

**1. 适用范围 Scope:**

此作业规范适用于: FPC PITCH 1.0 卧式 NO-ZIF SMT 系列

This product specifications is applied for: 1.0mm PITCH FPC CONN. NO-ZIF R/A SMT TYPE

与 FPC/FFC 连接方式 Connected to the FPC/FFC : NO-ZIF

FPC/FFC 适合厚度 FPC/FFC is suitable for thickness : 0.30±0.03mm

**2. 关联规格 Related specifications:**

EIA-364 : 电子连接器及接插件测试程序 Electronic connectors and connector test procedure

UL STD-94 : 关于塑材设备零配件及器材阻燃性测试规范 On the plastic material and equipment spare parts and equipment flame retardancy test specification

**3. 构造 尺寸 材料 Configurations dimensions and materials :**

参见结构图 Reference the drawing.

序号 No.	部 位 Position	原材料供应商 material suppliers	材料名/T y p e 名 Materials	防火等级 FLAME CLASS	UL 编号 FILE NO.
1	主体 (HOUSING)	宝理 POLYPLASTICS CO., LTD	LCP 473i Black	94V-0	E106764

**4. 标准状态:**

4.1 额定电压 Rating voltage: AC/DC 50V

4.2 额定电流 Rating current: 1.0A

4.3 温湿度范围 Temperature and humidity range

4.3.1 使用温度范围 operation temperature: -20℃~+85℃;

4.3.2 储存温度范围 storage temperature: -20℃~+85℃;

4.3.3 开封使用温度范围 Kaifeng temperature range: +5℃~+35℃;

开封使用湿度 Kaifeng Humidity 60%RH MAX.;

4.3.4 保存湿度范围: 相对湿度 45~80%RH; Keep humidity range: Relative humidity 45~80%RH;

**5. 性能 Performance**
**5.1 构造 Structure**

序号 NO.	项 目 Item	测试方法 Test conditions	规格要求 Specifications
1	外观 Appearance	目视 Visual	无损坏 No physical damage

**5.2 电气性能 Electrical Performance**

序号 NO.	项 目 Item	测试方法 Test conditions	规格要求 Specifications
1	接触阻抗 Contact Resistance	适配 FFC 标准线, 开放电压: 20mV 以下, 短路电流: 10mA 以下 Mate applicable FPC, measure by dry circuit, 20mV MAXIMUM, 10mA MAXIMUM	30mΩ Max.
2	绝缘阻抗 Insulation Resistance	相邻端子间 DC 500V, 1 分钟。 DC 500V between adjacent terminals, 1 minutes	100MΩ Min.
3	耐电压 Dielectric withstanding voltage	相邻端子间 AC 500V, 感度电流 2mA, 1 分钟。 AC 500V between adjacent terminals, sensitivity of current 2mA, 1 minutes	无击穿, 无短路 No Breakdown.
4	温度上升 Temperature rise	端子在额定电压·电流下工作时测量端子上升的温度 The rising temperature measurement terminal at rated current under.	30℃ max

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This product does not contain SS-00259 and ROHS banned the use of environmental substances

制 品 仕 样 书 Product specification	Part name	1.0mm PITCH FPC CONN. NO-ZIF R/A SMT TYPE			
Amphenol Aorora Technology (Huizhou) Co.,Ltd	Part No.	F518-1A7A1-110**	1/4		
Document No. : IS.EQC.005	Date: 2017/2/27	Rev. : C	Written by: May	Checked by: Rain	Approved by: Hongkui.Liu

### 5.3 机械性能 Mechanical performance

序号 NO.	项目 Item	测试方法 Test conditions	规格要求 Specifications
1	FFC/FPC 拔出力 Withdrawal force	FFC 插入 FPC 连接品后, 以 25~100mm/分匀速垂直拔出, 此动作重复三次后, 第四次才作测量资料的记录。 FFC insert the FPC connection with a 25~100mm/ product, uniform vertical pull, this action is repeated three times, fourth times for measurement data records.	30gf/pin MIN.
2	FFC/FPC 插入力 Insertion force	FFC 以 25~100mm/分匀速垂直插入 FPC FFC vertically inserted at a constant speed to 25 to 100 mm/min FPC	3000gf MAX
3	端子保持力 Terminal Retention Force	将端子 25~100mm/分匀速垂直从胶芯槽内拔出 Apply axial pull out force on the terminal assembled in the housing at the speed rate of 25~100mm per minute.	300gf/terminal MIN.
4	固定片保持力 Anchor-Plate Retention Force	将固定片 25~100mm/分匀速垂直从胶芯槽内拔出 Apply axial pull out force on the Anchor-Plate assembled in the housing at the speed rate of 25~100mm per minute.	300gf/terminal MIN.
5	插拔耐久性 Durability	以下动作进行 30 次巡回: FFC 插入、FFC 拔出 Following actions to 30 times tour: FFC insert, FFC pull out	接触阻抗 Contact Resistance: 40mΩ MAX 无变形 no deformation 插入力 Insertion force: 3000gf MAX 拔出力 Withdrawal force: 30gf/pin MIN

### 5.4 环境性能和其它 Environmental Performance and Others

序号 NO.	项目 Item	测试方法 Test conditions	规格要求 Specifications
1	耐振性 Vibration	配合合适的 FPC, 按以下条件, X、Y、Z 方向各 2 小时, 共 6 小时在测试过程中通过直流 1mA, 振幅 1.5mm, 频率 10-55-10Hz/分。 Mate applicable FPC, according to the following conditions, X, Z, Y direction of each 2 hours, a total of 6 hours passing DC 1mA during the test. Amplitude : 1.5mm P-P Frequency : 10-55-10 Hz Shall be traversed in 1 minute.	接触阻抗初始规格值 2 倍以下 Contact impedance value 2 times the initial specifications.
2	耐冲击性 Shock	配合合适的 FPC, 按以下条件, X、Y、Z 方向各 11ms, 各 3 回, 共 18 回, 在测试过程中通过直流 1mA, 加速度 490m/s <sup>2</sup> , Mate applicable FPC, according to the following conditions, X, Z, Y direction of the 11ms, the 3 times, a total of 18 times during the test process by DC 1mA. Test pulse : Half Sine Peak value : 490m/s <sup>2</sup> {50G} Duration : 11 milliseconds	不连续导通 1μs 以内; Not even the conduction within 1 μs 外观无异常 No abnormal appearance
3	耐寒性 Cold Resistance	配合合适的 FPC, -25±3℃中放置时间 96H 后取出, 1~2 小时常温放置后进行测试。 Mate applicable FPC, after -25±3℃, the time of 96H was removed, and the test was conducted at room temperature for 1~2 hours.	1. 接触阻抗: 30mΩ Max. 2. 绝缘阻抗: 100 MΩ Min. 3. 耐电压: 无击穿, 短路 4. 外观: 无异常
4	耐热性 Heat Resistance	配合合适的 FPC, 85 ± 2℃中放置时间 96H 后取出, 1~2 小时常温放置后进行测试。 Mate applicable FPC, after 85±2℃, the time of 96H was removed, and the test was conducted at room temperature for 1~2 hours.	1. Contact Resistance: 30mΩ Max. 2. Insulation Resistance : 100 MΩ Min.
5	耐湿性 Humidity	配合合适的 FPC, 40±3℃、相对湿度 90~95%中放置时间 96H 后取出, 1~2 小时常温放置后进行测试。 Mate applicable FPC, 40±3℃, relative humidity 90~95% in the time of 96H after removal, 1~2 hours after room temperature for testing.	3. Dielectric withstanding voltage: No Breakdown. 4. No abnormal appearance

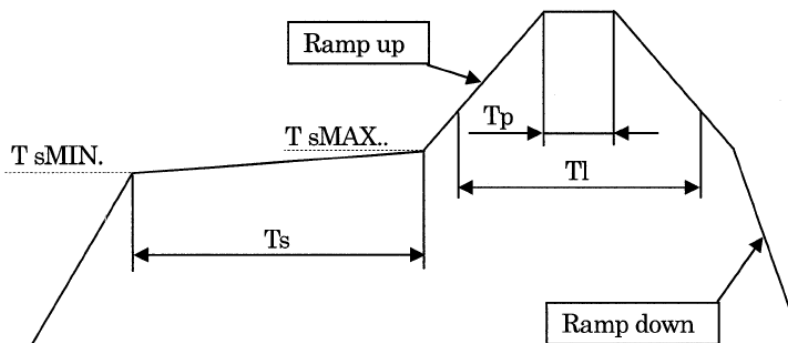
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Amphenol Aorora Technology (Huizhou) Co.,Ltd	Part No.	F518-1A7A1-110**	2/4		
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序号 NO.	项目 Item	测试方法 Test conditions	规格要求 Specifications
6	盐雾试验 Salt Spray	配合合适的FPC, 温度 $35 \pm 2^\circ\text{C}$ ; 盐水比重 $5 \pm 1\%$ 喷雾试验 48H, 试验后常温水洗干净干燥后进行测试。 Temperature suitable FPC, $35 \pm 2^\circ\text{C}$ ; 5 plus or minus 1% of the total salt spray test 48 h, normal temperature after washing dry test after test	1. 接触阻抗: $30\text{m}\Omega$ Max. 2. 绝缘阻抗: $100\text{M}\Omega$ Min. 3. 耐电压: 无击穿, 短路 4. 外观: 无异常
7	冷热冲击 Thermal Shock	配合合适的FPC, $-55 \pm 3^\circ\text{C}$ ; $85 \pm 2^\circ\text{C}$ 的温度下各放置 30 分钟, 共进行 5 次循环 Mate applicable FPC, $-55 \pm 3^\circ\text{C}$ , $85 \pm 2^\circ\text{C}$ , 30 minutes, 5 cycles were performed. 1: $-55^\circ\text{C}$ 30 minutes 2: $+85^\circ\text{C}$ 30 minutes	1. Contact Resistance: $30\text{m}\Omega$ Max. 2. Insulation Resistance : $100\text{M}\Omega$ Min. 3. Dielectric withstanding voltage: No Breakdown. 4. No abnormal appearance
8	沾锡性 Solderability	端子焊脚和固定片前端 0.3mm, 沾锡温度 $245 \pm 5^\circ\text{C}$ (Sn: Lead Free); 时间 $3 \pm 0.5\text{s}$ Terminal welding feet and fitting nail front 0.3mm, soldering temperature $245 \pm 5^\circ\text{C}$ (Sn: Lead Free); time $3 \pm 0.5\text{s}$	吃锡饱满, 在 95% 以上 95% of immersed area must show no voids, pin holes
9	Reflow 耐热性	预备加热时间 Pre-heating time: $170^\circ\text{C} \sim 190^\circ\text{C}$ 60~180s. 焊锡温度时间 Soldering Temperature Time: $260^\circ\text{C}$ 10sMAX.	共面度 $0.10\text{mm}$ Max. 外观无异常, Coplanar degree $0.10\text{mm}$ Max. No abnormal appearance.
10	Whisker (Tin 镀锡品)	过 reflow 后插入 FPC, 放置 500H, 观察 WHISKER 的长度 Insert FPC after reflow, place 500H, observe the length of Whisker	100um max

**Reflow Condition:**

Profile Feature	Lead-free Eutectic Assembly
温度上升 Ramp up Rate (T <sub>S</sub> max to T <sub>p</sub> )	: $1 \sim 4^\circ\text{C}/\text{S}$
<b>. Pre-heat</b> T <sub>s</sub> MIN. T <sub>s</sub> MAX. Time (T <sub>s</sub> MIN. TO T <sub>s</sub> MAX.)	: $170^\circ\text{C}$ MIN : $190^\circ\text{C}$ MAX : 60~180S
<b>T<sub>1</sub></b> 温度 (temperature) 时间 (time)	: $225^\circ\text{C}$ MIN : 60~150S
<b>T<sub>p</sub> (Peak)</b> 温度 (temperature) 时间 (time)	: $260^\circ\text{C}$ MAX ( $255^\circ\text{C}$ MIN.) : 10S MAX



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## 6. 包装 Packaging

参考包装图 Refer to the packing figure

## 7. 修改内容 Change content

版本 Rev.	改正日期 Modify date	改正内容 Modifications	Written by	Checked by
A	2014/08/11	New	Enhai.he	Roy
B	2015/12/25	FFC 拔出力更新为 30gf/MIN 。 FFC output updated to pull 30gf/MIN	May	Rain, Roy
C	2017/02/27	修正接触电阻参数, 焊锡温度条件。 Modify contact resistance parameters , Soldering temperature condition	May	Rain

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