



# Kunshan Jiahua Electronics Co., Ltd.

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|-----------------------|--------------------|--------------------|------|------|----|
| 文件名称 System Name:     | 产品品名 Description:  | 文件编号 Document No.: |      |      |    |
| Product specification | USB TYPE C 3.113AX | PS-0105            |      |      |    |
|                       |                    | Page               | 1OF9 | Rev. | X1 |

| ***** 目 錄 Content ***** |                           |          |
|-------------------------|---------------------------|----------|
| 項 目 Item                | 內 容 Description           | 頁 次 Page |
| -----                   | -----                     | -----    |
| 1.                      | 文件目录 Content              | 1        |
| 2.                      | 变更履历 Revised history      | 2        |
| 3.                      | 概述 Scope                  | 3        |
| 4.                      | 参考文件 Referenced Documents | 3        |
| 5.                      | 规格要求 Requirement          | 4~9      |

|      |            |         |            |            |
|------|------------|---------|------------|------------|
|      | 核准 App.    | 审核 Chk. | 制作 Pre.    | Issued By: |
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| Date | 2018-08-20 | /       | 2018-08-20 |            |





# Kunshan Jiahua Electronics Co., Ltd.

|                              |                           |                           |             |             |           |
|------------------------------|---------------------------|---------------------------|-------------|-------------|-----------|
| 文件名称 <b>System Name:</b>     | 产品品名 <b>Description:</b>  | 文件编号 <b>Document No.:</b> |             |             |           |
| <b>Product specification</b> | <b>USB TYPE C 3.113AX</b> | <b>PS-0105</b>            |             |             |           |
|                              |                           | <b>Page</b>               | <b>3OF9</b> | <b>Rev.</b> | <b>X1</b> |

## 1. 概述 **Scope:**

### 1.1 说明 **Content**

此份产品规格书是针对由昆山嘉华电子有限公司设计和制造的 **USB TYPE C 3.113A\*** 产品所定义的产品性能和测试方法。

This product specification defines the product performance and the test methods to ensure the performance of the **USB TYPE C 3.113A\***, which is designed and manufactured by Kunshan Jiahua Electronics Co., Ltd.

### 1.2 限制 **Qualification**

所有的测试和检验必须依照本文件中所要求的规格、方法进行。一旦产品的重要制程发生变更，必须立即进行品质验证和测试。

Tests and inspection shall be performed in accordance with the requirements, tests and methods contained herein. A re-qualification test shall be conducted immediately following all major process changes.

## 2. 参考文件 **Referenced Documents:** EIA-364

若某些项目被发现本规格书中的内容与以上参考文件要求不一致时，一律依本规格书中的内容为测试依据。

In case of any contradiction between this document and referenced documents, this document will take precedence.



# Kunshan Jiahua Electronics Co., Ltd.

|                              |                           |                           |             |             |           |
|------------------------------|---------------------------|---------------------------|-------------|-------------|-----------|
| 文件名称 <b>System Name:</b>     | 产品品名 <b>Description:</b>  | 文件编号 <b>Document No.:</b> |             |             |           |
| <b>Product specification</b> | <b>USB TYPE C 3.113AX</b> | <b>PS-0105</b>            |             |             |           |
|                              |                           | <b>Page</b>               | <b>4OF9</b> | <b>Rev.</b> | <b>X1</b> |

### 3. 规格要求 Requirements:

#### 3.1 应用条件 Application Condition:

3.1.1 额定电流 Current Rating: VBUS AND GND CONTACTS RATED AT 2.5A,  
PARALLELED FOR A TOTAL OF 7.5A.(平时时总共电流7.5A)  
其它PIN POWER:0.25A.

3.1.2. 额定电压 Voltage Rating: 30V AC Max.

#### 3.1.3 使用环境 Operating Environment:

温度: -40°C to +85°C,相对湿度:15%~85%,此条件下功能不可失效。

Temperature:-40°C to +85°C, Relative Humidity:15%~85%, Without loss of function.

#### 3.1.4 储存环境 Storage Environment:

温度: -40°C to +100°C,相对湿度:95%或更低,此条件下功能不可失效。

Temperature:-40°C to +100°C, Relative Humidity: 95% or Less, Without loss of function.

#### 3.2 绿色环保要求 Health, Safety and Environment

此产品中所有涉及环保有关的有害物质管控标准请参考嘉华系统文件:**JH-GP-213**

Hazardous substances (Environment related to be controlled substances) contained in this product should comply with the regulations specified by FAF's **JH-GP-213**.

#### 3.3 测试说明 Test Description

此产品性能须满足本文件 3.4 节中的各项规格要求。除非有特别申明，所有的测试和量测必须在以下条件中进行:

The product is designed to meet the requirements specified in section 3.4. Unless otherwise specified, all tests and measurements are to be performed under the following conditions:

温度 Temperature: 15°C~35°C

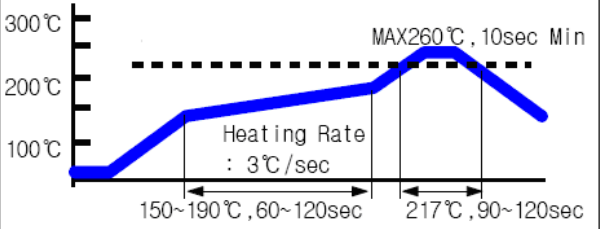
相对湿度 Relative Humidity: 20% to 70%

大气压 Atmospheric Pressure: 650 to 800 millimeters (25.6 to 31.5 inches) of Mercury.

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|------------------------------|---------------------------|---------------------------|-------------|-------------|-----------|
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| <b>Product specification</b> | <b>USB TYPE C 3.113AX</b> | <b>PS-0105</b>            |             |             |           |
|                              |                           | <b>Page</b>               | <b>5OF9</b> | <b>Rev.</b> | <b>X1</b> |

3.4 测试规范和方法 Test Requirements and Methods

**Table I: 性能要求 Performance Requirements**

| 项目 <b>Items</b>   | 规格要求 <b>Requirements</b>   | 测试方法 <b>Test Methods</b>   |
|---|--|--|
| 3.4.1<br>产品外观<br>Visual Examination                               | 目视和其他合适的仪器检测产品的外观结构及尺寸满足图面要求<br><br>Check that appearance、construction and dimension of connector are in accordance with drawing by eyes and suitable instruments. | 参考测试标准: EIA-364-18<br>依照相应的文件和规格书进行外观,功能,及尺寸的检验量测.<br><br>Comply with method EIA-364-18<br>Appearance, functional, and dimensional inspection complies with applicable specification and document.                               |
| 3.4.2<br>SMT 产品耐 Reflow 高温<br>Withstand Temperature For SMT type. | 外观: 良好<br>Appearance: Good   |  <p>IR 1 次<br/>For IR one time.</p>   |
| 3.4.3<br>低功率接触阻抗<br>Low Level Contact Resistance                  | 初始接触阻抗: 40mΩ Max.<br>测试后接触阻抗: 40mm Ω Max;<br><br>Initial: 40mΩ Max;<br>After Test: 40mm Ω Max;   | 参考测试标准: EIA-364-23<br>必须保证量测结果为产品以及与之对应配对产品的焊接部位之间的阻抗值;<br><br>Comply with method EIA-364-23. with the exception of the resistance readings, which shall be measured between the termination points of tested plug and connector |
| 3.4.4<br>绝缘阻抗<br>Insulation Resistance                            | 100 MΩ Min.  | 参考测试标准: EIA-364-21.<br>使用 500V 直流电压 1Min± 5 秒, 在相邻两端子或接地片之间<br><br>Comply with method: EIA-364-21<br>Apply a voltage 500VDC 1Min± 5 Sec. between adjacent terminals or between terminal and ground.                              |



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|                              |                           |                           |             |             |           |
|------------------------------|---------------------------|---------------------------|-------------|-------------|-----------|
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| <b>Product specification</b> | <b>USB TYPE C 3.113AX</b> | <b>PS-0105</b>            |             |             |           |
|                              |                           | <b>Page</b>               | <b>6OF9</b> | <b>Rev.</b> | <b>X1</b> |

|   |   |  |
|---|---|--|
| 3.4.5<br>耐电压<br>Dielectric Withstanding Voltage | 加电压期间漏电流不超过 0.5mA. 同时不能产生电弧、短路烧焦及击穿<br>No evidence of breakdown、flash burn caused by short circuit and insulation destruction.<br>Current leakage: 0.50 mA Max. | 参考测试标准: EIA-364-20;<br>使用交流 100V 的电压(测试后使用 250V 的电压)在相邻两端子或接地片之间保持 1 分钟+/-5 秒<br>Comply with method: EIA-364-20<br>Apply a voltage 100VAC(apply 250V AC After test) for 1 Min± 5Sec between adjacent terminals or between terminals to ground. |
| 3.4.6<br>温度上升<br>Temperature rise               | 将样品与插头连接, 电源和信号端子分别通过测试额定电流, 记录3 小时后的温度上升情况.<br>Mated and measure the temperature rise of contact when the rated current is passed after 3 hours.               | 温度上升 30°C Max.<br>Temperature rise: 30°C Max.  |



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| 文件名称 System Name:     | 产品品名 Description:  | 文件编号 Document No.: |      |      |    |
| Product specification | USB TYPE C 3.113AX | PS-0105            |      |      |    |
|                       |                    | Page               | 7OF9 | Rev. | X1 |

| 项目 Items  | 规格要求 Requirements  | 测试方法 Test Methods  |
|---|--|--|
| 3.4.7<br>振动<br>Vibration                              | 1. 测试后接触阻抗: 40mΩ Max;.<br>2. 瞬断 : 1 u sec Max.<br><br>1. After Test: 40mΩ Max;<br>2. Discontinue: 1u sec Max.  | 参考测试标准: EIA-364-28,<br>测试电流: 100mA. 每个方向振动 2H,<br>振幅:1.5mm, 频率每分钟 10-55-10HZ<br>Comply with EIA-364-28<br>Current of 100mA shall be applied during the testing. The vibration shall be along each axis for the period of two hours with the max amplitude of 1.5mm and frequency of 10-55-10HZ/Min |
| 3.4.8<br>机械冲击<br>Physical Shock                       | 不产生超过 1u 秒的瞬断, 产品没有物理破坏以及零件脱落,端子接触阻抗满足规格要求.<br><br>No electrical discontinuity longer than 1u sec. No mechanical damage or looseness, contact resistance specifications remain satisfied.  | 参考测试标准: EIA-364-27 Condition A<br>加速度: 50G ; 波形:半正弦冲击波 ; 时间: 11 毫秒 ; 正反三个相互垂直方向各冲击 3 次, 共 18 次.<br>Comply with EIA-364-27 Condition B<br>Duration Pulse : 11 msec.,<br>Wave form : half sine, 50G, Both direction of mutually perpendicular axes. Total 18 shocks                                  |
| 3.4.9<br>耐久插拔<br>Durability                           | 外观无任何损坏<br>Appearance: no damage<br>耐久后接触电阻值: 最大40mΩ.<br>After test contact resistance: 40mΩ Max.<br>插入力: 5~20N<br>Mating Force: 5~20N<br>拨出力: 8~20N (1000 次)<br>Un-mating Force: 8~20N (1000cycles)<br>拨出力: 6~20N (10000 次)<br>Un-mating Force: 6~20N (10000cycles) | 参考测试标准: EIA-364-09;<br>以最大每小时 500 次的速度连续插拔公母座10000 次<br>Mate/un-mate up to 10000 cycles repeatedly at Max. speed of 500 cycles/hr.   |
| 3.4.10<br>插入力/拨出力<br>Mating force&<br>Un-mating force | 插入力 5N~20N<br>拨出力 8N~20N<br><br>Insertion Force 5N~20N<br>Withdrawal Force 8N~20N  | 参考测试标准: EIA-364-13.<br>测试过程中产品运动速度 : 每分钟 12.5mm<br><br>Comply with method EIA -364-13.<br>Connector mated/unmated at maximum rate of 12.5 mm per minute.   |
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| Product specification | USB TYPE C 3.113AX | PS-0105            |      |      |    |
|                       |                    | Page               | 8OF9 | Rev. | X1 |

| 项目 Items                                 | 规格要求 Requirements  | 测试方法 Test Methods   |
|--|--|---|
| 3.4.11<br>盐雾实验<br>Salt Spray             | 1. 测试后接触阻抗: 40mΩ Max.<br>2. 外观: 良好<br><br>1. After the test LLCR: 40mΩ Max.<br>2. Appearance: Good   | 参考测试标准: EIA-364-26<br>盐水温度: 35±2℃,浓度 5±1%, 时间: 48 小时.<br>Comply with method EIA-364-26. Salt solution temperature 35±2℃, Concentration 5±1%, Duration: 48H.         |
| 3.4.12<br>热冲击测试<br>Thermal Shock         | 产品外观无损伤<br>Appearance: no damage<br>测试后接触电阻在最大40 mΩ<br>After testing contact resistance: 40mΩ Max.<br>绝缘电阻最小100MΩ<br>Insulation resistance:100MΩ Min.    | 参考测试标准: EIA-364-32C<br>将样品与插头连接, 按如下条件置于以下环境循环5次, 结束后, 将测试样品置于常温下恢复1~2小时后进行测试;<br>-55 +0/-3℃ 30分钟<br>25 ±10 °C 5分钟<br>+85 +3/-0℃ 30分钟<br>25 ±10℃ 5分钟                |
| 3.4.13<br>高温高湿循环<br>&High Humidity Cycle | 产品外观无损伤<br>Appearance: no damage<br>测试后接触电阻在最大40 mΩ<br>After testing contact resistance: 40mΩ Max.<br>绝缘电阻最小100MΩ<br>Insulation resistance:100MΩ Min.    | 参考测试标准: EIA-364-31B<br>相对湿度 95~100%<br>温度和时间:<br>25~55℃ 3 小时--><br>55℃ 9 小时--><br>55~25℃ 3 小时--><br>25℃ 9 小时  |
| 3.4.14<br>温度寿命测试<br>Temperature life     | 外观无任何损坏<br>Appearance: no damage;<br>测试后接触电阻:最大40mΩ下.<br>After test contact resistance: 40mΩ Max.<br>绝缘电阻: 最小100MΩ以上<br>Insulation resistance:100MΩ Min. | 参考测试标准: EIA-364-17<br>将样品置于105±2℃下120 小时, 结束后, 将测试样品置于常温下 1~2 小时后进行测试;  |
| 3.4.15<br>焊锡性<br>Solderability           | 焊接部位吃锡面积在95%以上<br>The termination is at least 95% Covered by a continuous solder coating.  | 参考测试标准: EIA-364-52<br>将焊锡部分尾部浸到融化的锡炉里, 温度 245±5℃, 4~5 秒<br>Comply with method EIA-364-52<br>Dip solder tails into the molten solder held at 245±5℃ for 4~5 seconds. |





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|-----------------------|--------------------|--------------------|------|------|----|
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| Product specification | USB TYPE C 3.113AX | PS-0105            |      |      |    |
|                       |                    | Page               | 9OF9 | Rev. | X1 |

| 项目 Items  | 规格要求 Requirements |     |     |     |     | 测试方法 Test Methods |     |     |   |   |   |
|---|-------------------|-----|-----|-----|-----|-------------------|-----|-----|---|---|---|
| 测试项目 Test Item  | 群组测试 Test Group   |     |     |     |     |                   |     |     |   |   |   |
|   | A                 | B   | C   | D   | E   | F                 | G   | H   | I | J | K |
| 产品外观 Visual Examination                               | 1,7               | 1,8 | 1,8 | 1,4 | 1,6 | 1,7               | 1,6 | 1,3 |   |   |   |
| 低功率接触阻抗 Contact Resistance Low Level                  | 3,6               | 3,7 | 3,5 |     | 3,5 | 3,5               | 3,5 |     |   |   |   |
| 绝缘阻抗 Insulation Resistance                            |                   |     | 6   |     |     | 6                 |     |     |   |   |   |
| 耐电压 Dielectric Withstanding Voltage                   |                   |     | 7   |     |     |                   |     |     |   |   |   |
| 温度上升 Temperature Rise                                 |                   |     |     | 3   |     |                   |     |     |   |   |   |
| 插拔耐久 Durability                                       |                   | 5   |     |     |     |                   |     |     |   |   |   |
| 振动 Vibration  | 5                 |     |     |     |     |                   |     |     |   |   |   |
| 机械冲击 Shock (Mechanical)                               | 4                 |     |     |     |     |                   |     |     |   |   |   |
| 插拔力 Mating/Unmating Forces                            |                   | 4,6 |     |     |     |                   |     |     |   |   |   |
| 热冲击测试 Thermal Shock                                   |                   |     | 4   |     |     |                   |     |     |   |   |   |
| 盐雾腐蚀 Salt Spray                                       |                   |     |     |     |     |                   | 4   |     |   |   |   |
| 高温高湿循环 High temperature & High Humidity Cycle         |                   |     |     |     |     | 4                 |     |     |   |   |   |
| 温度寿命测试 Temperature life                               |                   |     |     |     | 4   |                   |     |     |   |   |   |
| 焊锡性 Solderability                                     |                   |     |     |     |     |                   |     | 2   |   |   |   |
| SMT 产品耐 Reflow 高温 Withstand Temperature For SMT type. | 2                 | 2   | 2   | 2   | 2   | 2                 | 2   |     |   |   |   |
| Sample Size*  | 5                 | 5   | 5   | 5   | 5   | 5                 | 5   | 5   |   |   |   |