



# 温州瀚精电子有限公司

WENZHOU HANJING ELECTRONIC CO., LTD.

## 承 認 書

PRODUCT APPROVAL SHEET

产品名称 PRODUCT Name : 轻触开关

规格型号 PART NO : 3\*6 梅花沉板

物料号 PART NO : TS-B013\*\*\*

|                                                   |                                                  |                                                   |                                                                                      |
|---------------------------------------------------|--------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------------------------|
| 制表/DESIGNED BY<br><br>吴永余<br><br>DATE 日期 20201117 | 校对/CHECKED BY<br><br>吴永友<br><br>DATE 日期 20201117 | 审核/APPROVED BY<br><br>张 鹏<br><br>DATE 日期 20201117 |  |
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贵司承认栏 APPROVAL SIGNATURE

贵司名称/CUSTOMER NAME: \_\_\_\_\_

贵司物料名称/CUSTOMER TYPE: \_\_\_\_\_

贵司物料号/CUSTOMER NO: \_\_\_\_\_

请于\_\_\_\_年\_\_\_\_月\_\_\_\_日前承认返 日期 DATE: \_\_\_\_\_

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WENZHOU HANJING ELECTRONICS CO., LTD.

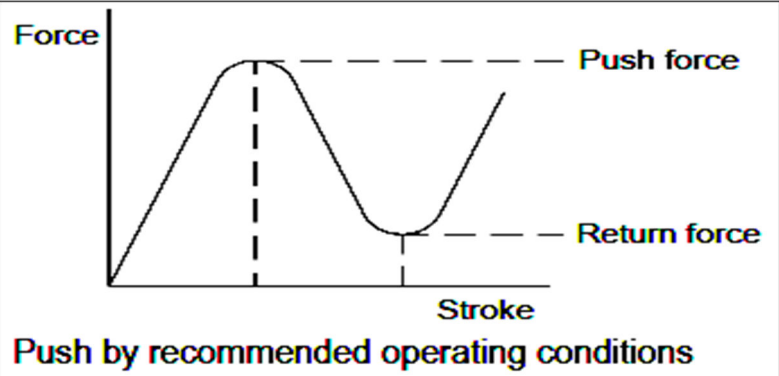
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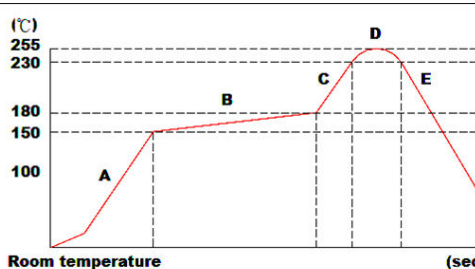
电话(Tel): 0577-62317178 传真(Fax): 0577-62311178 <http://www.wzhjele.com>

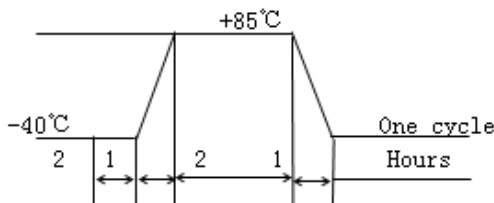
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| WENZHOU HANJING ELECTRONICS CO., LTD.                                                                |            |      | 产品系列  | 轻触开关        |
| TACT SWITCH SPECIFICATION<br>轻触开关产品承认书                                                               |            |      |       |             |
| 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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| WENZHOU HANJING ELECTRONICS CO., LTD.                                                                                                                                                                                                                            |            |                                                                                      | 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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| WENZHOU HANJING ELECTRONICS CO., LTD.                                                                                                                                                                                                                                                                                                |            |      | 产品系列  | 轻触开关        |
| TACT SWITCH SPECIFICATION<br>轻触开关产品承认书                                                                                                                                                                                                                                                                                               |            |      |       |             |
| 4-2 行程 TRIP<br>给开关施加动作力 2 倍不变的力，开关停止时的移动距离。<br>The force exerted 2 times the constant force on the switch and the moving distance at the switch stop.<br>0.2±0.1mm                                                                                                                                                                   |            |      |       |             |
| 4-3 手感值 HAND VALUE<br>开关按力减去回弹力的差值所占开关按力的百分比 Hand value: 30-70%<br>Percentage of switching pressures by the difference of switching pressures minus resilience.<br>手感值: 30-70%                                                                                                                                                       |            |      |       |             |
| 4-4 端子强度 TERMINAL STRENGTH<br>一个 300 克之静负荷施加端子顶部的一个方向持续 1 分钟。<br>A static force of 300g being applied in one direction on the tip of the terminal for 1 minute.<br>无任何迹象显示机械及电器性能之损坏。<br>There shall be of mechanical and electrical damage.                                                                                         |            |      |       |             |
| 4-5 手柄强度 KNOB STRENGTH<br>开关垂直于操作方向放置，从操作方向向驱动件施加2KG的静负荷持续1min。<br>Placing the switch such that the direction of switch operation is vertical, and then a static load of 2KG shall be applied in the direction of stem operation for a period of 1 min.<br>无任何迹象显示机械及电器性能之损坏。<br>There shall be of mechanical and electrical damage. |            |      |       |             |
|                                                                                                                                                                                                                                                                                                                                      |            |      |       |             |
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| WENZHOU HANJING ELECTRONICS CO., LTD.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                  | 产品系列                     | 轻触开关             |             |                  |                          |            |   |          |  |  |   |           |        |                  |   |           |  |  |   |                 |                    |                |   |           |  |              |
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| TACT SWITCH SPECIFICATION<br>轻触开关产品承认书                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                  |                          |                  |             |                  |                          |            |   |          |  |  |   |           |        |                  |   |           |  |  |   |                 |                    |                |   |           |  |              |
| 5. 耐久性 DURABILITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                  |                          |                  |             |                  |                          |            |   |          |  |  |   |           |        |                  |   |           |  |  |   |                 |                    |                |   |           |  |              |
| 5-1 可焊性试验 SOLDERING TEST                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |                          |                  |             |                  |                          |            |   |          |  |  |   |           |        |                  |   |           |  |  |   |                 |                    |                |   |           |  |              |
| <p>端子顶部被侵入锡池 0.5mm 深，温度 260±5℃，时间 5秒。</p> <p>The tip of the terminal shall be dipped 0.5mm in the solder bath within temperature of 260±5℃ for 5s.</p> <p>侵入的部分 95%以上表面将被锡覆盖</p> <p>Over 95% of the immersed surface was covered by tin .</p>                                                                                                                                                                                                                                                                                                                                                              |                  |                          |                  |             |                  |                          |            |   |          |  |  |   |           |        |                  |   |           |  |  |   |                 |                    |                |   |           |  |              |
| 5-2 耐焊性试验 SOLDERING RESISTANT TEST                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                  |                          |                  |             |                  |                          |            |   |          |  |  |   |           |        |                  |   |           |  |  |   |                 |                    |                |   |           |  |              |
| <p>焊炉锡的温度控制在 260±5℃，时间为 3±0.5 秒, 与(基板)厚度 1.6mm.</p> <p>Soldering temperature 260±5℃, soldering time 3±0.5s, immersion depth up to the surface of the board, thickness of PCB 1.6mm.</p> <p>手焊接时温度控制在 350±5℃，时间为 3±0.5 秒，但不能在端子上施加异常压力。</p> <p>Manual soldering temperature350±5℃, soldering time 3±0.5s, however excessive pressure shall not be applied to the terminal.</p> <p>本体无变形, 能满足与机械、电器性能。</p> <p>Without deformation of case or excessive looseness of electrical properties</p>                                                                                                                |                  |                          |                  |             |                  |                          |            |   |          |  |  |   |           |        |                  |   |           |  |  |   |                 |                    |                |   |           |  |              |
| 5-3 回流焊接热试验 REFLOW SOLDERING HEAR TEST                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                  |                          |                  |             |                  |                          |            |   |          |  |  |   |           |        |                  |   |           |  |  |   |                 |                    |                |   |           |  |              |
| <p>本体无变形, 能满足与机械、电器性能。</p> <p>Without deformation of case or excessive looseness of electrical properties</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                  |                          |                  |             |                  |                          |            |   |          |  |  |   |           |        |                  |   |           |  |  |   |                 |                    |                |   |           |  |              |
| <div><div><p>速度: 75cm/min</p></div><table><tr><th>Parts</th><th>Temperature (°C)</th><th>Time at temperature(sec)</th><th>Treatments</th></tr><tr><td>A</td><td>NO - 150</td><td></td><td></td></tr><tr><td>B</td><td>150 - 180</td><td>90 ±30</td><td>Pre-heating zone</td></tr><tr><td>C</td><td>180 - 230</td><td></td><td></td></tr><tr><td>D</td><td>230 - 255 - 230</td><td>30 (Peak : 3 MAX.)</td><td>Soldering zone</td></tr><tr><td>E</td><td>230 to NO</td><td></td><td>Cooling zone</td></tr></table></div> |                  |                          |                  | Parts       | Temperature (°C) | Time at temperature(sec) | Treatments | A | NO - 150 |  |  | B | 150 - 180 | 90 ±30 | Pre-heating zone | C | 180 - 230 |  |  | D | 230 - 255 - 230 | 30 (Peak : 3 MAX.) | Soldering zone | E | 230 to NO |  | Cooling zone |
| Parts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Temperature (°C) | Time at temperature(sec) | Treatments       |             |                  |                          |            |   |          |  |  |   |           |        |                  |   |           |  |  |   |                 |                    |                |   |           |  |              |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NO - 150         |                          |                  |             |                  |                          |            |   |          |  |  |   |           |        |                  |   |           |  |  |   |                 |                    |                |   |           |  |              |
| B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 150 - 180        | 90 ±30                   | Pre-heating zone |             |                  |                          |            |   |          |  |  |   |           |        |                  |   |           |  |  |   |                 |                    |                |   |           |  |              |
| C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 180 - 230        |                          |                  |             |                  |                          |            |   |          |  |  |   |           |        |                  |   |           |  |  |   |                 |                    |                |   |           |  |              |
| D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 230 - 255 - 230  | 30 (Peak : 3 MAX.)       | Soldering zone   |             |                  |                          |            |   |          |  |  |   |           |        |                  |   |           |  |  |   |                 |                    |                |   |           |  |              |
| E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 230 to NO        |                          | Cooling zone     |             |                  |                          |            |   |          |  |  |   |           |        |                  |   |           |  |  |   |                 |                    |                |   |           |  |              |
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| WENZHOU HANJING ELECTRONICS CO., LTD.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              | 产品系列                                                                                                                                                                                                                                                                                          | 轻触开关  |
| TACT SWITCH SPECIFICATION<br>轻触开关产品承认书                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |                                                                                                                                                                                                                                                                                               |       |
| 5-4 寿命测试 LIFE TEST<br>无负载条件，每分钟 100-120 次的速度操作 50，000 次。<br>50，000cycles of operation at a rate of 100-120 cycles per minute with unloading<br>(1) 接触电阻 200 毫欧以下。Contact resistance200mΩ<br>(2) 动作力变化范围初始值 30%。Operating force 30% initial value.<br>(3) ITEM 项目——1.2<br>(4) ITEM 项目——1.3<br>(5) ITEM 项目——2.2                                                                                                                                                                                                                                                                                                                                   |              |                                                                                                                                                                                                                                                                                               |       |
| 5-5 盐雾 SAIL SPRA<br>1) 测试温度：35±2℃ Temperature：35±2℃<br>2)循环次数：8 小时喷雾 1 小时停，连续 3 次。喷雾 24 小时。Cycle:8 Hours testing(3Times) and 1 Hours stop. Based on total 24 hours.<br>3) 盐雾浓度：5±1% Salt solution concentration: 5±1% by weight.<br>(1) 接触电阻 200 毫欧以下。Contact resistance200mΩ.<br>(2) 绝缘电阻 100 兆欧以上。Insulation resistance 100MΩ min.<br>(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.                                                                                                                                                                                                                    |              |                                                                                                                                                                                                                                                                                               |       |
| 5-6 耐热试验 HEAT RESISTAN TEST<br>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。<br>80±2℃ for 96H, test after keeping in normal condition for 30min.<br>5-7 耐湿试验 MOISTURE RESISTANT TEST<br>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。<br>At 60±2℃ 90～95% RH for 96H, test after keeping in normal condition for 30min.<br>5-8 耐冷试验 COLD RESISTANT TEST<br>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。<br>At -40±2℃for 96H, test after keeping in normal condition for 30min.<br>5-9 温度交变试验 TEMPERATURE CYCLIG TEST<br>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。<br>According to following figure, after 5cycles, test after keeping in normal condition for 1H. |              | <br><br>(1) 接触电阻 200 毫欧以下。<br>Contact resistance 200mΩ.<br>(2) 绝缘电阻 100 兆欧以上。<br>insulation resistance 100MΩ min.<br>(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. |       |
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