

0.8mm FS (Fine-Stack) B To B CONNECTOR**1. SCOPE**

This specification covers the requirements for product performance, test methods and quality assurance provisions of 0.8mm Fine-Stack Board to Board connector.

2. APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

- A. EIA-364: Test method for electronic and electrical component parts.
- B. MIL-STD-1344A: Test method for electronic and electrical component parts.
- C. MIL-STD-202: Test methods for electronic and electrical component parts.
- D. Test Report: 501-57566

3. REQUIREMENTS**3.1. Design and Construction**

Product shall be of the design, Construction and physical dimensions specified in the applicable product drawing.

3.2. Materials

- A: Housing: Thermoplastic, UL 94V-0, natural color.
- B: Contact: Copper Alloy, 100 μ " minimum Tin or Tin-Lead over 50 μ " minimum nickel plating over entire contact.
- C: Peg: Copper Alloy, 100 μ " minimum Tin or Tin-Lead over 50 μ " minimum nickel plating over entire contact.

3.3. Ratings

- A: Voltage rating: 50 VAC.
- B: Current rating: 0.5 A max.
- C: Operating temperature range: -25°C to 85°C.
- D: Storage temperature range: -10°C to 40°C.

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3.4. Performance and Test Description

The product shall be designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1. Unless otherwise specified, all tests shall be performed at ambient environmental conditions per EIA-364.

3.5. Test Requirements and Procedures

Test Description	Requirements	Procedure
Examination of Product	Meets requirements of product drawing	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Contact Resistance (Low level)	Initial: 40 mΩ max. Final: 60 mΩ max.	Mate connector, measure by open circuit voltage 20mV max, closed circuit 10mA max. EIA-364-23A
Insulation Resistance	Initial: 500 MΩ min. Final: 100 MΩ min.	Apply 500V DC between adjacent pins or pin and ground EIA-364-21A
Dielectric Withstanding Voltage	No breakdown.	Apply 500V AC (rms.) for 1 minute between adjacent pins or pin and ground EIA-364-20A
MECHANICAL		
Connector mating force	Pos. X 150g (1.47N) max.	Apply axial pullout force at the speed rate of 25±3mm/min. EIA-364-29A
Connector unmating force	Pos. X 20g (0.196N) min.	Apply axial pullout force at the speed rate of 25±3mm/min. EIA-364-29A
Contact retention force	Pos. X 100g (0.98N) min.	Apply axial pullout force at the speed rate of 25±3mm/min.
Durability	Contact resistance after environmental tests: 60 mΩ max. No damage	Repeat mate/unmated connector for 20 cycles. Operation speed: 25±3mm/min.
Vibration	Appearance: No physical damage Shall occur.	Frequency: 10~55~10Hz/1 minute. Amplitude: 1.5mm.
	Discontinuity: No current discontinuity of 1μ Sec.	Direction: Each of X, Y, Z 3 axes direction. Test time: 2 hours in each axis MIL-STD-1344A METHOD 2005.1 CONDITION

Figure 1 (cont)

Test Description	Requirements	Procedure
ENVIRONMENTAL		
Humidity/Temperature Cycling	Contact resistance: After environmental tests: 60 mΩ max.	Connector to 9 cycles. The test specimens shall be exposed to STEP 7a during only 5 out of 9 cycles. A 10 th cycles consisting of only step 1 through 6 is then performed. After which the test specimens shall be conditioned at ambient room conditions for 24 hours. MIL-STD-202 METHOD 106
	Insulation resistance: After environmental tests: 100 MΩ min.	
	Appearance: No damage.	
Resistance to Soldering Heat	No physical damage shall occur.	Subject connector to solder bath at 250±5°C for 5±1 seconds. MIL STD-202 METHOD 210
	<u>Lead-Free type</u> No physical damage shall occur.	<u>Lead-Free type</u> Subject connector to solder bath at 260±5°C for 5±1 seconds. MIL STD-202 METHOD 210
Solderability	Plating surface of solder-Dipping section shall be Covered with smooth Solder.	Subject connector lead to solder bath (63% Sn & 37% Pb) at 235 ±5°C for 5±0.5 seconds. MIL STD-202 METHOD 208

Note: Shall meet visual requirement, show no physical damages.

Figure 1 (end)

3.6. Product Qualification and Test Sequence

Test or Examination	Test Group							
	A	B	C	D	E	F	G	H
	Test Sequence (a)							
Examination of Product	1, 5	1, 4	1, 3	1, 5	1, 3	1, 8	1, 3	1, 3
Contact resistance	2			2, 4		2, 6		
Insulation resistance	3					3, 7		
Dielectric withstanding voltage	4					4		
Connector mating force		2						
Connector unmating force		3						
Contact retention force			2					
Durability				3				
Vibration					2			
Humidity/Temperature cycling						5		
Resistance to Soldering Heat							2	
Solderability								2

Note: (a) Numbers indicate sequence in which tests are performed.

Figure 2