |      |       |             |
| 1.4 测试条件                                                                                             |            |      |       |             |
| Test Conditions                                                                                      |            |      |       |             |
| 在没有其它特定的条件下，应该在以下的条件下进行测试和测量：                                                                        |            |      |       |             |
| Unless otherwise specified, tests and measurement shall be made in the following standard conditions |            |      |       |             |
| 常温.....5℃~35℃                                                                                        |            |      |       |             |
| Normal temperature.....5℃~35℃                                                                        |            |      |       |             |
| 标准湿度.....相对湿度 45%~85%                                                                                |            |      |       |             |
| Normal humidity.....relative humidity 45%~85%                                                        |            |      |       |             |
| 标准大气压.....86KPa~106 KPa                                                                              |            |      |       |             |
| Normal air pressure.....86KPa~106 KPa                                                                |            |      |       |             |
| 在制造过程中，测试和测量应该在以下的条件下进行：                                                                             |            |      |       |             |
| If any doubt arise from the judgment, tests shall be conducted at the following conditions           |            |      |       |             |
| 温度.....20℃±2℃                                                                                        |            |      |       |             |
| Temperature.....20℃±2℃                                                                               |            |      |       |             |
| 相对湿度.....65%±5%                                                                                      |            |      |       |             |
| Relative humidity.....65%±5%                                                                         |            |      |       |             |
| 环境气压.....86KPa~106 KPa                                                                               |            |      |       |             |
| Air pressure.....86KPa~106 KPa                                                                       |            |      |       |             |
| 2、详细说明 Detailed specification                                                                        |            |      |       |             |
| 2.1 外观：应无影响、降低产品性能的缺陷                                                                                |            |      |       |             |
| Appearance:There should be no defects that affect the serviceability of product.                     |            |      |       |             |
| 2.2 结构尺寸和安装尺寸：应符合装配图要求                                                                               |            |      |       |             |
| Style and dimension:shall conform to the assemble drawings.                                          |            |      |       |             |
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| 深圳市金航标电子有限公司                                                                                                                                                                                                                                                     |            |                                                                                      | 产品系列  | 轻触开关        |
| TACT SWITCH SPECIFICATION<br>轻触开关产品承认书                                                                                                                                                                                                                           |            |                                                                                      |       |             |
| 2.3 操作形式：有触觉反应的操作<br>Type of actuating:Tactile feedback.<br>2.4 开关结构：单回路输出（具体的触点结构在装配图中已绘出）<br>Contact arrangement:1 pole,1 throw<br>(Details of contact arrangement are given in the assembly drawings.)<br>2.5 开关工作额定值：DC12V 50mA<br>Ratings: DC12V 50mA       |            |                                                                                      |       |             |
| 测试项目 TEST ITEM                                                                                                                                                                                                                                                   |            |                                                                                      |       |             |
| 3. 电器性能 ELECTRICAL PERFORMANCE                                                                                                                                                                                                                                   |            |                                                                                      |       |             |
| 3-1 接触电阻 CONTACT RESISTANCE<br>在 1kHz 小电流电压（50mA，20mV）下测量。<br>Being tested at 1kHz small current and voltage (50mA，20mV) by contact resistance meter.<br>100 毫欧以下。<br>100mΩ max.                                                                                 |            |                                                                                      |       |             |
| 3-2 绝缘电阻 INSULATION RESISTANCE<br>在端子之间和端子与壳之间加 DC250V 条件下，持续 1 分钟测量。<br>DC 250v shall be applied for test between terminals and between terminals and frame for one minute.<br>100 兆欧以上。<br>100MΩ min.                                                          |            |                                                                                      |       |             |
| 3-3 耐电压 WITHSTAND VOLTAGE<br>在端子之间和端子于壳之间加 AC250V（50Hz 或 60Hz）感应电流 1mA 条件下，持续 1 分钟测量。<br>AC 250V and induction current 1mA shall be applied for test between terminals and between terminals and frame for one minute.<br>无击穿现象。<br>There shall be no breakdown. |            |                                                                                      |       |             |
| 4. 机械性能 MECHANICAL PERFORMANCE                                                                                                                                                                                                                                   |            |                                                                                      |       |             |
| 4-1 动作力 OPERATING FORCE<br><br>160±30gf<br>260±50gf                                                                                                                                                                                                              |            |  |       |             |
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TACT SWITCH SPECIFICATION  
轻触开关产品承认书

5. 耐久性 DURABILITY

5-1 可焊性试验 SOLDERING TEST

端子顶部被侵入锡池 0.5mm 深，温度  $260 \pm 5^{\circ}\text{C}$ ，时间 5 秒。

The tip of the terminal shall be dipped 0.5mm in the solder bath within temperature of  $260 \pm 5^{\circ}\text{C}$  for 5s.

侵入的部分 95% 以上表面将被锡覆盖

Over 95% of the immersed surface was covered by tin .

5-2 耐焊性试验 SOLDERING RESISTANT TEST

焊炉锡的温度控制在  $260 \pm 5^{\circ}\text{C}$ ，时间为  $3 \pm 0.5$  秒，与(基板)厚度 1.6mm.

Soldering temperature  $260 \pm 5^{\circ}\text{C}$ , soldering time  $3 \pm 0.5\text{s}$ , immersion depth up to the surface of the board, thickness of PCB 1.6mm.

手焊接时温度控制在  $350 \pm 5^{\circ}\text{C}$ ，时间为  $3 \pm 0.5$  秒，但不能在端子上施加异常压力。

Manual soldering temperature  $350 \pm 5^{\circ}\text{C}$ , soldering time  $3 \pm 0.5\text{s}$ , however excessive pressure shall not be applied to the terminal.

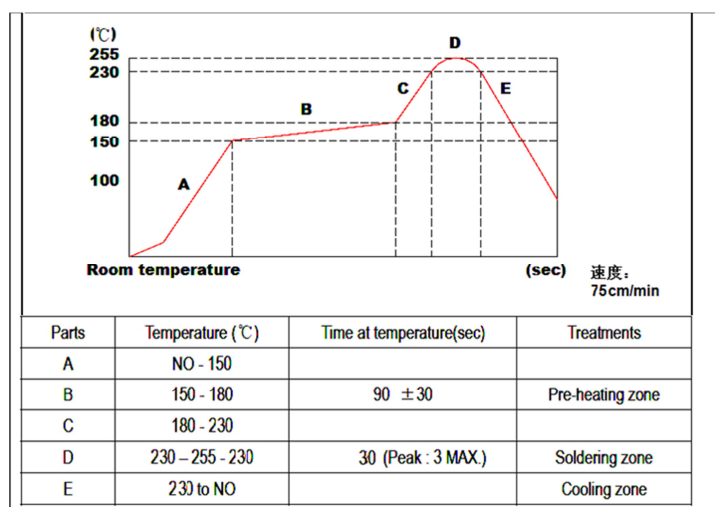
本体无变形，能满足与机械、电器性能。

Without deformation of case or excessive looseness of electrical properties

5-3 回流焊接热试验 REFLOW SOLDERING  
HEAR TEST

本体无变形，能满足与机械、电器性能。

Without deformation of case or excessive looseness of electrical properties



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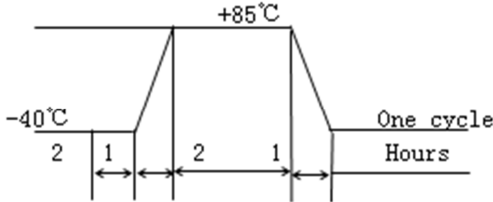
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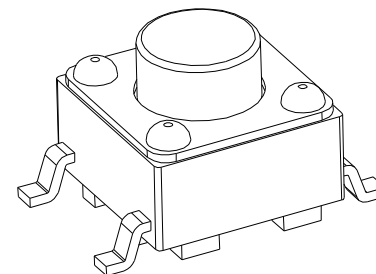
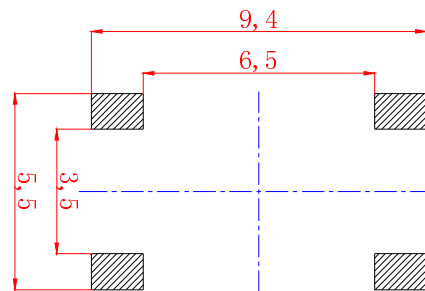
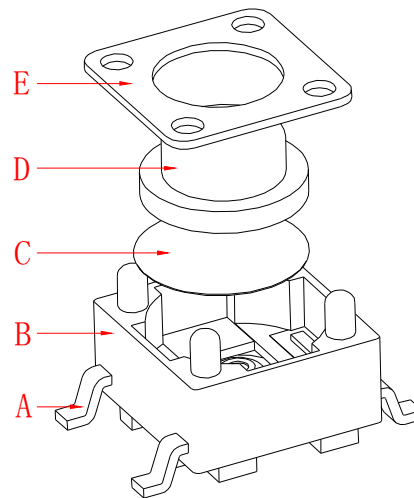
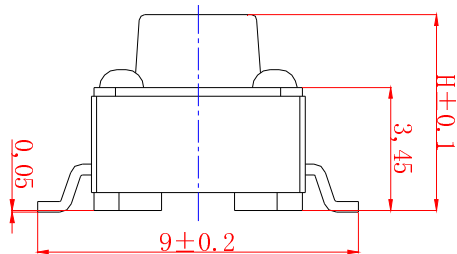
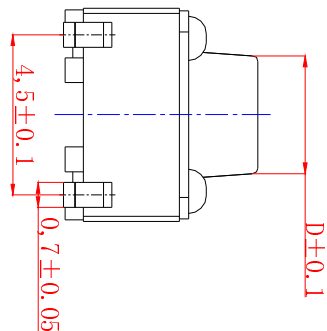
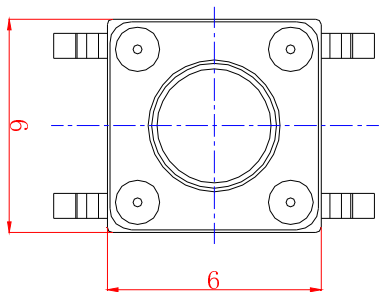
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| 深圳市金航标电子有限公司                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |      | 产品系列                                                                                                                                                                                                                                                                                                     | 轻触开关        |
| TACT SWITCH SPECIFICATION<br>轻触开关产品承认书                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |      |                                                                                                                                                                                                                                                                                                          |             |
| <p>5-4 寿命测试 LIFE TEST</p> <p>无负载条件, 每分钟 100-120 次的速度操作 100, 000 次。</p> <p>100, 000cycles of operation at a rate of 100-120 cycles per minute with unloading</p> <p>(1) 接触电阻 200 毫欧以下。Contact resistance 200mΩ</p> <p>(2) 动作力变化范围初始值 30%。Operating force 30% initial value.</p> <p>(3) ITEM 项目——1.2</p> <p>(4) ITEM 项目——1.3</p> <p>(5) ITEM 项目——2.2</p>                                                                                                                                                                                                                                                                                                                                                           |              |      |                                                                                                                                                                                                                                                                                                          |             |
| <p>5-5 盐雾 SAIL SPRA</p> <p>1) 测试温度: 35±2℃ Temperature: 35±2℃</p> <p>2) 循环次数: 4小时喷雾 1 小时停, 连续 1 次。喷雾 4 小时。Cycle: 4 Hours testing (1 Times) and 1 Hours stop. Based on total 4 hours.</p> <p>3) 盐雾浓度: 5±1% Salt solution concentration: 5±1% by weight.</p> <p>(1) 接触电阻 200 毫欧以下。Contact resistance 200mΩ.</p> <p>(2) 绝缘电阻 100 兆欧以上。Insulation resistance 100MΩ min.</p> <p>(3) 无任何迹象显示机械及电器性能之损坏</p> <p>there shall be no sign of mechanical and electrical damage.</p>                                                                                                                                                                                                                                           |              |      |                                                                                                                                                                                                                                                                                                          |             |
| <p>5-6 耐热试验 HEAT RESISTAN TEST</p> <p>在 80±2℃ 环境中放 96 小时, 再置于正常环境中, 30 分钟后进行测试。</p> <p>80±2℃ for 96H, test after keeping in normal condition for 30min.</p> <p>5-7 耐湿试验 MOISTURE RESISTANT TEST</p> <p>在 60±2℃ 90~95% 环境中放 96 小时, 再置于正常环境中, 30 分钟后进行测试。</p> <p>At 60±2℃ 90~95% RH for 96H, test after keeping in normal condition for 30min.</p> <p>5-8 耐冷试验 COLD RESISTANT TEST</p> <p>在 -40±2℃ 环境中放 96 小时, 再置于正常环境中, 30 分钟后进行测试。</p> <p>At -40±2℃ for 96H, test after keeping in normal condition for 30min.</p> <p>5-9 温度交变试验 TEMPERATURE CYCLIG TEST</p> <p>如图示之环境中, 循环 5 次后, 再置于正常环境中, 1 个小时后进行测试。</p> <p>According to following figure, after 5 cycles, test after keeping in normal condition for 1H.</p> |              |      |  <p>(1) 接触电阻 200 毫欧以下。<br/>Contact resistance 200mΩ.</p> <p>(2) 绝缘电阻 100 兆欧以上。<br/>insulation resistance 100MΩ min.</p> <p>(3) 无任何迹象显示机械及电器性能之损坏<br/>there shall be no sign of mechanical and electrical damage.</p> |             |
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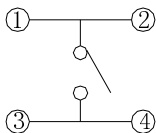
| D    | H    |  |
|------|------|--|
| 3.5  | 4.3  |  |
|      | 4.5  |  |
|      | 5.0  |  |
| 3.3  | 5.5  |  |
|      | 6.0  |  |
|      | 6.5  |  |
|      | 7.0  |  |
| 3.2  | 7.3  |  |
|      | 7.5  |  |
| 3.0  | 8.0  |  |
|      | 8.5  |  |
|      | 9.0  |  |
|      | 9.5  |  |
|      | 10.0 |  |
|      | 10.5 |  |
|      | 11.0 |  |
| 11.5 |      |  |

| D    | H    |  |
|------|------|--|
| 3.0  | 12.0 |  |
|      | 12.5 |  |
|      | 13.0 |  |
|      | 13.5 |  |
|      | 14.0 |  |
|      | 14.5 |  |
|      | 15.0 |  |
|      | 15.5 |  |
|      | 16.0 |  |
|      | 16.5 |  |
|      | 17.0 |  |
| 17.5 |      |  |
| 18.0 |      |  |
| 18.5 |      |  |
| 19.0 |      |  |



## 技术参数

1. 额定电流:50mA 12V DC
2. 接触电阻:100毫欧
3. 行 程:0.25±0.1mm
4. 绝缘电阻:100兆欧
5. 耐电压:250v 50Hz 1Min

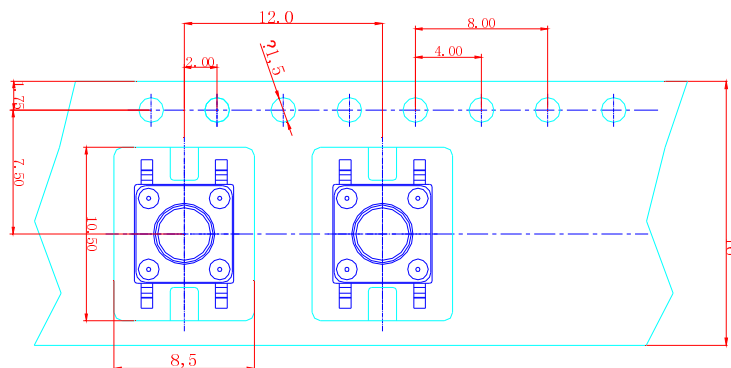


# 电器原理图

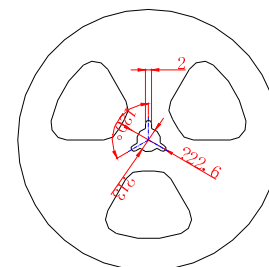
## PCB参考图

|    |          |          |
|----|----------|----------|
| 按力 | 160±30gf | 260±50gf |
| 寿命 | 10万次     | 10万次     |

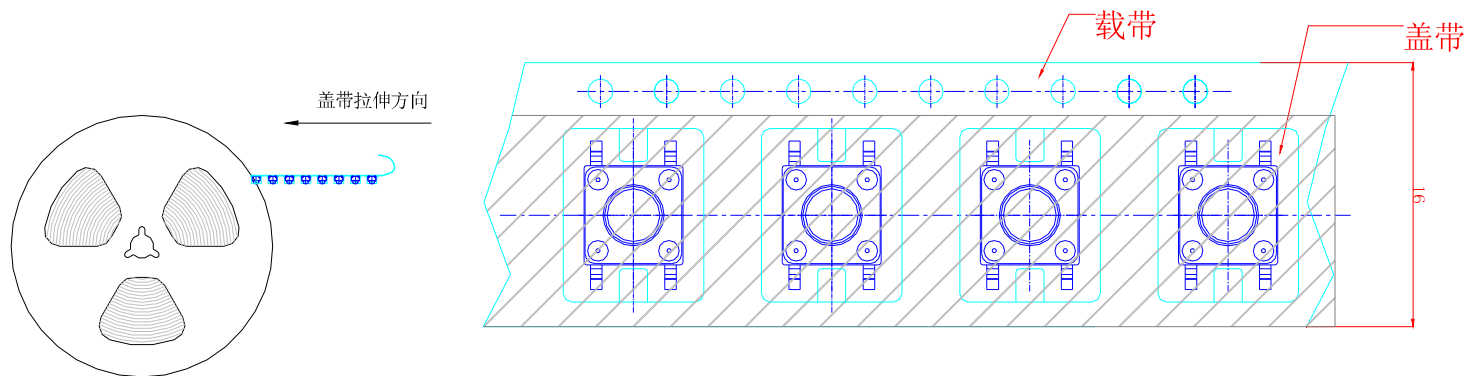
|    |    |       |    |      |             |    |            |    |             |        |                                                                                       |     |                  |                      |
|----|----|-------|----|------|-------------|----|------------|----|-------------|--------|---------------------------------------------------------------------------------------|-----|------------------|----------------------|
|    |    |       |    |      |             |    |            |    |             | 第一视角   |  | 比例  | 规格型号/<br>Part No | 6*6四脚贴片              |
| E  | 盖板 | 铁     | 1  | 镀铜锡  |             |    |            |    |             | 一般公差   |                                                                                       | 1:1 |                  |                      |
| D  | 按钮 | PPA 黑 | 1  | 清洗   |             |    |            |    |             | >0.5-2 | ±0.1                                                                                  | 单位  | 物料号/<br>Part No  | KH-6X6X9.5H-SMT-160G |
| C  | 簧片 | 不锈钢覆银 | 1  |      | 標記          | 處數 | 更改文件號      | 簽字 | 日期          | >2-5   | ±0.2                                                                                  |     |                  |                      |
| B  | 基座 | PPA 黑 | 1  | 清洗   |             |    |            |    |             | >5以上   | ±0.3                                                                                  |     |                  |                      |
| A  | 卡件 | 黄铜    | 2  | 镀银   |             |    |            |    |             | 角度     | ±1°                                                                                   | mm  |                  |                      |
| 序号 | 名称 | 材 料   | 数量 | 表面处理 | 设计/Designed |    | 审核/Checked |    | 批准/Approved |        | 深圳市金航标电子有限公司<br>www.kinghelm.com.cn      0755-28190160                                |     |                  |                      |
| 1  |    |       | 2  |      | 3           |    | 4          |    | 5           |        | 6                                                                                     | 7   | 8                |                      |



载带尺寸图



编带盘尺寸图



包装图

## 备注:

- 1、在编带前端和末端盖带长出约300-380mm.
- 2、在编带前端和末端各留15-30PCS的载带空位.

| 序号 | 高度 mm     | 数量 pcs |  |
|----|-----------|--------|--|
| 1  | 4.3-6.0   | 1000   |  |
| 2  | 7.0-7.5   | 800    |  |
| 3  | 8.0-8.5   | 700    |  |
| 4  | 9.0-11.0  | 500    |  |
| 5  | 12.0      | 450    |  |
| 6  | 13.0-14.0 | 400    |  |
|    |           |        |  |

|    |     |
|----|-----|
| 比例 | 1:1 |
| 单位 | mm  |

规格型号/  
Part No

产品名称/  
Product Name

KH-6X6X9.5H-SMT-160G

6\*6贴片

|       |  |
|-------|--|
| 槽记    |  |
| 虚数    |  |
| 更改文件数 |  |
| 日期    |  |

设计/Designed

吴永余

审核/Checked

张 鹏

批准/Approved

何春林

深圳市金航标电子有限公司

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