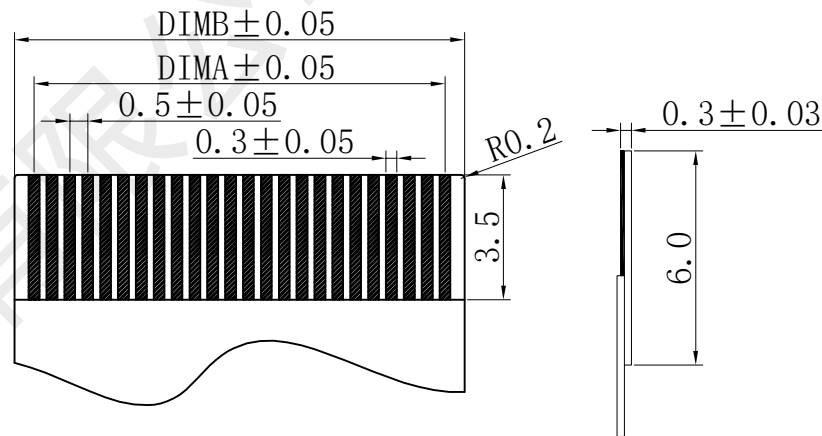
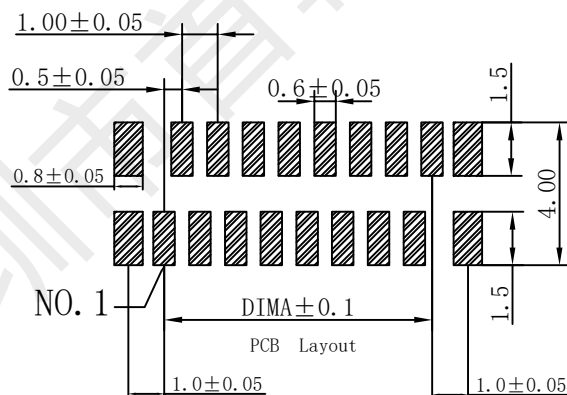
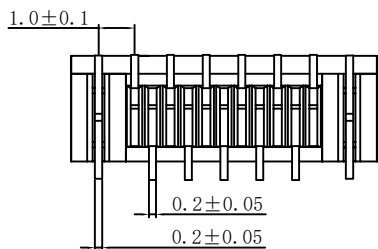
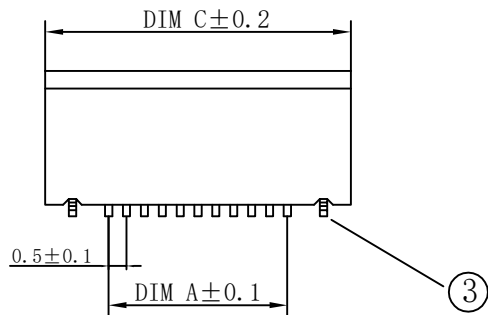
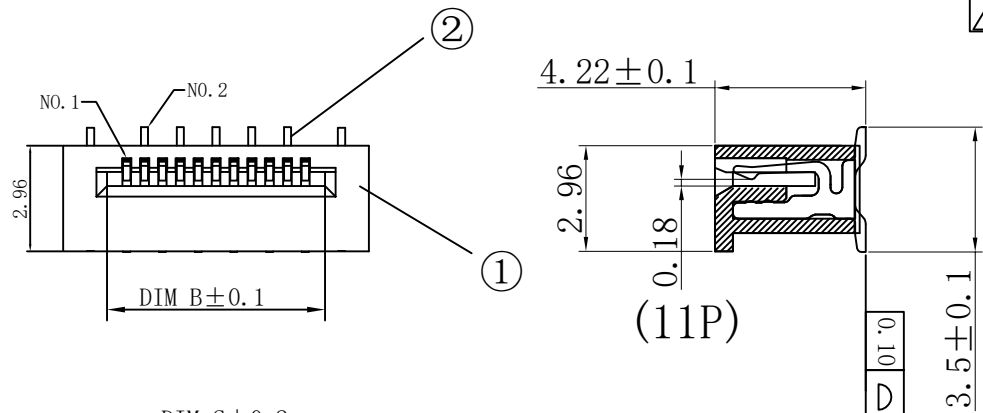


| 版次 | 变更内容 | 申请人 | 发行日期 | 序号 | 品名     | 材质             |
|----|------|-----|------|----|--------|----------------|
| △  |      |     |      | ①  | 0.5C胶芯 | LCP UL94V-0 本色 |
|    |      |     |      | ②  | 0.5C端子 | 磷青铜/表面镀锡       |
|    |      |     |      | ③  | 0.5C焊片 | 磷青铜/表面镀锡       |



技术指标:

1. 额定电流: 0.5A
2. 温度范围: -25~85℃
3. 额定电压: 50V, AC/DC (等效)
4. 接触电阻: ≤0.03Ω
5. 绝缘电阻: ≥500MΩ

| CKT | DIMA | DIMB  | DIMC  | CKT | DIMA  | DIMB  | DIMC  |
|-----|------|-------|-------|-----|-------|-------|-------|
| 4   | 1.50 | 2.60  | 5.05  | 21  |       |       |       |
| 5   |      |       |       | 22  | 10.50 | 11.60 | 14.05 |
| 6   | 2.50 | 3.60  | 6.05  | 23  |       |       |       |
| 7   |      |       |       | 24  | 11.50 | 12.60 | 15.05 |
| 8   | 3.50 | 4.60  | 7.05  |     |       |       |       |
| 9   |      |       |       |     |       |       |       |
| 10  | 4.50 | 5.60  | 8.05  |     |       |       |       |
| 11  | 5.00 | 6.10  | 8.55  |     |       |       |       |
| 12  | 5.50 | 6.60  | 9.05  |     |       |       |       |
| 13  |      |       |       |     |       |       |       |
| 14  | 6.50 | 7.60  | 10.05 |     |       |       |       |
| 15  |      |       |       |     |       |       |       |
| 16  | 7.50 | 8.60  | 11.05 |     |       |       |       |
| 17  |      |       |       |     |       |       |       |
| 18  |      |       |       |     |       |       |       |
| 19  |      |       |       |     |       |       |       |
| 20  | 9.50 | 10.60 | 13.05 |     |       |       |       |

一般公差  
TOLERANCES  
X. ±0.15 .XX±0.05  
.X±0.1 .XXX±0.02  
ABGKES±1°

|                                   |                 |                  |               |
|-----------------------------------|-----------------|------------------|---------------|
| 品名 (TITLE)<br>FPC 0.5-8P LTH4.0-A |                 | 制图 (DR)<br>李春风   |               |
| 文件号 (Document No)                 |                 | 审核 (CHKD)<br>钟华华 |               |
| 比例 (SCALE)<br>1 : 1               |                 | 核准 (APPD)<br>罗孝金 |               |
| 单位 (UNITS)<br>mm                  | 张数 (SHEET)<br>1 | 尺寸 (SIZE)<br>M   | 版本 (REV)<br>A |



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:

FPC

规格型号 Part No:

FPC 0.5-8P LTH4.0-A

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 |                                                                                      |



## 产品规范

### 1. SCOPE[适用范围]

This specification covers the 0.5PH 4.0H Verticalon FPC series.

(本规范适用于 0.5mm 间距 4.0 高度立式FPC 系列产品.)

### 2. CONNECTOR DIMENSIONS SEE ATTACHED DRAWING

(外观尺寸请参照图面)

### 3. MATERIALS(材料):

- A. Housing (主体) : Thermoplastic Without Halogen, UL94V-0,Color: Nature;
- B. Cover (后盖) : Thermoplastic Without Halogen, UL94V-0,Color: Black;
- C. Contact (端子) : Copper Alloy, Gold or Tin plating over Nickel under plating Overall.
- D. Peg (焊片) : Copper Alloy, Tin Plating over Nickel under plating overall.

### 4. RATINGS[额定标准值]

| Item[项目]                       | Standard[规格]                                                                  |
|--------------------------------|-------------------------------------------------------------------------------|
| Operating Voltage (最大容许电压)     | 50VAC                                                                         |
| Current Rating (最大容许电流)        | 0.5ADC                                                                        |
| Operating Temperature (使用温度范围) | -25℃~+85℃ (包括产品电流通过所产生的温度)<br>-25℃~+85℃ (Including Terminal Temperature Rise) |

### 5. TEST CONDITION[实验条件]

The test and measurement, unless otherwise specified, shall be carryout at a temperature of 15 to 35℃, Relative humidity of 25 to 85%,and atmospheric pressure of 86 to 106KPa. However, when any doubt arises on the judgment value under it, the test and measurement shall be carry out at a temperature of 20±2℃, relative humidity of 60 to 70%, and atmospheric pressure of 86 to 106KPa.

[除特殊说明之外，一般试验及测试将于温度 15 ~ 35℃，相对湿度 25~85%，大气压力 86~106 KPa 之条件下完成，但若于上述条件下有任何影响判定值的疑虑，可考虑在温度 20±2℃，相对湿度 60~70%及大气压力 86~106 KPa 之条件下完成试验。]



## 产品规范

### Test Requirements and Procedures Summary 测试要求和程序摘要。

| Item(项目)                          |                                          | TEST CONDITION (测试条件)                                                                                                                              | Procedure(规格)                                                                                                                        |
|-----------------------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 1                                 | Examination of Product<br>(产品检验)         | Visual inspection.<br>(外观检验)                                                                                                                       | Meets requirements of Product drawing, NO Breakdown<br>符合图面要求，目视外观无任何损坏异状                                                            |
| Electrical Requirement (电气特性)     |                                          |                                                                                                                                                    |                                                                                                                                      |
| 2                                 | Contact Resistance<br>(接触阻抗)             | Mate applicable FPC and measure by dry circuit 20mV Max,10mA<br>(将样品与 FPC 连接，测试电压 20mV，限电流 10mA 进行阻抗测试)                                            | 30m Ohm Max<br>(30m Ohm 最大)                                                                                                          |
| 3                                 | Dielectric withstanding Voltage<br>(耐电压) | [500]VAC for 1 minute<br>Test between adjacent circuits of unmated connector.(将样品与 FPC 连接，相邻端子间可以承受 500VAC 1 分钟)                                   | NO Breakdown<br>(目视外观无任何损坏异状)                                                                                                        |
| 4                                 | Insulation Resistance<br>(绝缘阻抗)          | [500]VAC for 1 minute<br>Test between adjacent circuits of unmated connector.(将样品与 FPC 连接，提供相邻端子间测试电压 500VAC 进行绝缘阻抗测试)                             | 500 M Ohm Min.<br>(500M Ohm 最小)                                                                                                      |
| MECHANICAL CHARACTERISTICS (机械特性) |                                          |                                                                                                                                                    |                                                                                                                                      |
| 5                                 | Contact/Peg Retention Force<br>(保持力)     | Apply axial pull out force at the rate of [25.4±3]mm/min on the terminal assembled in the housing.<br>(端子与 PEG 插进主体水平方向拔出力量)                       | 0.150kgf Min.<br>(0.150kgf 最小)                                                                                                       |
| 6                                 | FPC/FFC Retention Force<br>(FPC/FFC 保持力) | 0.030kgf/Pin Min.(PIN≥13)<br>0.040kgf/Pin Min.(PIN<13)<br>(片数大于等于 13PIN 时 FFC/FPC 每 PIN 保持力 0.030kg 以上，片数小于 13PIN 时 FFC/FPC 每 PIN 保持力 0.040kg 以上。) | Operation Speed:[25.4±3] mm/min Measure the force required to unmated connector.<br>(将盖子盖上，与 FPC 连接后以操作速度每分钟 25.4±3mm 进行 FPC 保持力测试。) |



## 产品规范

|    |                                                 |                                                                                                                                                                                                                                                                     |                                                        |                                                                            |
|----|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|----------------------------------------------------------------------------|
| 7  | Durability<br>(耐久性)                             | Operation Speed: (10) cycle-max./min Durability Cycles: 20 Cycles<br>操作速度: 10 次最大每分钟<br>耐久次数: 20 次                                                                                                                                                                  | Contact Resistance:<br>50m Ohm Max<br>接触阻抗: 50m Ohm 最大 |                                                                            |
| 8  | Vibration<br>(振动试验)                             | Amplitude: 1.52m; Frequency:<br>10~55~10HZ; Vibration time:2 hours<br>for 3 axis total 6 hours.<br>(振幅: 1.52mm; 振动频率: 10~55~10HZ;<br>振动时间: X、Y、Z 轴各 2 小时)                                                                                                           | Appearance<br>(外观)                                     | No damage<br>(不可破坏)                                                        |
|    |                                                 |                                                                                                                                                                                                                                                                     | Contact Resistance<br>(接触阻抗)                           | 50mOhm Max<br>(50mOhm 最大)                                                  |
|    |                                                 |                                                                                                                                                                                                                                                                     | Discontinuity<br>(断电时间)                                | 1u sec. Max.                                                               |
| 9  | Mechanical Shock<br>(冲击试验)                      | The connectors shall be soldered on the P.C. board. /Acceleration: 50G. Time: 11ms.(half sine wave). Cycle: 3 cycle for 3 axis total 9 cycle.<br>(FPC 焊接于 PC 板上, /加速度: 50G.)<br>(冲击作用时间: 11ms.)<br>[冲击次数: X、Y、Z 轴各 3 次 (共 9 次)]<br>{JIS C0041/MIL-STD-202Method213} | Appearance<br>(外观)                                     | No damage<br>(不可破坏)                                                        |
|    |                                                 |                                                                                                                                                                                                                                                                     | Contact Resistance<br>(接触阻抗)                           | 50mOhm 最大                                                                  |
|    |                                                 |                                                                                                                                                                                                                                                                     | Discontinuity<br>(断电时间)                                | 1u sec. Max.                                                               |
| 10 | Temperature Rising<br>(温升)                      | Mate applicable FPC and measure the temperature rise of contact when the maximum AC mated current is. (量测通过 FPC 最大容许电流时, 样品接触之温升)                                                                                                                                   | Temperature Rising<br>(温升)                             | 30℃ Max<br>30℃ 以下                                                          |
| 11 | Solder ability<br>(焊锡性)                         | Tip of Solder tails and fitting nails into the molten solder(held at 245 ±5℃) up to 0.1mm from the bottom of the housing for 3±0.5sec                                                                                                                               | Solder wetting<br>(湿润性)                                | 95%of immersed area must show no voids, Pinholes(焊接覆盖面积必须有 95%以上, 不得有漏焊现象) |
| 12 | Resistance to Reflow Soldering Heat<br>(回焊高温测试) | Pre Heat:150~180℃,90±30sec.<br>Heat: 230℃ Min.,30±10sec<br>Peak Temp.: <u>260+0/-5℃</u> , 10sec. Or less<br>Duration: 2 cycles<br>Refer to Fig.4                                                                                                                    | Appearance<br>(外观)                                     | No damage<br>(不可破坏)                                                        |

## 产品规范

|    |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                 |                     |
|----|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|---------------------|
| 13 | Thermal Shock<br>(热冲击试验)              | <p>Temperature range form <math>-55^{\circ}\text{C}</math> to <math>+85^{\circ}\text{C}</math> .Start from <math>-55^{\circ}\text{C}</math> ,after 30 min. Change to <math>+85^{\circ}\text{C}</math> ;chang time is no more than 30 seconds. Total 5 cycles.</p> <p>温度变化范围: <math>-55^{\circ}\text{C} \sim +85^{\circ}\text{C}</math>; 从<math>-55^{\circ}\text{C}</math>开始, 30 分钟换到<math>+85^{\circ}\text{C}</math>; 转换时间不超过 30 秒; 共 5 个循环。</p> <p>{MIL-STD-202, 方法 107D,条件 A}</p> | Appearance<br>(外观)              | No damage<br>(不可破坏) |
|    |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Contact Resistance<br>(接触阻抗)    | 50 m Ohm 最大         |
| 14 | Humidity-Temperature Cycle<br>(耐湿性试验) | <p><math>40 \pm 2^{\circ}\text{C}</math> in temperature and 90~95%RH for 96 hours.</p> <p>After testing connector shall be left alone for 1 to 2 hours in a room ambient.</p> <p>[温度 <math>40 \pm 2^{\circ}\text{C}</math>, 相对湿度 90~95%, 持续 96 小时。经试验后, 连接器须于室温中放置 1~2 小时, 再测定其值。]</p> <p>{EIA-364-31A, Method II, condition A}</p>                                                                                                                                                 | Appearance<br>(外观)              | No damage<br>(不可破坏) |
|    |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Contact Resistance<br>(接触阻抗)    | 50 m Ohm 最大         |
|    |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Insulation Resistance<br>(绝缘阻抗) | 500 m Ohm Min       |
| 15 | Temperature Life<br>(恒温恒湿试验)          | Mated, Connector<br>$85^{\circ}\text{C}$ , 250 hours,                                                                                                                                                                                                                                                                                                                                                                                                                               | Contact Resistance<br>(接触阻抗)    | 50 m Ohm 最大         |
| 16 | Salt Spray<br>(盐水喷雾试验)                | <p>Salt concentration: 5%/<br/>Temperature: <math>35 \pm 2^{\circ}\text{C}</math> ,Testing time: <math>24 \pm 2</math> hours, After salt is removed by running water and a dropis removed, it is measured.</p> <p>(盐水比重: 5% / 温度: <math>35 \pm 2^{\circ}\text{C}</math>)<br/>(试验时间: <math>24 \pm 2</math> 小时, 用清水将残留盐份清洗并将水滴清除后, 才可测量。)</p> <p>{EIA-364-26A, Condition A}</p>                                                                                                       | Appearance<br>(外观)              | No damage<br>(不可破坏) |
|    |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Contact Resistance<br>(接触阻抗)    | 50 m Ohm 最大         |

Figure 1 (End)



## 产品规范

### 6.CONNNECTOR TESTS AND SEQUENCES (测试顺序)

| Test or Examination                      | Test Group        |      |      |      |      |      |      |      |      |      |
|------------------------------------------|-------------------|------|------|------|------|------|------|------|------|------|
|                                          | A                 | B    | C    | D    | E    | F    | G    | H    | I    | J    |
|                                          | Test Sequence (a) |      |      |      |      |      |      |      |      |      |
| Examination of Product<br>(产品检验)         | 1, 7              | 1, 9 | 1, 6 | 1, 5 | 1, 5 | 1, 5 | 1, 5 | 1, 3 | 1, 3 | 1, 3 |
| Contact Resistance (接触阻抗)                |                   | 2, 8 | 2, 5 | 2, 4 | 2, 4 | 2, 4 | 2, 4 |      |      |      |
| Dielectric withstanding<br>Voltage (耐电压) | 3, 6              |      |      |      |      |      |      |      |      |      |
| Insulation Resistance<br>(绝缘阻抗)          | 2, 5              |      |      |      |      |      |      |      |      |      |
| Contact/ Peg Retention<br>Force (保持力)    |                   | 3, 7 |      |      |      |      |      |      |      |      |
| FPC/FFC Retention Force<br>(FFC/FPC 保持力) |                   | 4, 6 |      |      |      |      |      |      |      |      |
| Durability (耐久性)                         |                   | 5    |      |      |      |      |      |      |      |      |
| Vibration (振动试验)                         |                   |      | 3    |      |      |      |      |      |      |      |
| Mechanical Shock (冲击试验)                  |                   |      | 4    |      |      |      |      |      |      |      |
| Temperature Rising (温升)                  |                   |      |      |      |      |      |      | 2    |      |      |
| Solder ability (焊锡性)                     |                   |      |      |      |      |      |      |      |      | 2    |
| Resistance to Soldering<br>Heat (回焊高温测试) |                   |      |      |      |      |      |      |      | 2    |      |
| Thermal Shock (热冲击试验)                    |                   |      |      | 3    |      |      |      |      |      |      |
| Humidity Temperature<br>Cycling (耐湿性试验)  | 4                 |      |      |      | 3    |      |      |      |      |      |
| Temperature Life<br>(恒温恒湿试验)             |                   |      |      |      |      | 3    |      |      |      |      |
| Salt Spray(盐水喷雾试验)                       |                   |      |      |      |      |      | 3    |      |      |      |

Figure 2

Figure 3. Contact Resistance

产品规范

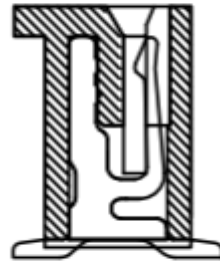


FIGURE 4. RESISTANCE TO FLOW SOLDER HEAT

