



PRODUCT SPECIFICATION

1. SCOPE (范围)

1.1. Contents (目录)

This specification covers the performance, tests and quality requirements for the USB Type-C Receptacle connector.
此份规格书包含了 USB Type-C 母座连接器的性能，测试及品质要求。

1.2. Qualification (条件)

When tests are performed on the subject product line, the procedures specified specifications shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.
当所有测试项目被应用于此系列产品时，应使用此规格书内制定的程序，所有的检验须按照对应的检验规范及产品图纸执行。

2. APPLICABLE DOCUMENT (执行文件)

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.
以下内容为本规范的一部分，除非有最新版本文件指定发行，当此规格书标准与产品图纸有冲突时，以产品图纸为准，当此规格书与参考文献相冲突时，以此规格书为准。

3. REQUIREMENTS (要求)

3.1. Design and construction (结构设计)

Product shall be of the design, construction and physical dimensions specified on the applicable product drawing.
产品的设计，结构和物理尺寸须详细的标示在产品图纸上

3.2. Materials (材质)

Refer to drawing.
参考图纸

3.3. Ratings (额定参数)

A. Voltage:

20 V DC/AC (RMS. MAX) 电压：直流/交流电 20 伏



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B. Current (电流):

5Amps Max for total Vbus pins (Pin A4, A9, B4, B9); 1.25 A shall be applied to the VCONN pin (B5) as applicable, terminated through the corresponding GND pins (Pin A1, A12, B1, and B12),

0.25 Amps MIN. for all other contacts.

Vbus 电流 3A~5A, GND 电流 1.25A, 其他 PIN 0.25A

C. Temperature (温度)

Operating temperature: -25°C ~ +85°C

工作温度: -25°C ~ +85°C

Storage temperature: -20°C ~ +65°C

储存温度: -20°C ~ +65°C

3.4. Performance requirement and test description (性能测试要求与条件)

The product shall be design to meet the electrical, mechanical and environmental performance requirements specified in following table3.5. All tests shall be performed at ambient environmental conditions.

如下表格 3.5 详细描述了产品的电气，机械和环境的测试要求，所有测试都需在室温条件下执行。

3.5. Test requirements and procedures summary (测试条件与步骤摘要)

Test Item (测试项目)		Requirements (规格/要求)	Test Procedure / Condition (测试条件)
1	Appearance of product 产品外观	All components shall be properly assembled and free of burrs, warps, scratches, broken chips, and other abnormalities. 所有零件必须组装完好,不能出现毛边,变形,刮伤,以及任何外观破坏等异常.	Visual inspection refer to EIA-364-18 目视检查, 参考: EIA-364-18



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Electrical Requirement (电气性能)

Test Item (测试项目)		Requirements (规格/要求)	Test Procedure / Condition (测试条件)
2	Low Level Contact Resistance(LLCR) 接触电阻	40mΩ Max. Initial. 50mΩ Max. Final. 初始最大 40 毫欧 终值最大 50 毫欧	Subject mated contacts assembled in housing to 20mV Max., open circuit at 100mA Max. Refer to: EIA-364-23 端子与胶芯组装后,最大电压 20 毫伏, 短路电路最大 100 毫安培 参考: EIA-364-23
3	Dielectric Withstanding Voltage 耐电压	No flashover & spark over & excess leakage & breakdown 不可跳火, 不可有火花, 不可超出泄露额, 不可击穿	Test voltage 100V AC between adjacent contacts of mated and unmated connector assemblies for one minute. Refer to: EIA-364-20 Method B 100 伏交流电下测试未配对连接器间相邻端子电路一分钟 参考: EIA-364-20 方法 B
4	Insulation Resistance 绝缘阻抗	100 MΩ Min. 最小 100 兆欧姆	Test voltage 100V DC between adjacent contacts of mated and unmated connector assemblies. Refer to: EIA-364-21 100 伏直流电下测试相邻位配对连接器间电路. 参考: EIA-364-21
5	Temperature Rise 温升测试	Temperature change should not exceed 30 °C. 公母对插测试电流温升不超过 30°C	Measure the temperature rise under mated condition. Refer to: EIA-364-70 Method 2 参考 EIA-364-70 方法 2



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Mechanical requirement(机械性能)

Test Item (测试项目)		Requirements (规格/要求)	Test Procedure / Condition (测试条件)
6	Mating Force 插入力	Mate force :5N~20N 插入力: 5N~20N	Mate the receptacle connector (soldered to the test board) and plug at a speed 12.5mm/min. Refer to: EIA-364-13 以每分钟 12.5mm 的速度进行插拔 参考: EIA-364-13
7	Un-mating Force 拔出力	Initial: 8N~20N (0~30cycle) After 31~10,000 cycles: 6N~20N 初始: 8N~20N; (0~30 次) 31~10,000 次之后: 6N~20N.	Un-mate the receptacle connector (soldered to the test board) and plug at a speed 12.5mm/min. Refer to: EIA-364-13 以每分钟 12.5mm 的速度进行插拔 参考: EIA-364-13
8	Durability (10,000cycles) 耐久性 10,000 次	Mate force :5N~20N 插入力: 5N~20N Initial: 8N~20N (0~30cycle) After 31~10,000 cycles: 6N~20N 初始: 8N~20N; (0~30 次) 31~10,000 次之后: 6N~20N. 接 触阻抗:测试完成后最大 50 毫欧, 外 观无损伤.	Mate and un-mate connector assemblies for 10,000 cycles at cycle rate of 500+/-50 cycles per hour if done Refer to: EIA-364-09 插拔次数 10,000 次,速度 500+/-50 次每小时, 参考: EIA-364-09
9	Physical shock 物理冲击	No discontinuities greater than 1 microsecond duration in any of the four orientations tested. 瞬断不可超过 1 毫秒	Mated connectors are subjected to 5.35Ggrms,15minutes in each of 3mutrally perpendicular planes. 100mA Max, Refer to: EIA-364-27B



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Environmental requirements (环境性能)

Test Item (测试项目)		Requirements (规格/要求)	Test Procedure / Condition (测试条件)
10	Solder-ability 可焊接性	Solder tails shall pass 95% min coverage 粘锡面积最小 95%	Solder Temperature: 250±5°C Duration: 5±2 sec. 焊接温度: 250±5°C 持续时间: 5±2 sec.
11	Resistance to Soldering Heat 耐焊锡热量	No physical damage shall occur 无外观损伤	Pre Heat: 160~190°C, 70~110sec. Heat: 220°C Min, 40~70sec. Peak Temp: 255±5°C Max. 5~10sec Duration: 1 cycles. 初始温度:160~190 摄氏度, 70~110 秒 温度:最小 220 摄氏度, 40~70 秒 最高温度:最大 260±5 摄氏度,5~10 秒 周期: 1 次
12	Thermal shock 热冲击	Contact resistance: 50mΩ Max. Final 接触阻抗: 测试完成后最大 50 毫欧	Mated connector -55°C(30minutes), +85°C(30minutes) Perform this 1 cycle, repeat 10 cycles Refer to: EIA-364-32 先 将连接器放置于-55 摄氏度环境中三十分钟, 再 置于+85 摄氏度环境中三十分钟, 此为一周期, 重复 10 周期.参考: EIA-364-32



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13	Humidity 恒温恒湿	Contact resistance: 50mΩ Max. Final Appearance : No breakdown 接触阻抗: 测试完成后最大 50 毫欧 外观:无损伤	Mated connector 40 °C,90~95%RH,96hours Refer to: EIA-364-31B 将连接器放置于温度 40 摄氏度, 90~95%RH 湿度中, 96 小时, 参考: EIA-364-31
14	Vibration 振动	No evidence of physical damages and no discontinuity longer than 1 microsecond. 产品不可出现损坏, 瞬断不可超过1 毫秒	EIA-364-28, Condition VII-D, 15min in each of 3 mutually perpendicular directions. Both mating halves should be fixed rigidly. 参考 EIA-364-28 条件 VII-D 配对的连接器在 3 个相互垂直的面中,至少 15 分 钟。
15	Temperature life 高温老化	Contact resistance: 50mΩ Max. Final Appearance: No breakdown 接触阻抗:测试完成后最大 50 毫欧, 外观: 无损伤	105°C for 120 hours without applied voltage when used as preconditioning. Refer to : EIA-364-17, Method A 105°C无外加电压 120 小时取出至室温。 参考: EIA-364-17, 方法 A
16	Salt spray 盐雾测试	Contact resistance: 50mΩ Max. Final Appearance: By visual inspection terminal without noticeable rust 接触电阻: 测试完成后最大 50 毫欧. 外观变化:通过目视检查端子没有明 显的锈迹	Subject mated connectors to 35±2°C and 5±1% salt condition for 48 hours. After test, rinse the sample with water and recondition the room temperature for 1 hour Refer to: EIA-364-26 将连接器放置于温度 35±2 摄氏度,盐水浓度 5±1%条件下 24 小时后,用清水清洗样品置于室 温条件下 1 小时 参考: EIA-364-26

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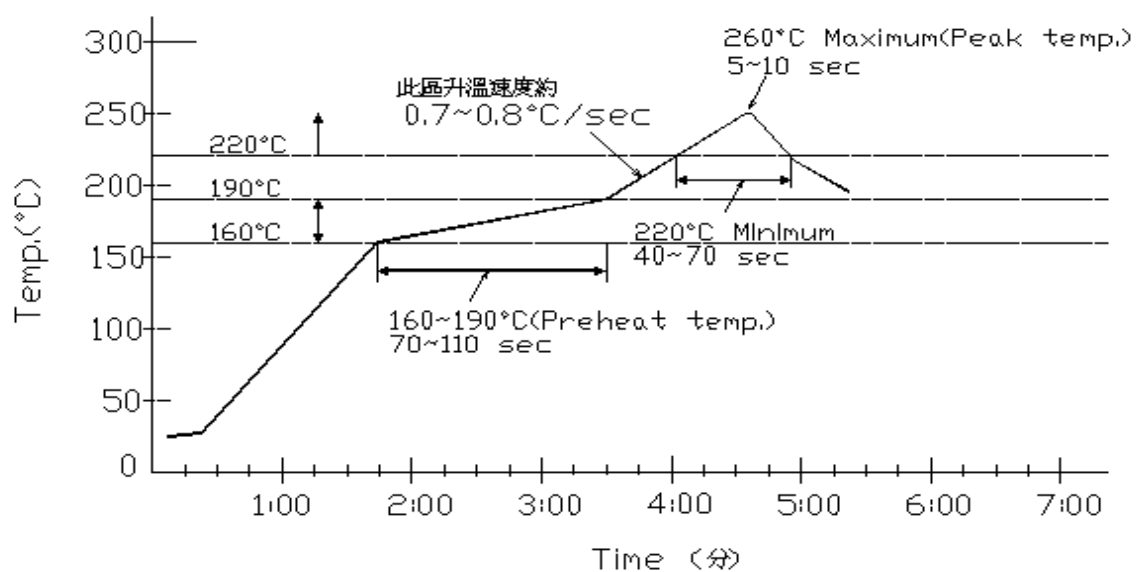
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3.7. Packaging (包装)

Parts shall be package to protect against damage during handling, transit and storage. The parts shall be carry in tape & reels inside boxes. For details: refer to drawing.

在搬运、运输和储存过程中，产品应包装好以防损坏。产品应该放置于包装箱内的卷盘内。详情请参阅包装规格。

3.8. Recommended reflow profile (推荐的回流焊曲线)



Reflow profile for soldering heat resistance testing