



Kunshan Jiahua Electronics Co., Ltd.

文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	0.50Pitch 浮 动 式 BTB	PS-0083			
	CONNECTOR	Page	1 OF 9	Rev.	X1

***** 目 录 Content *****

项 目 Item

内 容 Description

页 次 Page

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文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	0.50Pitch 浮 动 式 BTB	PS-0111			
	CONNECTOR	Page	2 OF 11	Rev.	X1

***** Revised history *****

Edition	ECN NO.	Revised Page	Remark
X1		Initial Release	

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文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	0.50Pitch 浮动式 BTB	PS-0111			
	CONNECTOR	Page	3 OF 11	Rev.	X1

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 **0.50Pitch 浮动式 BTB CONNECTOR** 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 **0.50Pitch Floating BTB CONNECTOR**, 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:

IEC 60512

IEC 68

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.

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Kunshan Jiahua Electronics Co., Ltd.

文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	0.50Pitch 浮动式 BTB	PS-0111			
	CONNECTOR	Page	4 OF 11	Rev.	X1

3. 规格要求 Requirements:

3.1 应用条件 Application Condition:

3.1.1 额定电流: Signal Pin:0.5A Power Pin:3A

CURRENT RATING: Signal Pin:0.5A Power Pin:3A

3.1.2 额定电压: Signal Pin :50 Volt AC. Power Pin: 200 Volt AC

VOLTAGE RATING: Signal Pin :50 Volt AC. Power Pin: 200 Volt AC

3.1.3 使用环境 Operating Environment:

温度: -55°C to +105°C。

Temperature:-55°C to +105°C.

3.1.4 储存环境 Storage Environment:

温度: -10°C to +60°C,相对湿度: 85% MAX,此条件下功能不可失效。

Temperature:-10°C to +60°C, Relative Humidity: 85% MAX, Without loss of function.

3. 1.5 产品构成/材料 CONSTRUCTION AND MATERIAL.

塑胶主体 HOUSING : 热塑性塑胶 (THERMOPLASTIC) ;

接触端子 CONTACT : 磷青铜 (PHOSPHOR BRONZE)

电源端子 POWER CONTACT:铜合金 (COPPER ALLOY)

焊片 PAD:黄铜 (BRASS)

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第 4 节的各项规格要求。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 4. Unless otherwise specified, all tests and measurements are to be performed under the following conditions:

温度 Temperature: 5 °C to 35°C

相对湿度 Relative Humidity: 45% to 85%

大气压 Atmospheric Pressure: 86kPa~106kPa.

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Kunshan Jiahua Electronics Co., Ltd.

文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	0.50Pitch 浮动式 BTB	PS-0111			
	CONNECTOR	Page	5 OF 11	Rev.	X1

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

项目 ITEM	规格 STANDARD	测试规范 PROCEDURES
电性能 ELECTRICAL		
接触阻抗(低功率) Contact resistance (Low Level)	初值最大信号 pin: 70mΩ 电源 Pin: 20mΩ Signal Pin: 70mΩ Max Initial Power Pin: 20mΩ Max Initial	公母端连接器配合后使用最大 20 mV 电压, 最大 100mA 电流进行测试. 参考 IEC 60512-2 Mated connector, 20 mV Max. Open circuit at 100 mA Max. IEC 60512-2
耐电压 Dielectric withstanding Voltage	不能有电火花产生, 漏电流不能超过 0.5mA. No creeping discharge or flash over shall occur, Current leakage: 0.5mA Max.	信号端子使用交流 150V, 保持 1 分钟, 测试两相连间之端子. 电源端子使用交流 600V, 保持 1 分钟, 测试两相连间之端子参考 IEC 60512-2 Signal pin 150V AC 1 minute. Test between adjacent circuits and contact. Power pin 600V AC 1 minute. Test between adjacent circuits and contact IEC 60512-2
绝缘阻抗 Insulation Resistance	信号端子至少 100 MΩ, 电源端子至少 1000 MΩ Signal Pin 100MΩ Min, Power Pin 1000MΩ Min	信号端子使用直流电 100V, 电源端子使用直流电 250V 测试两相连间端子保持 1 分钟. 参考 IEC 60512-2 Signal Pin 100V DC and power pin 250V for 1 minute. Test between adjacent circuits and contact. IEC 60512-2

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文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	0.50Pitch 浮动式 BTB CONNECTOR	PS-0111			
		Page	6 OF 11	Rev.	X1

机械性能 MECHANICAL		
可焊性 Solderability.	焊锡表面浸渍超过 95%. Wet solder coverage: 95%Min	焊锡温度: 240°C±3°C 焊锡时间: 3 秒 参考参考 IEC 60512-6 IEC 68-2-20 Solderability temperature: 240°C±3°C. Immersion duration: 3 seconds. Refer to IEC 60512-6 IEC 68-2-20
振动 Vibration	不得有超过 1 微秒的瞬断产生, 产品外观无损伤、破裂、零件无松动 No electrical discontinuity of 1µs. No damage, crack and looseness of parts	公母端连接器配合, 5 分钟内振动频率为 10-55-10 Hz, 半振幅 0.75mm, 三个相互垂直的方向进行振动, 每个方向 10 cycles, 测试过程加载直流电 100mA. 参考 IEC 60512-4, Subject mated connectors to 10-55-10 Hz traversed in 5 minute at 0.75 mm amplitude each of 3 mutually perpendicular planes, each axial 10 cycles .passing DC 100mA current during the test. IEC 60512-4
机械冲击 Physical shock	不得有超过 1 微秒的瞬断产生, 产品外观无损伤、破裂、零件无松动 No electrical discontinuity of 1 µs. No damage, crack and looseness of parts	加速度: 490 m/s ² (50g _n) 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 3 次, 测试过程加载直流电 100mA. 参考 IEC 60512-4 Accelerated Velocity: 490 m/s ² (50 g _n) 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 3 drops, passing DC 100mA current during the test. IEC 60512-4,

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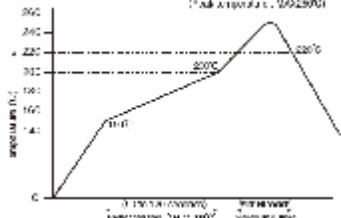
文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	0.50Pitch 浮动式 BTB	PS-0111			
	CONNECTOR	Page	7 OF 11	Rev.	X1

插拔耐久性 Durability	低功率接触阻抗信号 pin: 80mΩ 电源 Pin: 30mΩ LLCR Signal Pin: 80mΩ Max Initial Power Pin: 30mΩ Max Initial	机器插拔公母连接器 100 次, 速度为每分钟 10 次. 参考 IEC 60512-5 Machine mate and unmate samples for 100 cycles at a speed of 10 times/min. IEC 60512-5
插拔力 Mating and Unmating Force	插入力: 20N 最大 (耐久前后) Mating Force: 20N Max (Before and after test) 拔出力: 4N Min(耐久前)3N Min (耐久后) Unmating Force: 4N Min (Before test) 3N Min (After test)	插拔公母连接器, 速度 25±3mm/分钟。参考文件 IEC 60512-7 Measure the force required to mate and unmate the connector. Speed: 25±3mm/minute.IEC 60512-7
焊接剥离力测试 Welding peeling force test	产品剥离力: 50N Min Connector peeling force: 50N Min	产品焊接到 PCB, 沿 X/Y 正反两方向施加 50N Min 的力, 板剥离 Welding connector to PCB, move along directions X/ Y axes as 50N/Min
环境性能 ENVIRONMENTAL		

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Kunshan Jiahua Electronics Co., Ltd.

文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	0.50Pitch 浮动式 BTB	PS-0111			
	CONNECTOR	Page	8 OF 11	Rev.	X1

<p>热冲击 Thermal shock</p>	<p>1.低功率接触阻抗: Signal Pin: 80mΩ Max Power Pin: 30mΩ Max</p> <p>2.绝缘阻抗: Signal Pin: 100MΩ Min Power Pin : 1000MΩ Min</p> <p>3. 产品外观无损伤、破裂、零件无松动</p> <p>1.Contact Resistance: Signal Pin: 80mΩ Max Power Pin: 30mΩ Max</p> <p>2. Insulation Resistance: Signal Pin: 100MΩ Min Power Pin : 1000MΩ Min</p> <p>3. No damage, crack and looseness of parts.</p>	<p>公母配合后测试, 温度从-55℃到 85℃, 高低温放置时间均 30 分钟。转移时间 2-3 分钟内, 共 5 次循环。 参考 IEC 60512-6 IEC 68-2-14 Temperature -55℃ → +85℃ Time 30 → 30 min. under 5 cycles. (Relocation time to chamber : within 2~3 MIN) Refer to IEC 60512-6 IEC 68-2-14</p>
<p>耐回焊炉焊锡热 Resistance to Reflow Solder Heat</p>	<p>端子无松动、掉落不良 No loose contacts or deformation.</p> 	<p>无铅焊锡: 预热段 100~150 °C 至少 60 秒, 在 220 °C 最少保持 60 秒钟, 最高温度 260 °C.参考 IEC 60512-6 IEC 68-2-20 For Lead free plating type: Preheat 100~150 °C 60Seconds min, Heat 220 °C min for 60 Seconds min. Peak 260 °C. Refer to IEC 60512-6 IEC 68-2-20</p> <p>2. 烙铁焊: 360° C MAX for 5sec</p>
<p>盐雾腐蚀 Salt Spray</p>	<p>1. 产品外观无损伤、破裂、零件无松动</p> <p>2.低功率接触阻抗 Signal Pin: 80mΩ Max Power Pin: 30mΩ Max</p> <p>1. Facade No damage 2.Contact Resistance: Signal Pin: 80mΩ Max Power Pin: 30mΩ Max</p>	<p>公母配合, 测试温度 35℃±2℃, 盐雾浓度 5±1%, 时间 24 小时. 参考 IEC 60512-6 IEC 68-2-11 Subject mated samples. 35℃±2℃, 5±1% Salt condition, 24 hours Refer to IEC 60512-6 IEC 68-2-11</p>

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Kunshan Jiahua Electronics Co., Ltd.

文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	0.50Pitch 浮动式 BTB CONNECTOR	PS-0111			
		Page	9 OF 11	Rev.	X1

<p>耐湿热性能 Damp Heat</p>	<p>1.低功率接触阻抗: Signal Pin: 80mΩ Max Power Pin: 30mΩ Max</p> <p>2.绝缘阻抗: Signal Pin: 100MΩ Min Power Pin : 1000MΩ Min</p> <p>3. 产品外观无损伤、破裂、零件无松动</p> <p>1.Contact Resistance: Signal Pin: 80mΩ Max Power Pin: 30mΩ Max</p> <p>2. Insulation Resistance: Signal Pin: 100MΩ Min Power Pin : 1000MΩ Min</p> <p>3. No damage, crack and looseness of parts.</p>	<p>测试条件如下: 温度: 40±2℃ 相对湿度: 90~95% 时间: 96 小时.</p> <p>参考 IEC 60512-6 IEC 68-2-3</p> <p>Mated connectors shall be subjected to the following condition. Temperature: 40±2℃ Relative humidity: 90~95% Duration: 96h IEC 60512-6 IEC 68-2-3</p>
<p>耐低温性能 Cold Resistance</p>	<p>1.低功率接触阻抗: Signal Pin: 80mΩ Max Power Pin: 30mΩ Max</p> <p>2. 产品外观无损伤、破裂、零件无松动</p> <p>1.Contact Resistance: Signal Pin: 80mΩ Max Power Pin: 30mΩ Max</p> <p>2. No damage, crack and looseness of parts.</p>	<p>测试条件如下: -55℃±2℃, 保持 96 小时,参考 IEC 60512-6 IEC 68-2-1</p> <p>Test condition -55℃±2℃, 96 Hours. Refer to IEC 60512-6 IEC 68-2-1</p>

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文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	0.50Pitch 浮动式 BTB	PS-0111			
	CONNECTOR	Page	10 OF 11	Rev.	X1

耐干热性能 Dry Heat Resistance	<p>1.低功率接触阻抗: Signal Pin: 80mΩ Max Power Pin: 30mΩ Max</p> <p>2. 产品外观无损伤、破裂、零件无松动</p> <p>1.Contact Resistance: Signal Pin: 80mΩ Max Power Pin: 30mΩ Max</p> <p>2. No damage, crack and looseness of parts.</p>	<p>测试条件如下: 105°C±2°C, 保持 96 小时,参考 IEC 60512-6 IEC 68-2-2</p> <p>Test condition 105°C±2°C, 96 Hours. Refer to IEC 60512-6 IEC 68-2-2</p>
高低温测试	不能出现不导通	公母互配导通状态, 室温 20°C, 2h 内降低温度至-20 °C (持续 2h), 2h 内温度爬升至 50 °C (持续 2h), 2h 内温度降低至-20 °C (持续 2h), 测试 30 轮次; (建议温度升降速率: 1° /分钟)
温度储存	测试后焊脚、接触区不能有腐蚀、镀层脱落不良	公母独立状态, 室温 20°C, 2h 内降低温度至-40 °C (持续 2h), 2h 内温度爬升至 70 °C (持续 2h), 2h 内温度降低至-20 °C (持续 2h), 测试 30 轮次; (建议温度升降速率: 1° /分钟)
温升 Temperature rise	<p>额定电流状态下, 使用热电偶方式测量, 只串联电源 Pin.</p> <p>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.</p>	<p>电源端子通电流 3A,5h 温度上升 30°C Max. 参考 IEC 60512-3</p> <p>Passing DC 3A current on power pin. Open circuit 5h temperature rise: 30 °C Max. Refer to IEC 60512-3</p>

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文件名称 System Name:	产品品名 Description:	文件编号 Document No.:			
Product specification	0.50Pitch 浮动式 BTB CONNECTOR	PS-0111			
		Page	11 OF 11	Rev.	X1

6. 产品认定和测试群组 PRPDUCT QUALIFICATION AND TEST SEQUENCE

Test of Examination	测试群组 Test Group											
	A	B	C	D	E	F	G	H	I	J	K	L
	测试序列 Test Sequence											
产品检查 Examination of product	1,3	1,6	1,9	1,7	1,4	1,5	1,9	1,7	1,7	1,3	1,3	1,3
接触阻抗(低功率) Termination resistance (Low Level)		2,5	2,8	2,5		2,4	2,6	2,5	2,5			
绝缘阻抗 Insulation resistance				3,6			3,7	3,6	3,6			
耐电压 Dielectric Withstanding Voltage							4,8					
可焊性 Solderability.	2											
振动 Vibration		3										
机械冲击 Physical shock		4										
插入力 Mating Force			3,6									
拔出力 Unmating Force			4,7									
插拔耐久性 Durability			5									
焊接剥离力测试 Welding peeling force test					3							
热冲击 Thermal shock				4								
耐回焊炉焊锡热 Resistance to Reflow Solder Heat					2							
盐雾腐蚀 Salt Spray						3						
耐湿热性能 Damp Heat							5					
耐低温性能 Cold Resistance								4				
耐干热性能 Dry Heat Resistance									4			
高低温测试										2		
温度储存											2	
温升 Temperature rise												2
测试数量	5	5	5	5	5	5	5	5	5	5	5	5

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