

产品规格书

PRODUCT SPECIFICATION

BTB0.4-1 系列浮动板对板

版次 REVISION	日期 DATE	修订履历 MODIFY	作成者 REVISER
A0	2024-1-16	初版发行 INITIAL RELEASE	GY.Cen

作成部门 DEPARTMENT	作成 PREPARED	确认 CHECK	承认 APPROVED
工程部 Eng.Dept.	GY.Cen 2024/1/16	QF.Dong 2024/1/16	TS.Chen 2024/1/16

目录 Content

1 适用范围 Scope.....	02
2 参考文件 Reference Document.....	02
3 产品描述 Product Description.....	02
4 默认测试条件 Default Test Condition.....	02
5 性能要求与试验说明 Performance Requirement & Test Instruction.....	03
6 浮动量 Floating Range.....	08
7 使用注意事项 Precautions For Use.....	09

1 适用范围 Scope

本产品规格书适用于BTB0.4-1系列浮动板对板连接器的相关性能要求、测试方法及质量保证等规定。
The Specification applies to the performance requirements, test method and quality requirements of BTB0.4-1 series Floating Board to Board Connectors.

2 参考文件 Reference Document

本产品规格书参考以下规范文件作成，若有冲突，请以本规格及图纸为准。

The specification refers to the following standards, if there is any conflict, Please refer to this document.

- IEC
- JIS

3 产品描述 Product description

3.1 产品组成 Components

3.1.1 端子：铜合金；

Contact: Copper alloy;

3.1.2 塑料本体 Housing: See drawings;

3.2 额定范围 Range

3.2.1 温度范围 Temperature Range

贮藏温度 Storage temperature: $-10^{\circ}\text{C}\sim 40^{\circ}\text{C}$ 、75%RH Max.;

工作温度 Working temperature: $-40^{\circ}\text{C}\sim +125^{\circ}\text{C}$;

(潜在最高温度 Potential peak temperature)

3.2.2 额定电压、额定电流 Rated Voltage and Rated Current

额定电压 Rated Voltage: 50V AC DC;

额定电流 Rated Current: 0.4A Continuous Max./pin

4 默认测试条件 Default test conditions

除去特别指定条件的项外，试验均按以下环境条件进行。

Except for items with specified conditions, the tests are all under the following environmental conditions.

环境温度 Ambient temperature: $15\sim 35^{\circ}\text{C}$;

空气相对湿度 Relative humidity: 25%~85%;

5. 性能要求与试验说明 Performance Requirement & Test Instruction
5-1 电气特性 Electrical Performances

序号 No.	实验项目 Test Items	规格值 Specifications	条件·方法 Test conditions
1	接触电阻 Contact Resistance (Low Level)	初期: 100mΩ以下 试验后: 120mΩ以下 Initial :100m or below After each test: 120mQ or below	嵌合状态下: 四端子法/4-Probe method. 短路电流/current: 1mA 最大开放电压/voltage: 20mV 频率/frequency: 1k Hz
2	耐电压 Dielectric Withstanding Voltage	没有闪络、火花放电及绝缘破坏 最大允许电流为 2mA No flashover, spark over nor dielectric breakdown. Thing to satisfy 2mA in the maximum, permissible current.	对相邻端子间施加电压, 信号端子 100V AC 持续时间 1 分钟。 Apply voltage between adjacent terminals, signal terminal 100V AC,duration 1 minute.
3	绝缘电阻 Insulation Resistance	初期: 50MΩ以上 Initial :50MΩ Min.	对相邻端子间施加电压 100V DC 持续时间 1 分钟。 Apply a voltage of 100V DC between adjacent terminals,duration 1 minute.
4	阻抗特性 Impedance	100Ω±20%	上升时间:140 p sec(10%~90%)差动量测 试样环境阻抗: 安装在受控阻抗 PCB 夹具上的 100Ω差分源侧插座连接器 Rise time: 140 p sec (10%~90%) Differential measurement specimen environment impedance: 100Ω differential source-side receptacle connector mounted on a controlled impedance PCB fixture
5	外观 Appearance	没有对机能影响的生锈、脏污、伤、 变形等。 No rusty, stain, damage and deformation.	目视 Visual

5-2 机械特性 Mechanical Performances

序号 No.	实验项目 Test Items	规格值 Specifications			条件·方法/Test conditions
1	端子保持力 Contact Retention Force	1N Min.			以 25mm/min 的速度，把端子从塑胶本体拔出。 It shall be pulled to the contact at the speed of 25mm/min and measured the force when the contact begins to remove from the housing.
2	插拔力 Mating/Unmating Force	Pin 数	Mating force	Unmating force	以 25mm/min 的速度，对公母座进行插拔，并记录插入力和拔去力。 The plug and rec shall be mated and unmated at the speed of 25mm/min, and measured the mating force and unmating force.
		n	1.0*n N MAX.	0.03*n N MIN.	
		40	40.0N MAX.	1.2N MIN.	
		60	60.0N MAX.	1.8N MIN.	
		80	80.0N MAX.	2.4N MIN.	
100	100N MAX.	3.0N MIN.			
3	插拔耐久性 Durability	初期值 Initial: 100mΩ MAX. 试验后 After test: 120mΩ MAX. 外观 Appearance: 没有异常 Do not find abnormality.			以 25mm/min 的速度，对公母座进行 30 回重复插拔，测试试验后的接触电阻。 The plug and rec shall be mated and unmated for 30 times at the speed of 25mm/min, and measured the contact resistance after test.
4	振动试验 Vibration Test	瞬断 Discontinuity: 1μs MAX. 初期值 Initial: 100mΩ MAX. 试验后 After test: 120mΩ MAX. 外观 Appearance: 没有异常 Do not find abnormality.			振动频率/Vibration frequency : 10~55Hz 振幅/Amplitude : 1.5mm 时间/sweep time: 1minute 方向/Direction: X,Y,Z 2h
5	冲击 Shock	瞬断 Discontinuity: 1μs MAX. 初期值 Initial: 100mΩ MAX. 试验后 After test: 120mΩ MAX. 外观 Appearance: 没有异常 Do not find abnormality			加速度/Acceleration: 490m/s ² 作用时间/Time: 11msec 方向/Direction: X,Y,Z 3 times

5-3 环境特性 Environmental Performances

序号 No.	实验项目 Test Items	规格值 Specifications	条件·方法/Test conditions
1	耐热性 Heat Resistance(Life)	初期值 Initial: 100mΩ MAX. 试验后 After test: 120mΩ MAX. 外观 Appearance: 没有异常 Do not find abnormality.	公母座嵌合状态下, 放置于 125±2℃环境中 96 小时。测量试验后的接触电阻。 The mated connector is exposed in the heat chamber 125±2℃ for 96 hours, and measure the contact resistance after the test.
2	耐湿性 Humidity	初期值 Initial: 100mΩ MAX. 试验后 After test: 120mΩ MAX. 外观 Appearance: 没有异常 Do not find abnormality.	公母座嵌合状态下, 放置于 60±2℃、相对湿度 90%RH 的环境中 96 小时。测量试验后的接触电阻。 Temperature: 60℃; Humidity: 90%; Duration: 96hours;
3	耐寒性 Cold Resistance	初期值 Initial: 100mΩ MAX. 试验后 After test: 120mΩ MAX. 外观 Appearance: 没有异常 Do not find abnormality.	公母座嵌合状态下, 放置于 -40±2℃环境中 96 小时, 测量试验后的接触电阻。 The mated connector is exposed in the heat chamber -40±2℃ for 96 hours. It shall be measured the contact resistance after the test.
4	盐水喷雾试验 Salt Spray Test	初期值 Initial: 100mΩ MAX. 试验后 After test: 120mΩ MAX. 外观 Appearance: 没有异常 Do not find abnormality.	公母座嵌合状态下, 放置于 35±2℃、浓度 5±1%的盐水喷雾中 48 小时。取出之后使用纯水清洗, 干燥后测量接触电阻。 The mated connector is exposed in the salt spray chamber 35±2℃, 5±1% salt density for 48 hours. It shall be measured the contact resistance after the test.
5	SO ₂ 气体实验 SO ₂ Gas Test	没有会损害连接器功能的腐蚀 接触电阻: 初期值 Initial: 100mΩ MAX. 试验后 After test: 120mΩ MAX. 外观 Appearance: 没有异常 Do not find abnormality.	公母座嵌合状态下, 放置于 40±2℃、相对湿度 75%RH、SO ₂ 浓度 10±3ppm 的环境中 96 小时。测量试验后的接触电阻。 The mated connector is exposed in the SO ₂ gas chamber 40±2℃, 75%RH、10±3 ppm for 96 hours. It shall be measured the contact resistance after the test.

6	H₂S 气体实验 H₂S Gas Test	初期值 Initial: 100mΩ MAX. 试验后 After test: 120mΩ MAX. 外观 Appearance: 没有异常 Do not find abnormality.	公母座嵌合状态下, 放置于 40±2℃、相对湿度 75%RH、H ₂ S 浓度 3±1ppm 的环境中 96 小时。测量试验后的接触电阻。 The mated connector is exposed in the H ₂ S gas chamber 40±2℃, 75%RH、3±1ppm for 96 hours. It shall be measured the contact resistance after the test.
7	冷热冲击试验 Thermal shock test	初期值 Initial: 100mΩ MAX. 试验后 After test: 120mΩ MAX. 外观 Appearance: 没有异常 Should not have any damages	温度/Temperature: -40~+85℃ 1cycle: 1h 10 次循环/10cycles
8	温湿度循环 Temperature and humidity cycling	初期值 Initial: 100mΩ MAX. 试验后 After test: 120mΩ MAX. 外观 Appearance: 没有异常 Should not have any damages	温度/Temperature: 上限/Upper 80℃ 下限/Lower -20℃ 湿度/ Humidity : 90~95% 1cycle: 8h 10 次循环/10cycles

5-4 其他特性 Other performances

序号 No.	实验项目 Test Items	规格值 Specifications	条件·方法/Test conditions
1	焊锡性 Solder ability	浸渍部 95%以上有被焊锡覆盖 Solder shall be covered 95% or more of the area that is dipped into the bath.	将端子焊锡部用助焊剂湿润后, 放入 245±3℃ 的无铅 Sn-3.0-Ag-0.5Cu 系锡槽中浸 3±0.5 秒。 The contact of connector shall be put into the flux and dipped into Pb free solder bath(Type of Sn-3.0-Ag-0.5Cu)245±3℃、3±0.5s.

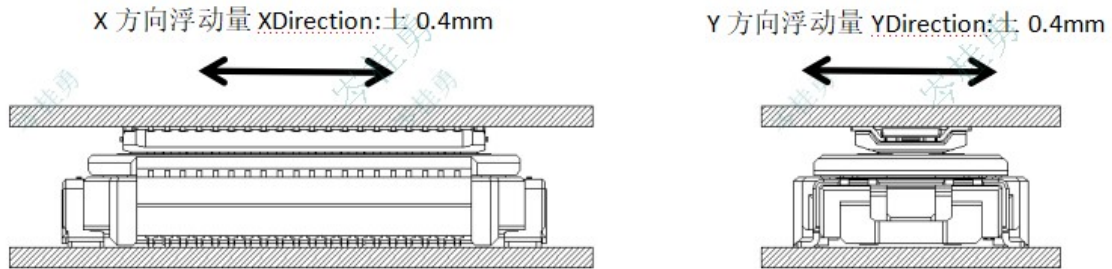
2	<p>焊锡耐热性 Solder heat resistance</p>	<p>初期值 Initial: 100m MAX. 试验后 After test: 120m Ω MAX. 外观 Appearance: 没有异常 Should not have any damages.</p>	<p>在以下记条件下, 进行焊接耐热试验。 The connector shall be tested resistance to soldering heat under the following conditions. 条件 1: 手工焊接情况下/ In case of manual soldering. 焊接温度 temperature: 350±5℃ 浸泡时间 time: 3±0.5s 次数/Time : 1 但是, 不得对端子施加过大的压力。 However, excessive pressure shall not be applied to the terminal. 条件 2: 产品回流焊/Socket reflow soldering 前处理/Baking: 125±5℃. 24h 吸水性/water absorption: 85℃. 60%RH. 168H 温度/Temperature: 查看回流焊温度条件/See temperature chat 时间/ Time : 查看回流焊温度条件/See temperature chat 3 次/3cycles</p>
<p>3 回流焊温度条件 Reflow soldering temperature conditions</p>			
<p>Profile Feature/概要条件</p>		<p>Sn-Pb 打板温度条件 Sn-Pb Eutectic Assembly</p>	
<p>Pre heat Ts min. Ts max. Time (TS min to TS max)</p>		<p>: 150℃ Min : 200℃ Max : 60~180 sec</p>	
<p>T1 温度/temperature 时间/time T2 温度/temperature 时间/time</p>		<p>: 217℃ Min :60~180 sec : 255℃ :40 sec Max</p>	
<p>T p(峰值/peak) 温度/temperature</p>		<p>:260℃ sec Max</p>	
			

6. 浮动量 Floating Range

嵌合状态下容许的浮动范围:

The allowable floating range in mating state is as below:

- ① X 方向浮动量 X Direction: $\pm 0.4\text{mm}$
- ② Y 方向浮动量 Y Direction: $\pm 0.4\text{mm}$



※注意：使用过程中请勿超出所允许的浮动量！

※Note: Do not exceed the allowed floating range during use!

7. 使用注意事项/Attention of using**• 关于嵌合**

插入时，请缓慢嵌合，以免扭曲。

• 关于连接器的连接

请勿使用连接器来固定 PCB 板。在实际应用场合中，在连接器贴片的附近位置，必须使用螺丝来进行固定。对连接器，或是模组状态下施加加速度时，请设定在 43.12m/s^2 以下。（无共振叠加）

• 产品保质期

生产日期开始起 1 年

• 中英文差异

当发现中文规格与英文规格有差异时，应以中文规格为准。

• Mating of connector

When the connector is mating, connector shall not be twisted, and then mated it slowly

• Connect of connector

shall not be held the connector only, when you are assembled for the connector and P.C.B.

When it shall be used the connector, the PCB are held by the rivet certainty near mounting of the connector.

Acceleration of connector : 43.12m/s^2 or less.(The connector shall not be added to be added to resonance acceleration.

• Product shelf life

1 year from production day.

• Difference between Chinese and English

When difference is found between Chinese Specifications and English Specifications, priority shall be given to Chinese.