

MINI USB 5PIN TYPE B

1. 适用范围 SCOPE

本技术规范适用于 0.8mm pitch MINI USB -B 型连接器。

This specification defines the performance for 0.8mm pitch MINI USB connector -B type.

| 料号/Part number | 图号/Drawing number | 描述/Description |
|-----------------|-------------------|-------------------------------------|
| 3.034A0-005-*R0 | C-3.034A0 | Mini USB connector, -B Type, offset |
| 3.036A*-005-*R0 | C-3.036A* | Mini USB connector -B Type |

(*stands for Au plating spec. for contact area
*代表接触区镀金规格)

2. 参考文件 REFERENCE DOCUMENT

MIL-STD-202, EIA-364, UL-498

3. 产品构成/材料 Bill OF MATERIAL.

塑胶主体/Housing : High temperature thermoplastic.UL94 V-0

接触端子/Contact : Copper alloy, Nickel underplated ; Gold plating on contact area; Tin plating on solder area.

铁壳/shell: Copper alloy, Nickel underplated and Tin plating overall.

4. 额定值 Ratings

- | | |
|---|---------------------------------------|
| A. 使用温度 Operating temperature: -40°C to 85°C | 使用湿度 Operating Humidity Range: 5%~85% |
| B. 保存温度 Storage Temperature Range: -40°C to 100°C | 保存湿度 Storage Humidity Range: 5%~95% |
| C. 额定电流 Current Rating: 1A | D. 额定电压 Voltage Rating: 30VAC |

5. 产品性能及测试要求和规范 PERFORMANCE, TEST REQUIREMENT AND PROCEDURES SUMMARY

| 5-1 电性能 ELECTRICAL | | |
|---|--------------------------|---|
| 项目 ITEM | 规格 STANDARD | 测试规范 PROCEDURES |
| 低功率接触阻抗 Low Level contact resistance | 最大 50mΩ 50mΩ Max. | 连接器固定在 PCB 板上,用公端配合后使用最大 20 mV 电压, 开路最大 100mA 电流进行测试。 Subject Mated connector, 20 mV Max. Open circuit at 100mA Max. EIA 364-23 |
| 耐电压 Dielectric withstanding Voltage | 无击穿 No Breakdown | 使用交流 100V 50HZ 的电压在相邻两端子和接地片之间保持 1 分钟 Apply a voltage 100VRMS 50HZ for 1 minute between adjacent terminals and between terminals to ground. EIA 364-20 |
| 绝缘阻抗 Insulation Resistance | 至少 100 MΩ 100 MΩ Min. | 使用 500V 直流电压在相邻两端子或接地片之间 Apply a voltage 500VDC between adjacent terminals or between terminal and ground. EIA 364-21 |
| 温升 Temperature Rise | 最大 30°C 30°C Max. | 在电流电压最大时测定。 Carrying Max. current load. UL-498 |

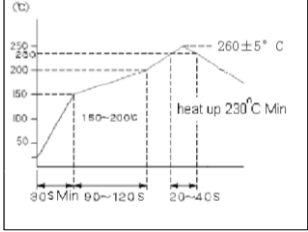
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| Approve: 吕海涛 2011.03.23 | Check: 鲁明科 2011.03.23 | Pre: 谭林红 2011.03.23 |
|-----------------------------------|---------------------------------|-------------------------------|

5-2 机械性能 MECHANICAL

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|--------------------------|---|--|
| 端子保持力 Retention Force | 至少 400gf/Pin 400gf/Pin Min. | 施加轴向力在端子上, 速度 25 +/-3mm/min Apply axial pull out force on the terminal assembled in the housing at a rate of 25 +/-3mm/min |
| 插入力 Mating force | 3.5kg/35N Max | 用公端对插连接器, 速度为 12.5mm/分钟 Mating connector at the speed 12.5mm/min |
| 拔出力 Unmating force | 初态/initial: 1~2kg/10~20N 末态/final: 300g/3N min | 拔出公端连接器, 速度为 12.5mm/分钟 Unmating connector at the speed 12.5mm/min |
| Bending test/ 偏向力测试 | 2.5kg/25N, 产品无损坏 No damage for connector | 在距离连接器插入断面 5mm 的地方施加 2.5kg/25N 力 (F2,F3), 保持 5~10 秒钟。 Apply 2.5kg/25N force (F2,F3) at the point 5mm from connector insertion side for 5~10 second |
| 插入强度/ Push strength | 10Kg/100N min, 产品无损坏 No damage for connector | 沿连接器插入方向施加 10kg 力(F1), 保持 5~10 秒钟。 Apply 10kg force along the plug insertion direction for 5~10 second. |
| |  <p>偏向力和插入强度测试示意图</p> | |
| 插拔耐久性 Durability | 插拔耐久后再测试低功率接触阻和插拔力须满足规格。 After durability, the LLCR and mating/unmating force should meet the spec. | 用公端对插连接器至最大行程位置 5000 次, 速度为每小时 200 次. 参考 EIA-364-09 Mating and unmating samples at the Max. stroke position for 5000 cycles at a speed of 200 times/hour EIA-364-09C |
| 振动 Vibration | 不得有超过 1 微秒的漏电流产生, 振动后再测试低功率接触阻抗不得大于 50mΩ Discontinuities < 1 ms Contact Resistance:50mΩ Max. | 与公端连接器配合, 1 分钟内振动频率为 10-55-10 Hz , 振幅 1.5mm, 三个相互垂直的方向进行振动, 各 2 小时, 测试过程加载直流电 5mA. 参考 MIL-STD-202, 方法 201, 条件 A Subject mated connectors to 10-55-10 Hz traversed in 1 minute at 1.5 mm amplitude 2 hours each of 3 mutually perpendicular planes, passing DC 5mA current during the test. MIL-STD-202, Method 201, Condition A |
| 机械冲击 Physical shock | 不得有超过 1 微秒的漏电流产生, 冲击后再测试低功率接触阻抗不得大于 50mΩ. Discontinuities < 1 ms Contact Resistance:50mΩ Max. | 加速度: 50g 波形: 半正弦冲击波 时间: 11 毫秒 冲击次数: 正反三个相互垂直方向和冲击 3 次, 共 18 次, 测试过程加载直流电 100mA. 参考 MIL-STD-202, 方法 213B, 条件 A Accelerated Velocity: 490 m/s ² (50g) waveform: half-sine shock pulse Duration: 11msec. Number of Drops: 3 drops each to normal and reversed directions of X, Y and Z axes, totally 18 drops, passing DC 100mA current during the test. MIL-STD-202, Method 213B, Condition A |

5-3 环境性能 ENVIRONMENTAL

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| <p>恒温恒湿试验 High Relative Humidity Exposure</p> | <p>耐温测试后再测试低功率接触阻抗不得大于 50mΩ. 绝缘阻抗不得小于 100MΩ, 并且耐电压性能完好.</p> <p>外观没有损伤</p> <p>Contact Resistance:50mΩ Max. Insulation Resistance and Dielectric Strength should meet spec.</p> <p>Appearance: no damage</p> | <p>与公端配合, 测试条件如下: 温度: 60°C 相对湿度: 90~95% 时间: 96 小时. 参考 MIL-STD-202 方法 103B, 条件 B Subject Mated connectors the following condition: Temperature: 60°C Relative humidity: 90~95% Duration: 96h MIL-STD-202 Method 103B Condition B</p> |
| <p>温度冲击 Thermal shock</p> | <p>测试后接触阻抗为 50 mΩ Max</p> <p>外观没有损伤</p> <p>绝缘阻抗和耐电压能力必须符合规范要求.</p> <p>Contact Resistance: 60 mΩ Max</p> <p>Appearance: no damage</p> <p>The insulation resistance and dielectric strength should meet product specification.</p> | <p>连接器焊在 PCB 板上, 插入公端连接器</p> <p>温度: -55°C+/-3°C(30 分钟)(85 °C+/-2 °C(30 分钟)</p> <p>过渡时间:最大 5 分钟 / 循环:10 个循环</p> <p>将产品放置在标准大气环境中 1-2 小时后进行检测</p> <p>Solder connector to the P.C. Board, insert the plug , and expose them to the following environmental condition. Temperature:-55 °C+/-3 °C(30 min) (85 °C+/-2 °C(30 min)</p> <p>Transition time: 5 min. max / Number of exposure:10 cycles</p> <p>After test, subject samples to standard atmospheric condition for 1 to 2 hours and then do the specify measurements.</p> |
| <p>高温冲击 High Temperature Exposure</p> | <p>测试后: 接触阻抗: 50 mΩ Max</p> <p>外观没有损伤</p> <p>绝缘阻抗和耐电压能力必须符合规范要求.</p> <p>Contact Resistance: 50 mΩ Max</p> <p>Appearance: no damage</p> <p>The insulation resistance and dielectric strength should meet product specification.</p> | <p>连接器焊在 PCB 板上, 插入公端连接器, 将样品放置在 70±2°C 高温下保持 96 小时. 然后放置在标准环境中 1 小时后检测产品是合格的.</p> <p>参考 MIL-STD-202 方法 108 条件 A</p> <p>Solder connector to the P.C. Board, insert the plug , and expose them to 70±2°C for 96 hours.</p> <p>After test, subject samples to standard atmospheric condition for 1 hours and then do the specify measurements.</p> <p>MIL-STD-202 METHOD 108 CONDITION A</p> |
| <p>低温冲击 Low Temperature Exposure</p> | <p>测试后: 接触阻抗为 50 mΩ Max</p> <p>外观是没有损伤</p> <p>绝缘阻抗和耐电压能力必须符合规范要求.</p> <p>Contact Resistance: 50 mΩ Max</p> <p>Appearance: no damage</p> <p>The insulation resistance and dielectric strength should meet product specification.</p> | <p>连接器焊在 PCB 板上, 插入公端连接器, 将样品放置在 -40 °C+/-3 °C 低温下保持 96 小时. 然后放置在标准环境中 1 小时后检测产品是合格的.</p> <p>参考 EIA-364-59A</p> <p>Solder connector to the P.C. Board, insert the plug , and expose them to -40 °C+/-3 °C for 96 hours.</p> <p>After test, subject samples to standard atmospheric condition for 1 hours and then do the specify measurements. EIA-364-59A</p> |

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| <p>盐雾腐蚀 Salt Spray</p> | <p>测试后： 接触阻抗为 50 mΩ Max 外观是没有损伤 绝缘阻抗和耐电压必须符合要求。 Contact Resistance: 50 mΩ Max Appearance: no damage The insulation resistance and dielectric strength should meet product specification.</p> | <p>与公端配合，测试温度 35°C±2°C，盐雾浓度 5+1%，时间 48 小时. 参考 EIA 364-26B, 条件 B Subject mated samples. 35°C±2°C, 5+1% Salt condition, 48 hours EIA 364-26 condition B</p> |
| <p>耐焊锡热 Solder Heat Resistance</p> | <p>无端子掉落不良 No loose contacts or deformation.</p> | <p>温度条件：  Put the connector on the P.C. Board and expose them to the reflow oven for 2 times 将连接器放置在 PCB 上过两次焊锡炉（正反各一次）</p> |
| <p>焊锡性 Solderability</p> | <p>焊锡面积：最少 95%以上 Solder coverage:95% MINIMUM</p> | <p>将焊锡部分尾部浸到融化的锡炉里(温度 250±5°C) 3±0.5 秒 Dip solder tails into the molten solder(held at 250±5°C for 3±0.5 sec.</p> |

6. 产品认定和测试群组 PRPRODUCT QUALIFICATION AND TEST SEQUENCE (sample size : 5pcs/group)

| Group Number | A | B | C | D | E | F | G | H |
|---|------|-----|-----|-----|---|---|---|---|
| 低功率接触阻抗 Low Level contact resistance | 1,13 | 1,6 | 1,6 | 1,5 | | | | |
| 耐电压 Dielectric withstanding Voltage | | 2,7 | 2,7 | 2,6 | | | | |
| 绝缘阻抗 Insulation Resistance | | 3,8 | 3,8 | 3,7 | | | | |
| 温升 Temperature Rise | | | | | | | 1 | |
| 端子保持力 Retention Force | | | | | | | | 1 |
| 插入力 Mating force | 2,9 | | | | | | | |
| 拔出力 Unmating force | 3,10 | | | | | | | |
| 偏弯力测试 Bending test | 4,11 | | | | | | | |
| 插入强度 Push strength | 5,12 | | | | | | | |
| 插拔耐久性 Durability | 6 | | | | | | | |
| 振动 Vibration | 7 | | | | | | | |
| 机械冲击 Physical shock | 8 | | | | | | | |
| 恒温恒湿试验 High Relative Humidity Exposure | | 4 | | | | | | |
| 温度冲击 Thermal shock | | 5 | | | | | | |
| 高温冲击 High Temperature Exposure | | | 4 | | | | | |
| 低温冲击 Low Temperature Exposure | | | 5 | | | | | |
| 盐雾腐蚀 Salt Spray | | | | 4 | | | | |
| 耐焊锡热 Solder Heat Resistance | | | | | 1 | | | |
| 焊锡性 Solderability | | | | | | 1 | | |

| RAV. | EC NO. | DESCRIPTION | DATE | WRITTEN |
|------|-------------|-------------|--------------|---------|
| A | N/A | RELEASED | 2011. 01. 04 | 戈明 |
| B | PECN1103024 | 生产场地变更 | 2011. 03. 23 | 谭林红 |