

1. Scope of application 适用范围:

This job specification is applicable to: FPC pitch 0.50MM/1.0mm NON-ZIF VERTICAL SMT TYPE

此作业规范适用于: FPC pin 距 0.50 及 1.0 立式 NON-ZIF SMT 系列

FPC is suitable for thickness:0.30±0.03MM

FPC 适用厚度: 0.30±0.03MM

2. The related specifications:关联规格:

EIA - 364: electronic connectors and connector test procedure.

EIA-364 :电子连接器及接插件测试程序.

UL STD - 94: about plastic material equipment spare parts and equipment fire retardant test specification.

UL STD-94 :关于塑材设备零配件及器材阻燃性测试规范.

3. The structure, size, material

构造, 尺寸, 材料

3.1 See the chart. 参见结构图.

No	Parts 部 位	Raw material suppliers 原材料供应商	Material name/Type name 材料名/品名	FLAME CLASS 防火等级	FILE NO. 文件编号
1	主体 (HOUSING)	宝理 POLYPLASTICS CO.,LTD	LCP Liquid crystal polymer	V-0	E106764

4. 标准状态:

1)Rate Voltage: 50 V AC/ DC

额定电压:AC/DC 50V

2)Rate Current: 0.5 A

额定电流:0.5A

3) Temperature and humidity range:温湿度范围:

a. Operating temperature: -40°C ~ +105°C

操作温度: -40°C ~ +105°C

b. Storage temperature: -40°C ~ +105°C

储存温度: -40°C ~ +105°C

c. Keep humidity range: relative humidity 45~80%RH

保持湿度范围: 相对湿度 45~80%RH

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Amphenol Aorora Technology (Huizhou) Co.,Ltd		PART NUMBER 料 号	F31G-1A7*1-110** F31K-1A7*1-110** F51G-1A7*1-110** F51K-1A7*1-110** F32Y/2P-1A7*1-110**	1/6	
File number 文件编号 IS.EQC.035	DATE 日期: 2017-09-04	REV 版本: B	REVISED BY: 制作: May	CHECKED BY: 审核: Rain	APPROVED BY: 核准: Xiaohong. Zhu

5. Performance 性能:
5.1 structure 构造

No.	Test Description 测试描述	Test Procedures & Condition 测试程序和条件	Requirements 规格要求
1	Appearance 外观	Visual, method of measurement 目视, 寸法量测	Conform to the requirements of the drawings 符合图面要求

5.2 Electrical Performance 电气性能

No.	Test Description 项目	Test Procedures & Condition 测试程序和条件	Requirements 规格要求
1	Contact Resistance 接触阻抗	The same terminal testing , current: 10mA (DC), Voltage: below 20mV , the use of wires: adapting FFC standard line 同一根端子测试, 电流: 10mA (DC), 电压: 20mV 以下, 使用电线: 适配 FFC 标准线	30mΩ max.
2	Insulation Resistance 绝缘阻抗	Insulation resistance between adjacent terminals DC 500V, 1 minutes. 相邻端子间 DC 500V, 1 分钟	500MΩ Min.
3	Pressure 耐压测试	Adjacent terminals AC 500V, Current sensitivity in 2mA, 1minutes 相邻端子间 DC 500V, 感度电流 2mA, 1 分钟	NO breakdown, No short circuit 无击穿, 无短路
4	Temperature rise 温度上升	measuring terminal temperature rise terminal at rated voltage, current at 端子在额定电压、电流下工作时测量端子上升的温度。	30℃ Max.

5.3 Mechanical Performance 机械性能

No.	Test Description 项目	Test Procedures & Condition 测试程序和条件	Requirements 规格要求
1	FFC/FPC retention force FFC/FPC 皮线保持力	FFC (T=0.30mm) into the FPC bond, 25~100mm/points to uniform vertical pull out, this action was repeated 3 times, measurement data record at fourth. FFC(标配厚度为 0.30MM)插入 FPC 连接器后, 以 25~100mm/分匀速垂直拔出, 此动作重复三次后第四次作测量资料的记录	20gf/PIN Min
2	FFC/FPC insertion force FFC/FPC 插入力	FFC to 25~100mm/uniform vertically inserted into FPC FFC 以 25~100/分匀速垂直插入 FPC	3000gf Max
3	Terminal retention force 端子保持力	The terminal 25.4±3mm/uniform the vertically from the rubber core tank 将端子以 25.4/分匀速垂直从胶芯槽内拔出	300gf/terminal Min.

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4	Stator retention force 固定片保持力	The stator 25.4±3mm/uniform the vertically from the rubber core tank 将固定片以 25.4/分匀速垂直从胶芯槽内拔出	400gf/terminal Min.
5	Durability 插拔耐久性	The following actions are repeat 30 times: FPC insert, FPC pull out. Periodic rate:10times/min max 以下动作进行 30 次巡回:FPC 插入, FPC 拔出 周期速率: 10 次/分钟 MAX	<ol style="list-style-type: none"> 1. Appearance: no abnormal 2. Contact impedance: 50 mΩ Max 3. FFC/FPC insertion force: 3,000gf MAX 4. FFC/FPC retention force: 20gf/pin min <ol style="list-style-type: none"> 1. 接触阻抗 50 mΩ 最大 2. 外观无异常 3. FFC/FPC 插入力:3000gf max 4. FFC/FPC 拔出力: 20gf/pin 最小

5.3 耐久性能

No.	Test Description 项目	Test Procedures & Condition 测试程序和条件	Requirements 规格要求
1	Vibration 耐振性	Amplitude:1.5mm, pp Scan time;10~55~10Hz 1 minutes Duration:2 hours in each of the x y z - axis 振幅: 1.5 mm, pp 扫描时间: 10~55~10 赫兹 1 分钟 持续時間: 2 小时在每个 x y z 轴	<ol style="list-style-type: none"> 1. Appearance: no abnormal 2. Contact impedance: 50 mΩ Max 3. discontinuous conduction within 1s <ol style="list-style-type: none"> 1. 外观无异常 2. 接触阻抗 50 mΩ 最大 3. 不连续导通 1 μs 以内
2	Shock 耐冲击性	Terminal to current of 0.1 A, DC series conduction, acceleration of 490 m/s ² , X, Y, Z direction of the 11ms, all three times, A total of 18 rounds 端子以电流 0.1A D.C 串联导通, 加速度 490m/s ² , X, Y, Z 方向各 11ms, 各 3 回, 共 18 回	
3	Cold resistance 耐寒性	Placing time after 96H in temperature-40±3°C, placed in room temperature for 1~2 hours, then the measurement. 温度-40±3°C中放置时间 96H 后放置在室温环境下 1~2 小时再进行测量	<ol style="list-style-type: none"> 1. Appearance: no abnormal 2. Contact impedance: 50 mΩ Max <ol style="list-style-type: none"> 1. 外观无异常 2. 接触阻抗 50 mΩ 最大
4	Heat resistance 耐热性	Placing time after 96H in temperature105±2°C, placed in room temperature for 1~2 hours, then the measurement. 温度 105±2°C中放置时间 96H 后放置在室温环境下 1~2 小时再进行测量	

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5.4 耐久性能

No.	Test Description 项 目	Test Procedures & Condition 测试程序和条件	Requirements 规格要求
1	Moisture resistance 耐湿性	Standing time after 96H in temperature 60±2℃; Moisture 90~95%RH placed in the room temperature 1~2H again then the measurement. 温度 60±2℃; 湿度 90~95%RH 中放置时间 96 小时后在室温环境下 1~2 小时再进行测量	1. Appearance: no abnormal 2. Contact impedance: 50 mΩ Max
2	Salt Spray 盐雾试验	Temperature 35±2℃; Saline specific gravity of 5±1% spray test for 48H 镀金: 温度 35±2℃; 盐水比重 5±1% 喷雾试验 48H 单 PIN 端子: 温度 35±2℃; 盐水比重 5±1% 喷雾试验 48H	1. 外观无异常 2. 接触阻抗 50 mΩ 最大
3	The impact of hot and cold 冷热冲击	Placed in the temperature -55±3℃; 85±2℃ each 30 minutes, totally 5 cycles, then left at room temperature for 1~2hours, then the measurement. -55±3℃; 85±2℃ 的温度下各放置 30 分钟, 共进行 5 次循环, 之后在室温下放置 1~2 小时再进行测量.	1. Appearance: no abnormal 2. Contact impedance: 50 mΩ Max 1. 外观无异常 2. 接触阻抗 50 mΩ 最大
4	Sulfidation resistance 耐硫化性	Concentration conditions: 50±5ppm sulfur dioxide gas Environmental temperature: 40±2℃ Placing time: 24Hrs 浓度条件: 50±5ppm 二氧化硫气体 环境温度: 40±2℃ 放置时间: 24 小时	1. Appearance: no abnormal 2. Contact impedance: 50 mΩ Max 1. 外观无异常 2. 接触阻抗 50 mΩ 最大
5	High ammonia 耐氨气	Placing conditions: 10CM conditions, the surface of 28% ammonia solution. Placing time: 40 minutes 放置条件: 10CM 条件, 表面 28% 的氨水溶液中 放置时间: 40 分钟	1. Appearance: no abnormal 2. Contact impedance: 50 mΩ Max 1. 外观无异常 2. 接触阻抗 50 mΩ 最大
6	Solderability 沾锡性	Soldering Temperature: 245±5℃ (Sn: lead Free) Time: 3±0.5 seconds 沾锡温度 245±5℃ (Sn: lead Free) 时间 3±0.5S	Continuous solder coating with a min. 95% coverage 吃锡饱满, 在 95% 以上

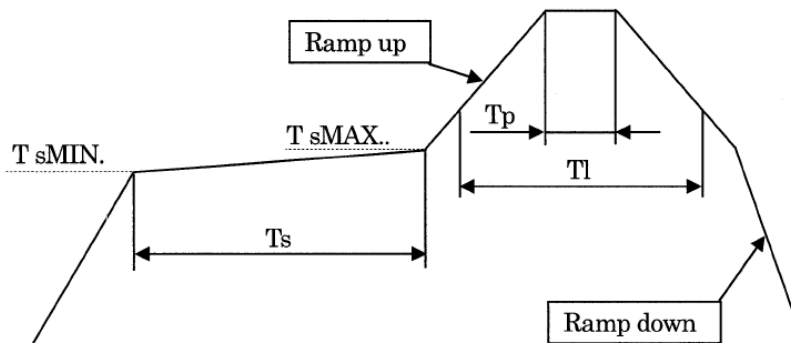
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7	The heat resistance of Reflow Reflow 耐热性	预备加热时间 Pre-heating time: 170°C~190°C 60~180s. 焊锡温度时间 Soldering Temperature Time: 260°C 10sMAX.	No deformation on the housing, the pin leg and the ground plate flatness is 0.10mm Max. 产品主体无变形起泡, 产品的锡脚与接地片平整度 0.10mm Max.
8	WHISKER (Tin Plated) WHISKER 镀锡品	Insert the FPC after Reflow, then place 500H, Then observation of WHISKER length. 过 Reflow 后插入 FPC, 放置 500H, 观察 WHISKER 的长度	100um Max

5.5 Reflux conditions 回流条件:

Profile Feature	Lead-free Eutectic Assembly
温度上升 Ramp up Rate (Tsmax to Tp)	: 1~4°C/S
Pre-heat Ts MIN. Ts MAX. Time (Ts MIN. TO Ts MAX.)	: 170°C MIN : 190°C MAX : 60~180S
T l 温度 (temperature) 时间 (time)	: 225°C MIN : 60~150S
T p (Peak) 温度 (temperature) 时间 (time)	: 260°C MAX (255°C MIN.) : 10S MAX



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7. packaging 包装

See figure packaging 参见包装图



7.Alter Content 修改内容。

No.	Date 日期	Modify content 修改内容	Revised by 编制	Checked by 审核	Approved by: 核准
1	2015/09/26	New content 新版发行	叶兵	韩奇	刘红奎
2	2016/10/13	更新焊锡温度条件 Update the soldering temperature conditions	May	Rain	xiaohong.zhu

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