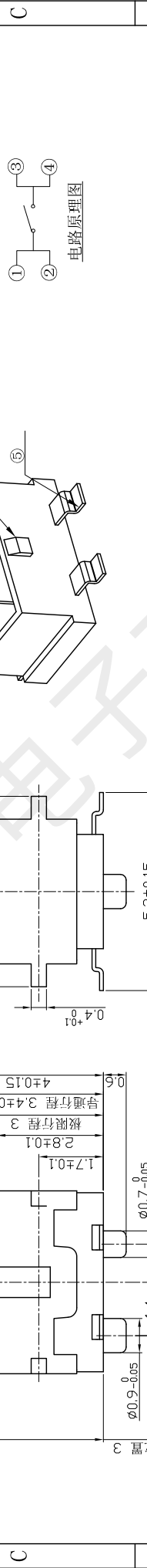
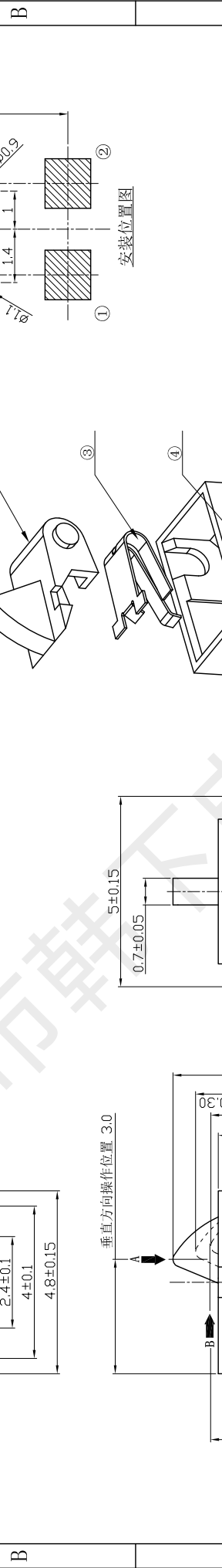
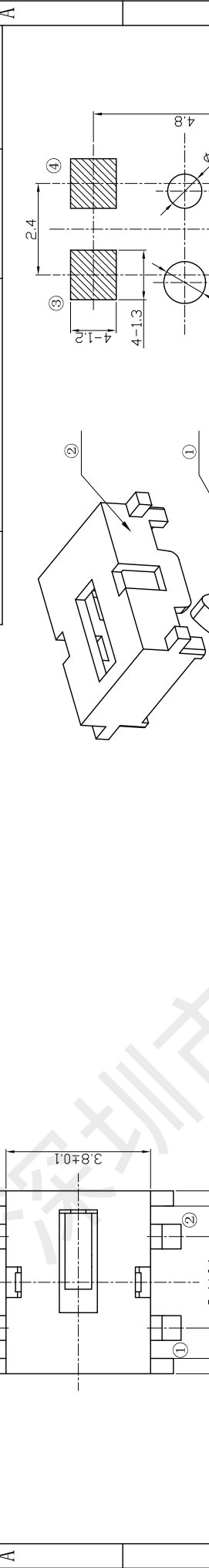


|    |   |         |   |            |   |
|----|---|---------|---|------------|---|
| 1  | 2 | 3       | 4 | 5          | 6 |
| 版本 |   | 更新内容    |   | 变更内容       |   |
| A1 |   | 更新图框、标注 |   | 日期         |   |
|    |   |         |   | 2021-09-17 |   |



|    |      |    |              |       |
|----|------|----|--------------|-------|
| ⑥  | 焊线脚  | 4  | 磷铜 t=0.10mm  | 镀银    |
| ⑤  | 底座   | 1  | LCP          | 黑色    |
| ④  | 弹片   | 1  | 镀青铜 t=0.07mm | 镀银    |
| ③  | 盖子   | 1  | PA46         | 黑色    |
| ②  | 按柄   | 1  | PA46         | 黑色    |
| ①  | 零件名称 | 数量 | 材质、规格        | 颜色\镀层 |
| 备注 |      |    |              |       |

**技术要求**

- 1、额定电压 :16V (DC)
- 2、额定电流 :0.5A
- 3、开关绝缘电阻 :≥50MΩ.
- 4、开关动作力 :20g±10g
- 5、开关的电气寿命要求 ≥20000次循环。
- 6、未注尺寸公差按GB/T1804-m级精度要求。

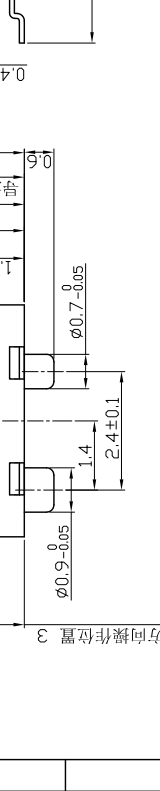
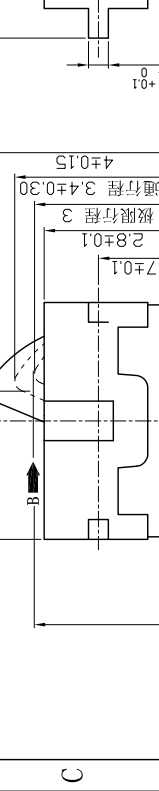
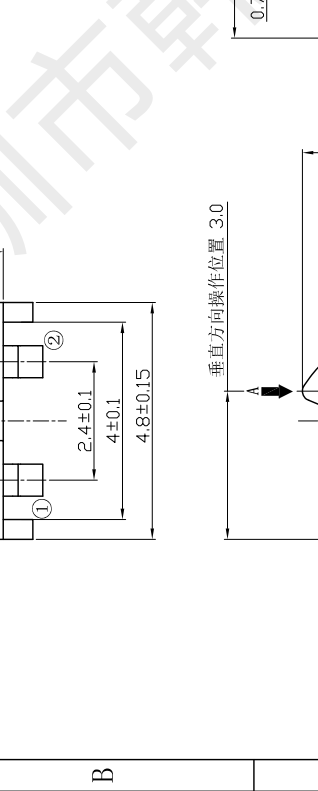
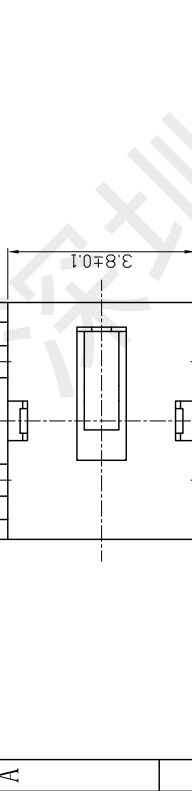
**深圳市韩下电子有限公司**

**限位开关**

**HX KFC-V-221-1**

|    |           |
|----|-----------|
| 设计 | 李春风       |
| 日期 | 2021-9-17 |
| 审核 | 钟华华       |
| 日期 | 2021-9-17 |
| 批准 | 罗孝金       |
| 日期 | 2021-9-17 |

版本:A1 单位:mm 比例:1:1



|    |      |    |              |       |
|----|------|----|--------------|-------|
| ⑥  | 焊线脚  | 4  | 磷铜 t=0.10mm  | 镀银    |
| ⑤  | 底座   | 1  | LCP          | 黑色    |
| ④  | 弹片   | 1  | 镀青铜 t=0.07mm | 镀银    |
| ③  | 盖子   | 1  | PA46         | 黑色    |
| ②  | 按柄   | 1  | PA46         | 黑色    |
| ①  | 零件名称 | 数量 | 材质、规格        | 颜色\镀层 |
| 备注 |      |    |              |       |



深圳市韩下电子有限公司

Shenzhen Hanxia Electronic Co., Ltd  
Tel: 0755-33819206 Fax: 0755-27597491

## 承 认 书

### SPECIFICATION FOR APPROVAL

客 户 Customer:

\_\_\_\_\_

产品名称 Project:

限位开关

\_\_\_\_\_

规格型号 Part No:

HX KFC-V-221-1

\_\_\_\_\_

#### 贵公司承认印 Approval signatures

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

日期 Date:

|             |     |  |
|-------------|-----|--|
| 拟制/Drawn    | 黄彬  |  |
| 审核/Check    | 张伟  |  |
| 批准/Approved | 罗小春 |  |



## 规格书 SPECIFICATION

### 1. 一般特性 General Characteristics

- 1.1 额定值(Rating Value): DC 16V 50mA
- 1.2 工作温度(Work Temperature Range):  $-30^{\circ}\text{C} \sim 85^{\circ}\text{C}$
- 1.3 存储温度(Store Temperature Range):  $-20^{\circ}\text{C} \sim 80^{\circ}\text{C}$
- 1.4 正常测试条件(未有特殊说明量测在以下条件进行):

General test condition (Tests and measurements shall be made under the following standard conditions unless otherwise specified):

正常温度:  $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$       相对湿度: 45%~85% RH      气压: 8,600~10,600 帕  
Temperature:  $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$       Relative humidity: 45%~85%      Air pressure: 8,600~10,600 pa

### 2. 产品外观及尺寸要求 Appearance & Dimension Requirement

- 2.1 产品外形结构紧凑,无配合不良。  
The structure of product is compact, and assembly of parts has no badness.
- 2.2 产品塑胶部件无严重缩水、披锋、欠注、斑点、破损或变形现象。  
The plastic parts of product have no serious defects such as very serious shrink, scarcity, fleck, disrepair, transmutation, etc.
- 2.3 产品引脚和外壳无严重氧化、脏污、变形、毛刺或电镀不良。  
Lead feet and shell have no serious defects such as oxidation, smudge, disrepair, burr, defects on plating.
- 2.4 开关操作顺畅,节奏感强,无明显卡塞现象。  
Operating switch is unhindered, rhythmmed, and there is not palpable clag.
- 2.5 产品结构及尺寸参见产品规格图纸。  
Construction and dimensions: Refer to individual product drawing.

### 3. 电气特性 Electronic Characteristics

| No. | 项目<br>Item                           | 测试方法<br>Test Method  | 测试设备<br>Equipment                     | 特性要求<br>Requirements  |
|-----|--------------------------------------|--|---------------------------------------|---|
| 3.1 | 接触电阻<br>Contact Resistance           | 在低电流 ( $\leq 100\text{mA}$ ) 条件下测试。<br>Measured at low current (100mA or less).  | 低电阻测试仪<br>Low Resistance Meter        | 200m $\Omega$ MAX   |
| 3.2 | 绝缘阻抗<br>Insulation Resistance        | 测试相邻引脚之间, 引脚与外壳之间的绝缘阻抗。<br>Measurement shall be made between adjacent terminals, between terminal and shell.   | 绝缘测试机<br>Insulation Resistance Tester | 50M $\Omega$ MIN  |
| 3.3 | 耐压测试<br>Dielectric Withstand Voltage | 输入一定电压 (50~60Hz, 电压值 AC 250V) 1 分钟, 漏电流为 2mA, 测试邻近端子间。<br>Apply certain voltage (50~60Hz, AC 250V) for 1 minute between adjacent contacts of the connector with 2mA leakage sensitivity. | 耐压测试机<br>Puncture Tester              | 没有绝缘破坏。<br>电弧等异常。<br>No arcing, break down and damaging insulation. |

## 4. 机械特性 Mechanical Characteristics

| No. | 项目<br>Item             | 测试方法<br>Test Method  | 测试设备<br>Equipment  | 特性要求<br>Requirements |
|-----|------------------------|--|--------------------|----------------------|
| 4.1 | 操作力<br>Operation Force | 逐渐施力操作开关按键，测量开关到达全部工作行程时所需的最大操作力度。<br>Operate the keystroke of the switch and then increase press strength gradually, Measured maximum operation force while the travel of the switch is full. | 测力计<br>Force Gauge | 20±10gf              |

## 5. 可靠性测试 Reliability trial

| No. | 项目<br>Item                           | 测试方法<br>Test Method  | 测试设备<br>Equipment    | 特性要求<br>Requirements  |
|-----|--------------------------------------|--|----------------------|---|
| 5.1 | 可焊性试验<br>Solder ability Test         | 端子顶部被浸入焊锡炉中，温度为 260±5℃，时间 5±1 秒。<br>The top of the terminals shall be dipped in the solder bath at 260±5℃ for 5±1 seconds.   | 控温锡炉<br>Solder Stove | 引脚至少 95%上锡。<br>Ninety-five percent of terminals shall be dipped.  |
| 5.2 | 寿命试验<br>Operation Life               | 开关在寿命试验设备上以约 90 次 / 分的速度连续被操作，具体次数见规格图示。<br>Switch shall be operated continuously at about 90 cycles /min without load.  | 寿命试验机<br>Life Tester | 寿命:20000 次<br>实验后:<br>绝缘电阻: 10MΩ Min<br>操作力: 变化在±50%内开关外观及结构无损坏。<br>Life test:20000 cycles<br>After test, Insulation resistance:10MΩ Min<br>Operating force: Change should be within ±50% of specified value.<br>No abnormalities shall be recognized in appearance and construction. |
| 5.3 | 耐焊接热<br>Resistance to Soldering heat | 端子焊接部分浸入焊炉，焊炉温度 260± 5℃，焊接时间 5±1 秒。(焊接时不可于端子施加外力)。<br>Terminals shall be dipped in the solder bath at 260±5℃ for 5±1 seconds without additional force for terminals. | 控温锡炉<br>Solder Stove | 本体无变形，能满足于机械、电气性能。<br>Appearance should be not damaged, electrical and mechanical characteristics shall be satisfied.   |

## 5. 可靠性测试 Reliability trial

| No. | 项 目<br>Item                          | 测试方法<br>Test Method   | 测试设备<br>Equipment                              | 特 性 要 求<br>Requirements   |
|-----|--------------------------------------|---|--|---|
| 5.4 | 耐高温测试<br>Resistance to Heat Test     | 放置在温度 $80\pm 2^{\circ}\text{C}$ 环境中 96 小时后，再置于正常条件下 1 小时后测定。<br>The switch shall be stored at a temperature of $80\pm 2^{\circ}\text{C}$ for 96 hours, Measurements shall be made after it be subjected to the standard conditions for 1 hour.  | 高低温试验机<br>High & Low Temperature Tester        | 外观，机械及电气性能均符合要求。<br>Appearance, electrical and mechanical characteristics shall be satisfied. |
| 5.5 | 耐低温测试<br>Resistance to Cold Test     | 放置在温度 $-20\pm 2^{\circ}\text{C}$ 环境中 96 小时后，再置于正常条件下 1 小时后测定。<br>The switch shall be stored at a temperature of $-20\pm 2^{\circ}\text{C}$ for 96 hours, Measurements shall be made after it be subjected to the standard conditions for 1 hour.  | 高低温试验机<br>High & Low Temperature Tester        | 外观，机械及电气性能均符合要求。<br>Appearance, electrical and mechanical characteristics shall be satisfied. |
| 5.6 | 耐湿性测试<br>Resistance to Humidity Test | 放置于温度 $40\pm 2^{\circ}\text{C}$ ，相对湿度为 $90\sim 96\%$ 环境中 96 小时后，再置于正常条件下 1 小时后测定(注意要擦去水滴)。<br>The switch shall be stored at a temperature of $40\pm 2^{\circ}\text{C}$ , relative humidity $90\sim 96\%$ for 96 hours, Measurements shall be made after it be subjected to the standard conditions for 1 hour (Wipe out water drip).  | 恒温恒湿箱<br>Temperature & Humidity Tester Chamber | 外观，机械及电气性能均符合要求。<br>Appearance, electrical and mechanical characteristics shall be satisfied. |
| 5.7 | 盐雾实验<br>Salt Mist Test               | 试件在下述实验后测量：<br>1. 温度： $35\pm 5^{\circ}\text{C}$<br>2. 盐溶液浓度： $5\pm 1\%$ （质量百分比），<br>3. 试验时间：24 小时，<br>4. 试验后，将盐沉积物用水冲掉。<br>The switch shall be checked after following test:<br>1. Temperature: $35\pm 5^{\circ}\text{C}$<br>2. Salt solution: $5\pm 1\%$ (Solids by mass)<br>3. Duration: 24 hours,<br>4. After immersing, salt deposit shall be removed by running water. | 盐雾试验机<br>Salt Spray Tester                     | 在金属件上没有严重腐蚀斑点。<br>No remarkable corrosion shall be recognized in metal parts.                 |