



1.25mm Wire To Board Series, 90° DIP/180° SMT Connector

1. SCOPE

1.1. Content

This specification covers performance, tests, and quality requirements for 1.25mm Wire to Board CONNECTOR.

1.2. Qualification

When tests are performed on the subject product line, procedures specified in

Table with 4 columns: Test description, Requirement, Procedure. Rows include Examination of Product, Insulation Resistance, Dielectric withstanding Voltage, Low level contact resistance, Connector Retention Force, Solder ability, Vibration, Durability, Physical Shock, and Environmental.

10	Resistance to Reflow Soldering Heat	No physical damage shall occur.	Pre-soak condition, 40°C/95% R.H. for 48 hours Pre Heat: 150~180°C, 90 ± 30 s. Heat: 220°C Min., 30 ± 10 s. Peak Temp.: 260 +0/-5°C. Duration: 2 cycles.
11	Temperature Life (Heat Aging)	Appearance: No damage.	Mated Connector 85°C, 96 hours

shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

1.3. Qualification Test Results

Successful qualification testing on the subject product line was completed in the Qualification Test Report number for this testing is 501-161231 and 501-161233.

1.4. Revision Summary

Revisions to this specification include:

- Initial release of specification.

2. APPLICABLE DOCUMENTS AND FORMS

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies. 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.

2.1. TE Connectivity Specifications

- 114-160812 Application Specification
- 501-161231 Qualification Test Report
- 501-161233 Qualification Test Report

2.2. Commercial Standards and Specifications

- IEC 61984 International Standard – Safety Requirements and Tests
- IEC 60335 International Standard – Safety of Household and Similar Appliance
- IEC 60512 International Standard – Connectors for Electronic Equipment – Tests and Measurements
- IEC 60695 International Standard – Fire Hazard Testing
- UL 1977 Safety Standards – Component Connectors for Use in Data, Signal, Control, and Power Applications
- EIA-364 Electrical Connector/Socket Test Procedures Including Environmental Classifications

2.3. Reference Documents

- [109-1](#) General Requirements for Testing
- [102-950](#) Qualification of Separable Interface Connectors

3. REQUIREMENTS

3.1. Design and Construction

Product shall be of the design, construction, materials and physical dimensions specified on the applicable product drawing.

3.2. Materials

Materials used in the construction of this product shall be as specified on the applicable TE drawing.

- A. Housing: High temperature thermoplastic 94V-0.
- B. Contacts: Copper Alloy Matte-tin over nickel underplated all over.

3.3. Ratings

- A. Voltage Rating: 125VAC
- B. Current Rating: 1.0 A for AWG#26 to #30; 0.8A for AWG #32.
- C. Temperature Rating: -25°C to +85°C

3.4. Performance Requirements and Test Description

The product should meet the electrical, mechanical and environmental performance requirements specified in

	Test description	Requirement	Procedure
1	Examination of Product	Meets requirements of product drawing and Specification.	Visual inspection No physical damage
Electrical			
2	Insulation Resistance	100 MΩ Min.	Impressed voltage 500 VDC Test between adjacent circuits and contact
3	Dielectric withstanding Voltage	No creeping discharge nor flashover shall occur. Current leakage: 3 mA MAX	250 VAC for 1 minute Test between adjacent circuits and contact
4	Low level contact resistance	20 mΩ Max	Subject mated contacts assembled in housing to 20mV Max open circuit at 10mA Max.
Mechanical			
5	Connector Retention Force	4.41N(0.454 kgf) Min.	Operation Speed: 10 mm/min. Measure the force required to pin.
6	Solder ability	Wet solder coverage: 95% Min	Solder Temperature: 230 ± 5°C Duration: 5 ± 0.5 s.
7	Vibration	No electrical discontinuity greater than 1 microsecond shall occur. Appearance: No damage.	Mated samples were subjected to vibration test per axis. Test duration for each axis was 2 hours (total of 6 hours). The test current was 100 mA for all contacts.
8	Durability	Appearance: No damage.	Operation Speed: 10 cycle/min. No. of Cycles: 25 Cycles
9	Physical Shock	No electrical discontinuity greater than 1 microsecond shall occur. Appearance: No damage.	Accelerate Velocity: 490m/s ² 50G Waveform: Half-sine shock plus Duration: 11msec No. of Drops: 3 drops each to normal and reversed directions of X, Y and Z axes, totally 18 drops, passing DC 1mA current during the test.
Environmental			

10	Resistance to Reflow Soldering Heat	No physical damage shall occur.	Pre-soak condition, 40°C/95% R.H. for 48 hours Pre Heat: 150~180°C, 90 ± 30 s. Heat: 220°C Min., 30 ± 10 s. Peak Temp.: 260 +0/-5°C. Duration: 2 cycles.
11	Temperature Life (Heat Aging)	Appearance: No damage.	Mated Connector 85°C, 96 hours

. All tests shall be performed at ambient environmental conditions otherwise specified.

3.5. Test Requirements and Procedure Summary

	Test description	Requirement	Procedure
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11	Temperature Life (Heat Aging)	Appearance: No damage.	Mated Connector 85°C, 96 hours
12	Thermal Shock	Appearance: No damage.	Mated Connector -55+/-3C° (30 minutes), +85+/-2C° (30 minutes) Making this a cycle, repeat 5 cycles
13	Humidity	See note.	Samples were exposed to 40°C, 95% R.H., 240 hours
14	Salt Spray	Appearance: No damage.	Subject mated connectors to 35+1.1/-1.7C° and 5+/-1% salt condition for 48 hours. After the exposure, the samples were washed or dipped in running water of temperature lower than 37.8°C, and then air dried at 38 ± 3°C for 12 hours.

Figure 1



NOTE

Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Requalification Test Sequence shown in Figure 1.

3.6. Product Qualification and Requalification Test Sequence

Test Examination	Test Group								
	A	B	C	D	E	F	G	H	I
	Test Sequence(a)								
Examination of product	1, 3	1, 3	1, 5	1, 6	1, 5	1, 9	1, 9	1, 5	1, 3
Termination resistance						2, 7	2, 7		
Dielectric withstanding voltage						3, 8	3, 8		
Low level contact resistance			2, 4	2, 5	2, 4	4, 6	4, 6	2, 4	
Connector retention force	2								
Connector solder ability		2							
Durability			3						
Humidity temperature cycling							5		
Physical shock				4					
Resistance to reflow soldering heat									2
Salt spray					3				
Temperature life								3	
Thermal shock						5			
Vibration				3					

Figure 1



NOTE

(a) See paragraph 4.2.

(b) Numbers indicate sequence in which tests are performed.

4. QUALITY ASSURANCE PROVISIONS

4.1. Test Conditions

Unless otherwise specified, all the tests shall be performed in any combination of the following test conditions shown in Figure 2.

Temperature	15°C – 35°C
Relative Humidity	45% – 75%
Atmospheric Pressure	86.6 – 106.6 kPa

Figure 2

4.2. Qualification Testing

A. Specimen Selection

Specimens shall be prepared in accordance with applicable instruction sheets and shall be selected at random from current production.

B. Test Sequence

Qualification inspection shall be verified by testing specimens as specified in Figure 1.

4.3. Requalification Testing

If changes significantly affecting form, fit or function are made to the product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by development/product, quality and reliability engineering.

4.4. Acceptance

Acceptance is based on verification that the product meets the requirements in

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. Failures attributed to equipment, test setup or operator deficiencies shall not disqualify the product. If product failure occurs, corrective action shall be taken, and specimens resubmitted for qualification. Testing to confirm corrective action is required before resubmittal.

4.5. Quality Conformance Inspection

The applicable quality inspection plan shall specify the sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with the applicable product drawing and this specification.