



# Product Specification

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## 1. 范围 Scope

该标准涵盖 市 有限公司生产的 **Type-c USB** 系列连接器之功能要求及测试方法。  
This specification covers the requirements for product performance and test methods of C&S's **Micro USB** Series Connectors.

## 2. 标准文件 Related Standards

- 2-1 IEC512
- 2-2 MIL-STD 202
- 2-3 EIA-364

## 3. 一般规格 General Specification

- 3-1 额定电流 Current Rating  
0.5 A Max. AC(rms)/DC /2,3,4Contact 1.8A Max. AC(rms)/DC/1,5Contact
- 3-2 额定电压 Voltage Rating  
30V Max. AC(rms)/DC /Contact
- 3-3 工作环境 Operating Environment  
温度 Temperature: -30°C~+85°C  
湿度 Humidity: 90~95% maximum
- 3-4 储存环境 Storage Environment  
温度 Temperature: +15°C~+36°C  
湿度 Humidity: 76% maximum
- 3-5 测试环境 Test Environment  
温度 Temperature: +15°C~+36°C  
湿度 Humidity: 49%~78%  
大气压 Atmospheric Pressure: 86-106KPA

## 4. 材料及尺寸 Material and dimensions

- 4-1 产品材料 Product Material:  
塑胶主体 housing: 耐高温,热塑性材料,阻燃等级 UL94V-0, 颜色: 黑色  
High temperature, Thermo-plastic, Color Black, UL94V-0.  
端子 contact: 铜 copper alloy  
外壳 shell: 黄铜 copper alloy
- 4-2 产品尺寸及电镀 Product dimensions and plating:  
请参考所附客户图或物料编码原则  
please refer to the attached drawing or product numbering code
- 4-3 产品有害物质符合厂内 ROHS 有关规定。  
The harmful material should be compliance to requirement about ROHS.



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### 5. 产品外观 PRODUCT APPEARANCE

项目 ITEM	描述 Description	测试方法 Test Methods	测试规格 Test Specification
5-1	产品外观 Examination of Product	依据 IEC512-2 测试 1a&1b 肉眼观察，产品外形必须符合图纸要求。	产品外观良好，无外观不良情形，产品结构及尺寸亦须符合图纸设计要求。
		IEC512-2 method 1a and 1b Shall be confirmed with eyes in accordance with each drawing.	Outward appearance shall be good without such injurious problem and structure shall be meet the design and dimension requirement of drawing
5-2	电镀膜厚测试 Plating Thickness Measurement	肉眼观察电镀层外观并使用适当的仪器设备进行膜厚测试	电镀层须良好无外观不良情况，电镀膜厚测试须满足设计或图纸需求
		Shall be confirmed with eyes in accordance with each drawing. Shall be confirmed by using proper measuring instruments	Outward appearance shall be good without such injurious problem and thickness shall be meet the design requirement of drawing

### 6. 机械性能 MECHANICAL PERFORMANCE

项目 ITEM	描述 Description	测试方法 Test Methods	测试规格 Test Specification
6-1	插入力 Connector Mating Force	依据 IEC512-7 13b 测试方式，操作速度 12.5mm/min. 插拔 3 次后开始记录数据。	35N Max.(3.5Kgf)
		Mate and un-mate connectors at a rate of 12.5±3 mm/min. recorder after mate and un-mate 3 times. IEC512-7 method 13b	
6-2	拔出力 Connector Un-mating Force	依据 IEC512-7 13b 测试方式，操作速度 12.5±3mm/min. 插拔 3 次后开始记录数据。	8N MIN.(0.8Kgf)
		Mate and un-mate connectors at a rate of 12.5±3 mm/min. recorder after mate and un-mate 3 times. IEC512-7 method 13b	



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耐插拔  
Durability

插拔 3000 次,插拔速度 12.5mm/分钟. IEC512-5 方法 9a

When mate /un-mate up to 10000 cycles repeatedly at a rate of 12.5mm/min.  
IEC512-5 method 9a.

产品外观符合需求, 无破损及外形损伤。

试验后接触电阻最大: 40mΩ

1. Shall meet visual requirement, show no physical damage.
2. After test: 40mΩ Max.

## 7. 电气特性 ELECTRICAL PERFORMANCE

项目  
ITEM

描述  
Description

测试方法  
Test Methods

测试规格  
Test Specification

7-1

绝缘阻抗  
Insulation  
Resistance

加 250V DC 的电压于相邻两端子之间 1 分钟. IEC512-2 测试 3a 方法 B

Mated connectors, Apply DC 250V for one minute between adjacent terminal.

100MΩ Min.

7-2

接触电阻  
Contact Resistance

一组对插好的连接器;  
测试开路电压: 20mV max.;  
测试短路电流: 100m A max..  
IEC512-2 测试 2a

Mated connectors, measure by dry circuit: 20m V Max. 100m A Max.  
IEC512-2 Test 2a

30 mΩ Max. (Initial)  
40 mΩ Max. (After Test)

7-3

耐电压  
Dielectric  
withstanding  
Voltage

加 250V AC 的电压于相邻两端子之间 1 分钟. IEC512-2, 测试 4a

Mated connectors, Apply AC 250V for one minute between adjacent terminal.  
IEC512-2 Test 4a

无击穿和飞弧现象  
There shall be no breakdown



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### 8. 环境特性 ENVIROMENT PERFORMACE

项目 ITEM	描述 Description	测试方法 Test Methods	测试规格 Test Specification
8-1	耐热性 Thermal Aging	先在温度为 $85 \pm 2^{\circ}\text{C}$ 环境中放置 96 小时,取出于常湿常温中放置 1~2 小时后测试接触阻抗.(MIL-STD 202 method 108)	外观: 无损伤; 试验后接触电阻最大: $40\text{m}\Omega$
		Mated connectors and expose to $85 \pm 2^{\circ}\text{C}$ for 96 hours, Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed.(MIL-STD 202 method 108)	After test: $40\text{m}\Omega$ Max. Appearance: No damage.
8-2	耐寒性 Cold Aging	先在温度为 $-55 \pm 3^{\circ}\text{C}$ 环境中放置 96 小时,取出于常湿常温中放置 1~2 小时后测试接触阻抗	外观: 无损伤; 试验后接触电阻最大: $40\text{m}\Omega$
		Mated connectors and expose to $-55 \pm 3^{\circ}\text{C}$ for 96 hours, Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed.	Appearance: no damage. After test: $40\text{m}\Omega$ Max.
8-3	耐湿性 Humidity	在温度为 $60 \pm 2^{\circ}\text{C}$ ,湿度为 90~95%环境中放置 96 小时后,常温常湿中放置 1~2 小时后测定. (MIL-STD-202 method 103)	外观: 无损伤; 试验后接触电阻最大: $40\text{m}\Omega$ 绝缘电阻: $100\text{M}\Omega$ MIN. 耐压测试: $250\text{V AC}$ , 1 分钟
		$60 \pm 2^{\circ}\text{C}$ , Humidity 90~95% Duration: 96 hours upon completion of the exposure period ,the test specimens shall be conditioned At ambient room conditions for 1 to 2 Hours, after which the specified Measurements shall be performed. (MIL-STD-202 method 103)	Appearance: no damage. After test: $40\text{m}\Omega$ Max. Insulation Resistance: $100\text{M}\Omega$ Min. Dielectric strength: $250\text{V AC}$ 1 minute



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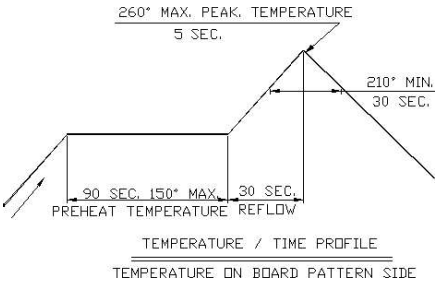
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<p>8-4</p>	<p>温度循环 Temperature cycling</p>	<p>在-55+0/-3℃中放置 30 分钟,然后在常温 25℃中放置最多 5 分钟,接着在 85+3/-0℃中放置 30 分钟,最后在常温中放置最多 5 分钟,如此循环五次后,常温常湿中放置 1~2 小时后测定. IEC512 测试 13d.</p> <p>Mated connectors and subject to the Following conditions for 5 cycles. upon Completion of the exposure period, the Test specimens shall be conditioned at Ambient room conditions for 1 to 2 Hours, after which the specified Measurements shall be performed.</p> <p>1 cycle:            a) -55+0/-3℃ 30 minutes;            b) +85+3/-0℃ 30 minutes            (transit time shall be within 5 minutes)            IEC512 test 13d</p>	<p>外观: 无损伤; 试验后接触电阻最大: 40mΩ</p> <p>Appearance: no damage. After test: 40mΩ Max.</p>
<p>8-5</p>	<p>焊接性 Solder ability</p>	<p>将产品 Tail 端浸入 260±5℃的溶锡中 3±0.5 秒 IEC512-6 测试 12a</p> <p>Dip solder-tails into the molten solder (held at 260±5℃) for 3±0.5sec. IEC512-6 test 12a</p>	<p>沾锡面积 95%以上, 无针孔。</p> <p>More than 95% of immersed area must show no voids, pin holes.</p>
<p>8-6</p>	<p>耐回流焊热 Resistance to Reflow Soldering Heat</p>	 <p>260° MAX. PEAK TEMPERATURE 5 SEC.</p> <p>210° MIN. 30 SEC.</p> <p>90 SEC. 150° MAX. 30 SEC. PREHEAT TEMPERATURE REFLOW</p> <p>TEMPERATURE / TIME PROFILE TEMPERATURE ON BOARD PATTERN SIDE</p>	<p>外观应无损伤(端子不应松动, 塑胶无变形, 起泡, 溶胶等不良)</p> <p>No damage.</p>



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盐雾测试  
Salt spray

对插产品测试环境: 温度:  $35\pm 2^{\circ}\text{C}$ , 盐水浓度: 重量比  $5\pm 1\%$ , 时间: 24 小时. 测试后常温水洗, 干燥.

EIA-364-26B

Mated connectors and expose to the following salt mist conditions. Upon Completion of the exposure period, salt deposits shall be removed by a gentle Wash or dip in running water, after which the specified measurement shall Be performed. NaCl solution:  
Concentration:  $5\pm 1\%$   
Spray time: 24 hours ambient  
Temperature:  $35\pm 2^{\circ}\text{C}$   
EIA-364-26B

外观: 无损伤;  
试验后接触电阻最大:  $40\text{m}\Omega$

Appearance: no damage.  
After test:  $40\text{m}\Omega$  Max.