Product Specification

0.4mm Pitch BTB Series Conn.

Approved By	Checked By	Prepared By
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NO.	REV.	DATE	REV PAGE	REV CONTENT	REV BY
1	Rev A0	2024.03.01	10	Initial Release	Rex.yang

1. SCOPE

This specification covers the performance, tests and quality requirements for the 0.40mm Pitch Board To Board Series Connector.

When tests are performed on the subject product line, the procedures specified specifications shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

2. REQUIREMENTS

2.1 PRODUCT DIMMENTIONS and APPLICABLE FFC/FPC&PCBLAYOUT

Product shall be of the design, construction and physical dimensions specified on the applicable Product Drawing.

See attached Product Drawing.

2.2 MATERIALS

ITEM	DISCRIPTION
Housing(主体)	High-Temp Plastic, LCP/UL94V-0,Color: Black Halogen Free
Cover(盖子)	High-Temp Plastic, LCP/UL94V-0,Color: Black Halogen Free
Terminal(端子)	Copper Alloy, Phosphor bronze
Peg(接地片)	Copper Alloy
Terminal Plated(端子电镀)	See Product Drawing Plating Information
Peg Plated(接地片电镀)	

2.3 RATINGS

ITEM	STANDARD
Operating Voltage (Max.)	60V AC/DC
Current Rating (Max.)	0.3 A
Operating Temperature	-55° C to +85° C (Note1)
Operating Humidity range	RH 20% to 80%
Storage temperature range	-10° C to +60° C (Note2)
Storage Humidity range	RH 40% to 70%　　(Note2)

Note 1: Includes temperature rise caused by current flow.

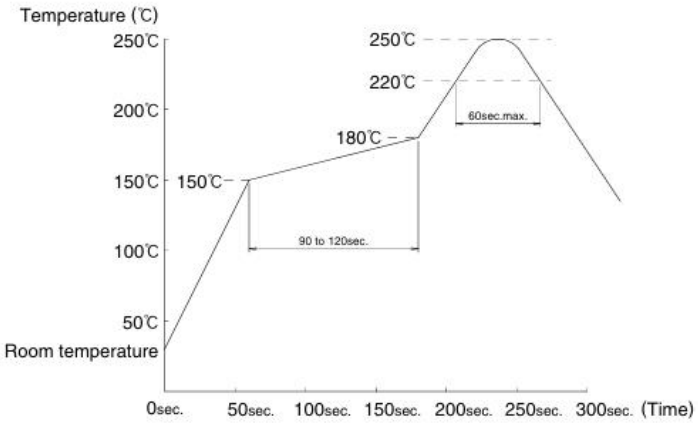
Note 2: The term “storage” refers to products stored for long period of time prior to mounting and use. Operating temperature range and humidity range covers non-conducting condition of installed connectors in storage, shipment or during transportation.

3. Test Requirements and Procedures Summary

测试项目(Test Item)		规格(Requirement)		测试方式/条件(Test Condition)
1	外观检查 Examination of Product	符合图面外观，无任何损坏异状 No physical damage.		目视 Visual inspection.
电气特性(Electrical Requirement)				
2	接触阻抗 Contact Resistance	[90] mΩ 以下. [90] mΩ Max.		将样品与适合之连接器连接，测试电压 20mV，限电流 1mA 下进行阻抗测试。(1mA, 20mV AC, 1 kHz) Mate applicable connector and measure by dry circuit, 20mV Max,1mA. (EIA-364-6B)
3	绝缘阻抗 Insulation Resistance	[50] MΩ 以上. [50] MΩ Min.		将样品与适合之连接器连接，提供相邻端子间测试电压 100V DC 进行绝缘阻抗测试。(100V DC) Mate applicable connector and apply 100V DC between adjacent terminal and ground. (EIA-364-20B /MIL-STD-202 Method 302)
4	耐电压 Dielectric withstanding Voltage	无火花、击穿异常 No flashover or insulation breakdown.		将样品与适合之连接器连接，提供相邻端子间测试电压 250V AC 进行耐电压测试。(250V AC / one minute) Mate applicable connector and apply 250V AC between adjacent terminal and ground. (EIA-364-21C /MIL-STD-202 Method 302)
机械特性(Mechanical Requirement)				
5	耐久测试 Durability Test (insertion/withdrawal)	接触阻抗 Contact Resistance	[90] mΩ 以下. [90] mΩ Max.	将适合之公母产品以 25mm±3mm/min.速度反复连续操作 30 次后，做接触电阻的测试。（30 cycles） The socket and plug shall be mated and unmated 30,Times at the speed of 25mm±3mm per minutes and measured the terminal resistance. (EIA-364-9C).
6	振动测试 Vibration Test	接触阻抗 Contact Resistance	[90] mΩ 以下. [90] mΩ Max.	振动频率：10Hz 到 55Hz，振幅：1.5mm，持续 2 小时，每个轴向(X, Y, Z) 2H，共 6H；瞬断时间小于 1μs。 Frequency: 10 to 55 Hz, single amplitude of 1.5mm, 2 hours along each X,Y,Z, total 6 hours, No electrical discontinuity of 1 μs or more. (EIA-364-28D, Condition Ⅰ/MIL-STD-202 Method 201)
		瞬间断电 Discontinuity	1 μ sec 以下. 1 μ sec Max.	
		接触阻抗 Contact Resistance	[90] mΩ 以下. [90] mΩ Max.	

测试项目(Test Item)		规格(Requirement)		测试方式/条件(Test Condition)
环境特性及其他性能(Environment Performance and Others)				
7	耐湿性（恒温恒湿） Humidity	接触阻抗 Contact Resistance	[90] mΩ 以下. [90] mΩ Max.	将样品与适合之连接器连接，置于环境温 40±2℃，相对湿度 90%-95%，测试时间 96 小时再置放于室温下 1~ 2 小时。 Mate applicable connector and expose to 40 ± 2° C, relative humidity 90% to 95% 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. 96 hours at +40℃±2℃ and humidity of 90% to 95%. (EIA-364-31B /MIL-STD-202 Method 103)
		绝缘阻抗 Insulation Resistance	[25] MΩ 以上. [25] MΩ Min.	
8	温度循环（冷热冲击） Temperature cycle	接触阻抗 Contact Resistance	[90] mΩ 以下. [90] mΩ Max.	将样品与适合之连接器连接，承受 5 cycles 冷热冲击后,置放于室温下 1~ 2 小时. 1 cycle time 如下: Temperature: -55℃→+5℃ to 35℃→+85℃→+5℃ to +35℃ Time: 30/10/30/10 (Minutes) Mate applicable connector 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 1 cycle (Transit time shall be within 3 minutes) (EIA-364-17B)
		绝缘阻抗 Insulation Resistance	[50] MΩ 以上. [50] MΩ Min.	
9	焊锡性 Solder ability	润湿性 Solder Wetting	润湿面积 95%以上，并不得有虚焊、针孔现象 95% of immersed area must show no voids, pin holes.	锡温 250±5° C，将导电端子浸入锡炉液面至 Housing 距离锡面 0.1mm 位置,焊锡时间 3~5 秒。 Tip of solder tails and fitting nails into the molten solder (held at 250±5° C) up to 0.1mm from the bottom of the housing for 3~5 seconds.
10	焊锡耐热性 Resistance to Soldering Heat	外观 Appearance	目视外观无任何变形损坏异状 No deformation of components affecting performance.	使用红外线回流焊时请参考第 4 点 When IR reflowing…Refer to paragraph 4. Reflow: At the recommended temperature profile
				使用烙铁手焊时须可符合下述焊锡条件 Soldering iron method 0.2mm from terminal tip and fitting nail tip. Soldering time: 3 seconds Max. Solder temperature : 350±5° C

4. Usage Recommendations

1. Recommended temperature profile	 Note 1: Up to 2 cycles of Reflow soldering are possible under the same conditions, provided that there is a return to normal temperature between the first and second cycle. Note 2: The temperature profile indicates the board surface temperature at the point of contacts with the connector terminals.
2. Recommended manual soldering	Manual soldering:340±10℃ for 3 seconds
3. Recommended screen thickness and Open area ratio(Pattern area ratio)	Thickness:0.12mm Openarearatio:80%
4. Board warpage	Maximum of 0.02mm at the connector center,with both ends of the connector as reference points.
5. Cleaning conditions	Cleaning is not recommended.When cleaning,please evaluate as if can deteriorate the Performance including mechanical operation and environmental resistance.
6. Precautions	*Mating and un-mating of the connectors when not soldered on the boards is not recommended as this may cause deformation oftheterminals,damage to the contacts or insulators. Mated connectors should not carry weight of the board by themselves. Provide some other support of the boards. When mating/un-mating do not twist or lift by the corners. Apply the forces evenly across the entire length and width of the connectors taking care NOT to damage or deform soldered terminations. Exercise extreme caution when mating/un-mating when the connector is mounted on a non-rigid(flexible)substrate. Do NOT pull on the flexible substrate. Slight discoloration on the insulating materials will not affect form,fit or function of the connectors.

5. Qualification and Requalification Test

Test or Examination	A	B	C	D	E	F	G	H	I	J
Examination of Product	1,7	1,5	1,5	1,7	1,3	1,3				
Contact Resistance	2,5	2,4	2,4	2,5						
Insulation Resistance	3,6			3,6						
Dielectric withstanding Voltage										
Insertion/ Withdrawal Durability		3								
Vibration			3							
Humidity	4									
Temperature Cycle				4						
Solder ability					2					
Resistance to Soldering Heat						2				

6. Packing Specification

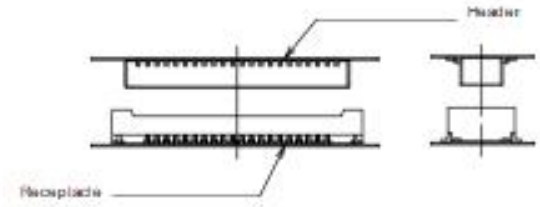
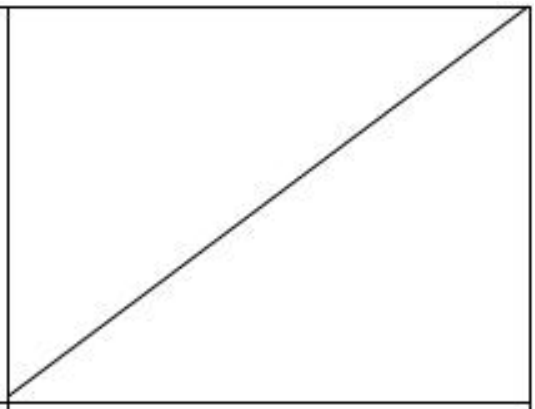
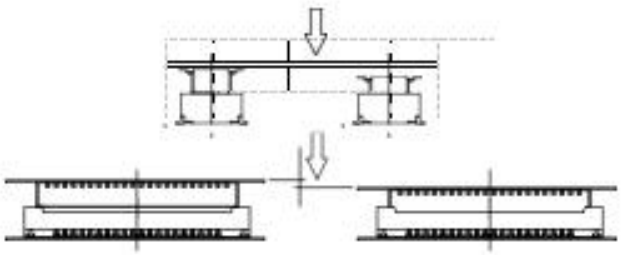
6.1 Tape and Reel Dimensions:

See attached Packing drawings.

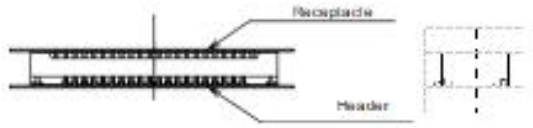
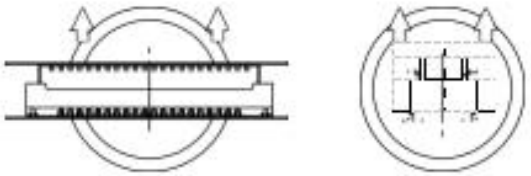
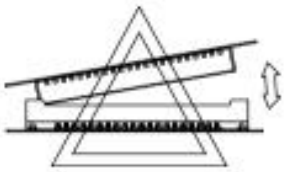
6.2 Packing Specification

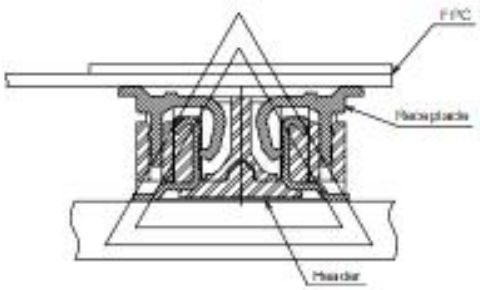
See attached Packing drawings.

7. Handling Precautions when mating the connectors

	
	Keep the connectors parallel to each other when positioning
	Do not attempt to mate the connectors staring at one end or side.
	Press-down evenly until slight resistance is felt.Overcoming this slight resistance will complete the mating receptacle with the header. A definite "click" sensation will confirm the fully mated condition.

8. Handling Precautions when un-mating the connectors

	Fully mated
	Lift even one side,keeping both boards parallel to each other.
 	When handling, circumstances prevent the connector from being kept level during the un-mating. One end may be lifted separate as shown. However, to utilize this procedure the connector must be mounted on a sufficiently rigid circuitboard. Any deflection of the board during this operation may result in damage to the connectors or solder joints. Do not attempt the start of the un-mating of the connectors from one side or corner.
	When un-mating is from the width orientation, as illustrated in the diagram to the left, connector could be damaged. Do not remove from the width orientation.



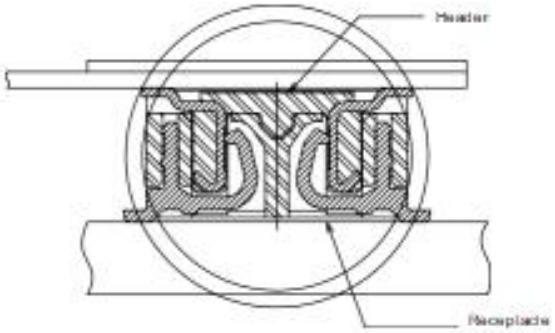
Low rigidity FPC should not be used for mounting of the receptacle.

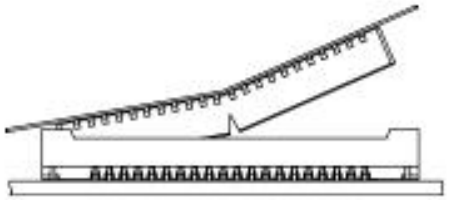
Un-mating of the connectors when the receptacle is mounted on the extremely flexible FPC can result in solder joint failure or damage to the connector itself.

It is highly recommended that the receptacle be mounted on the rigid PCB and the header on the FPC.

Contact YIBAI when specific application requires mounting of the receptacle on the FPC.

All published performance data is based on connectors mounted on rigid FPC and PCB.





Failure to exercise caution when un-mating connectors mounted on the non-rigid FPC may also result in connector breakage.