



Dong guan Kun jia Electronics Co., Ltd.

文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	USB TYPE C	PS-0090			
		Page	1OF10	Rev.	X2

***** 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	4~10

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Dong guan Kun jia Electronics Co., Ltd.

文件名称 System Name:	产品品名 Description:	文件编号 Document No.:		
Product specification	USB TYPE C	PS-0090		
		Page	20F10	Rev. X2

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Dong guan Kun jia Electronics Co., Ltd.

文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	USB TYPE C	PS-0090			
		Page	3OF10	Rev.	X2

1. 概述 **Scope:**

1.1 说明 **Content**

此份产品规格书是针对由东莞昆嘉电子有限公司设计和制造的 **USB TYPE C** 产品所定义的产品性能和测试方法。适用料号：3.106A0

This product specification defines the product performance and the test methods to ensure the performance of the **USB TYPE C**, which is designed and manufactured by Kunshan Jiahua Electronics Co., Ltd. Applicable material No: 3.106A0

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.



Dong guan Kun jia Electronics Co., Ltd.

文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	USB TYPE C	PS-0090			
		Page	4OF10	Rev.	X2

3. 规格要求 Requirements:

3.1 应用条件 Application Condition:

3.1.1 额定电流 Current Rating: 5 A Max

3.1.2. 额定电压 Voltage Rating: AC 20Vr.m.s.

3.1.3 使用环境 Operating Environment:

温度: -25°C to +85°C,相对湿度:45%~85%,此条件下功能不可失效。

Temperature:-25°C to +85°C, Relative Humidity:25%~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昆嘉系统文件:**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.

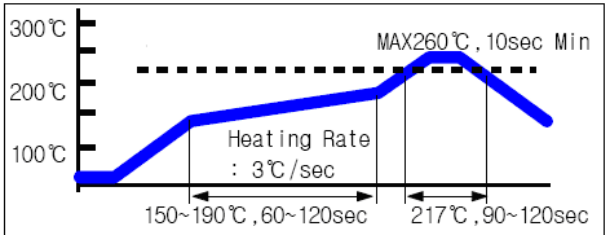


Dong guan Kun jia Electronics Co., Ltd.

文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	USB TYPE C	PS-0090			
		Page	50F10	Rev.	X2

3.4 测试规范和方法 Test Requirements and Methods

Table I: 性能要求 Performance Requirements

项目 Items	规格要求 Requirements	测试方法 Test Methods
3.4.1 产品外观 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 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 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。 Comply with method EIA-364-18 Appearance, functional, and dimensional inspection complies with applicable specification and document.
3.4.2 SMT 产品耐 Reflow 高温 Withstand Temperature For SMT type.	外观: 良好 Appearance: Good	 IR 1 次 For IR one time.
3.4.3 低功率接触阻抗 Low Level Contact Resistance	初始接触阻抗: 40mΩ Max. 测试后接触阻抗: Δ 10mm Ω Max; Initial: 40mΩ Max; After Test: Δ 10mm Ω Max;	参考测试标准: EIA-364-23 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; 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 绝缘阻抗 Insulation Resistance	100 MΩ Min.	参考测试标准: EIA-364-21. 使用 500V 直流电压 1Min± 5 秒, 在相邻两端子或接地片之间 Comply with method: EIA-364-21 Apply a voltage 500VDC 1Min± 5 Sec. between adjacent terminals or between terminal and ground.
3.4.5 耐电压 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 No evidence of breakdown、flash burn caused by short circuit and insulation destruction. Current leakage: 0.50 mA Max.	参考测试标准: EIA-364-20; 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 Comply with method: EIA-364-20 Apply a voltage 100VAC(apply 250V AC After test) for 1 Min± 5Sec between adjacent terminals or between terminals to ground.



Dong guan Kun jia Electronics Co., Ltd.


文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	USB TYPE C	PS-0090			
		Page	6OF10	Rev.	X2

项目 Items	规格要求 Requirements	测试方法 Test Methods
3.4.6 温度上升 Temperature rise	额定电流状态下, 使用热电偶方式测量, 只串联电源 Pin The power source terminal shall be connected in a direct series. The temperature rise shall be measured by thermocouple when the temperature of terminal reaches to rated current with resistive load.	温度上升 30K Max. Temperature rise: 30K Max.
3.4.7 耐久插拔 Durability	耐久插拔 10000 次. 测试后, 绝缘阻抗、接触阻抗、耐压必须符合要求。 Durability 10000 cycles. After Test, Insulation Resistance、Contact Resistance、Withstand Voltage must be satisfied.	参考测试标准: EIA-364-09; 公母互配进行插拔测试, 每小时不超过 500 次. Comply with method EIA 364-09 Mated connectors to be tested , as a rate of 500 cycles Max. per hour .
3.4.8 振动 Vibration	1. 接触阻抗 : 100 mΩ Max. 2. 瞬断 : 1 u sec Max. 1. Contact Resistance: 100 mΩ Max. 2. Discontinue: 1u sec Max.	参考测试标准: EIA-364-28, 测试电流: 100mA. 每个方向振动 2H, 振幅: 1.5mm, 频率每分钟 10-55-10HZ Comply with EIA-364-28 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
3.4.9 机械冲击 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。 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 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. Comply with EIA-364-27 Condition B Duration Pulse : 11 msec., Wave form : half sine, 735 m/s ² {75G}, Both direction of mutually perpendicular axes. Total 18 shocks
3.4.10 插入力/拔出力 Mating force & Un-mating force	插入力 5N~20N 拔出力 8N~20N Insertion Force 10N~20N Withdrawal Force 5N~20N	参考测试标准: EIA-364-13. 测试过程中产品运动速度 : 每分钟 12.5mm Comply with method EIA -364-13. Connector mated/unmated at maximum rate of 12.5 mm per minute.



Dong guan Kun jia Electronics Co., Ltd.

文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	USB TYPE C	PS-0090			
		Page	7OF10	Rev.	X2

项目 Items	规格要求 Requirements	测试方法 Test Methods
3.4.11 破坏强度测试 Destroy strength Test	大于 20N 20 N Max	固定好的产品用直径0.80~1.0mm 的钢针 向塑件舌片顶出。 
3.4.12 器件垂直拔起测试 Welding Strength Test	将产品在焊接的反方向（垂直于 PCB）推离 PCB,或从 PCB 上拔脱的最大力量 Test the maximum strength as pull test specimen away from the PCB board perpendicularly, or withdraw the test specimen from the PCB board	大于 100N >100N
3.4.13 旋转测试 360° rotation test (on/off)360°	在任何四个方向上，没有任何不连续性或短路到大于 1μs No any discontinuities or Shorting to shell greater than 1μs duration in any of four orientations	插头应与电缆和重叠，插座应安装在双层 PCB，PCB 板的厚度为 0.8~1.0mm，PCB 应置于容器不超过 5mm 的距离焊尾两侧，8N 拉力应适用于从界面垂直方向的线，期至少 10 秒，包括 4 个方向。 The plug should be with cable and overmold, receptacle should be mounted on a 2-layer PCB, PCB thickness is between 0.8 and 1.0mm, the PCB shall be clamped on either side of receptacle no further than 5mm away from the solder tail, 8N tensile force shall be applied to the cable in a Perpendicular direction from interface, period is at least 10 seconds, including 4 orientations
3.4.14 热冲击 Thermal Shock	无机械损伤。接触电阻不超过 50 毫。 No mechanical damage. Contact resistance is not Exceed 50 milliohms.	我的测试条件 10 个周期 - 55 度 C 和 C + 85degree 交配连接器 按照 EIA 364-32, Test Condition I 10 Cycles -55 degree C and +85degree C. Mate Connector Per EIA 364-32,
3.4.115 盐雾实验 Salt Spray	1. 测试后接触阻抗: 100mΩ Max. 2. 外观: 良好 1. After the test LLCR: 100mΩ Max. 2. Appearance: Good	参考测试标准: EIA-364-26 盐水温度: 35±2℃,浓度 5±1%, 时间: 48 小时。 Comply with method EIA-364-26. Salt solution temperature 35±2℃, Concentration 5±1%, Duration: 48H.



Dong guan Kun jia Electronics Co., Ltd.

文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	USB TYPE C	PS-0090			
		Page	8OF10	Rev.	X2

项目 Items	规格要求 Requirements	测试方法 Test Methods
3.4.16 混合气体 Mixed flowing gas	1. 试验后接触阻抗: 40mΩ Max; 2. 无外观异常 . 1.After testing contact resistance: 40mΩ Max; 2.Without distinct damage in appearance	参考测试标准: EIA-364-65 配合后的产品在以下条件下测试: 浓度: 10±3ppm 温度: 40±2°C 相对湿度: 70±5% 时间: 7day Mated connectors shall be subjected to the following condition: Concentration: 10±3ppm Temperature: 40±2°C Relative humidity: 70±5% Period: 7 day
3.4.17 高温高湿循环High temperature &High Humidity Cycle	外观无任何损坏: Appearance:no damage 测试后接触电阻: 最大 50mΩ After test contact resistance:50m Ω Max. 绝缘电阻: 最小 100MΩ Insulation Resistance: 100 MΩ Min.	相对湿度 95~100% 温度和时间 25~55° C 3 小时 → 55° C 9 小时 → 55~25° C 3 小时 → 25° C 3 小时 → Expose to a relative humidity of 95~100% Temperature and time: 25~55° C 3 hours → 55° C 9 hours → 55~25° C 3 hours → 25° C 3 hours → EIA-364-31B
3.4.18 耐热测试 Temperature life	无机械损伤和可见腐蚀。 接触电阻不超过 50 毫。 No mechanical damage and visible corrosion. Contact resistance is not exceed 50 millionhs.	配合连接器, 并受 105 °C 条件为 120 小 时。 每 eia-364-17 条件 Mate connectors, and subject to the conditions of 105 °C for 120 hours. Per EIA-364-17 condition A
3.4.19 可焊性 Solderability	焊接部位吃锡面积在95%以上 . The termination is at least 95% Covered by a continuous solder coating.	参考测试标准: EIA-364-52 将焊锡部分尾部浸到融化的锡炉里, 温度 245±5°C, 4~5 秒 Comply with method EIA-364-52 Dip solder tails into the molten solder held at 245±5 °C for 4~5 seconds.
3.4.20 耐湿度 Humidity Verification	测试后, 绝缘阻抗、接触阻抗、耐压必 须符合要求。 After Test, Insulation Resistance、 Contact Resistance、Withstand Voltage must be satisfied.	参考测试标准: EIA-364-31, Method II 公母互配在以下条件中放置 96 小时: 温度; 40 °C 相对湿度: 90%~95% Comply with method EIA-364-31, Method II. Mated connectors to 96 hours at 40 °C with 90~95% relative humidity.



Dong guan Kun jia Electronics Co., Ltd.

文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	USB TYPE C	PS-0090			
		Page	9OF10	Rev.	X2

项目 Items	规格要求 Requirements	测试方法 Test Methods
3.4.21 耐低温 Cold Resistance	测试后接触阻抗为100mΩ 最大 外观没有损伤. 100 milliohms Max. after test Visual: No Damage	参考测试标准: EIA-364-59 公母互配,将样品放置在-40 ℃± 3 ℃ 低温下保持 120 小时.然后放置在标准环境中 1 小时后检测产品. Comply with method EIA-364-59. Mate connectors exposed 1 Hour after being exposed 120H under -40 ±3 ℃.were tested
3.4.122 特性阻抗 Differential Impedance	1.测试后接触阻抗: 75 ohms min and 105 ohms max. Test after Impedance 75 ohms min and 105 ohms max. 400 ps rise time (20%-80%).	参考测试标准: EIA-364-108 This test ensures that the D+/D- lines of the adapter assembly have the proper impedance. For the entire adaptor assembly.
3.4.23 插入损耗 Differential Insertion Loss	1.测试时信号衰减量0.7dB max. - 0.7 dB max @ 400 MHz	参考测试标准: EIA-364-101 This test ensures the D+/D- pair of an adapter assembly can provide adequate signal strength to the receiver.
3.4.24 反射损耗 Differential Return Loss	1.测试时信号反射量: ≤ - 15 dB to 2.5 GHz Normalized with 85 ohms.	参考测试标准: EIA-364-102 This test ensures the D+/D- pair of an adapter assembly can provide adequate signal strength to the receiver.
3.4.25 眼图 Intra-pair Skew	1.测试后, 信号波频落差: 20 ps max. 20 ps max. 400 ps rise time (20%-80%).	参考测试标准: EIA-364-103 This test ensures that the signal on both the D+ and D- lines of adapter assembly arrive at the receiver at the same time.



Dong guan Kun jia Electronics Co., Ltd.

文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	USB TYPE C	PS-0090			
		Page	10OF10	Rev.	X2

测试项目 Test Item	群组测试 Test Group												
	A	B	C	D	E	F	G	H	I	J	K	L	M
产品检查 Examination of Product	1,14	1,8	1,4	1,8	1,4	1,6	1,3	1,8	1,8	1,6	1,6	1,3	1,4
耐焊锡热 Withstand Temperature For SMT type (1cycle)	2,	2		2		2		2		2			2
低功率接触阻抗 Contact Resistance Low Level	3,6,12	3,6		3,5		3,5		3,5	3,5	3,5	2,4		
绝缘阻抗 Insulation Resistance				6				6	6				
耐电压 Dielectric Withstanding Voltage				7				7	7				
温度上升 Temperature Rise					3								
插拔耐久 Durability	5	5											
振动 Vibration	9												
机械冲击 Shock (Mechanical)	8												
插拔力 Mating/Unmating Forces	4,7,13	4,7											
破坏强度测试 Un-mating force							2						
器件垂直拨起测试 Welding Strength Test													3
旋转测试 360° rotation test (on/off)360°			3										
热冲击 Thermal Shock				4									
盐雾腐蚀 Salt Spray										4			
混合气体测试 Mixed Flowing Gas											3,5		
高温高湿循环 High temperature & High Humidity Cycle								4					
耐热测试 Temperature life						4							
可焊性测试 Solder ability												2	
耐湿 Humidity									4				
耐低温 Cold Resistance													
特性阻抗 Differential Impedance													
插入信号衰减 Differential Insertion Loss													
反射信号衰减 Differential Return Loss													
眼图 Intra-pair Skew													
Sample Size*	5	5	5	5	5	5	5	5	5	5	5	5	5