

**2.0 MM Pitch Wire-To-Board Connector**

**1. SCOPE**

1.1. Contents

This specification covers the performance, tests and quality requirements for the Tyco Electronics 2.0 MM Pitch Wire-To-Board connector.

1.2. Qualification

When tests are performed on the subject product line, procedures specified in Figure 1 shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

**2. APPLICABLE DOCUMENT**

The following Tyco 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. Tyco Electronics Documents

- 109-201: Component Heat Resistance to Lead-Free Reflow Soldering.
- 501-57517: Qualification Test Report.

2.2. Commercial Standard

- EIA-364: Electrical Connector/Socket Test Procedures Including Environmental Classifications.
- JESD22-B102D: Solderability Test Method.

**3. REQUIREMENTS**

3.1. Design and Construction

Product shall be of the design, construction 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 product drawing.

3.3. Ratings

- A. Voltage: 100 volts AC.
- B. Current: 2 amperes max for wire size #28AWG
- C. Temperature: -25 to 85 °C.

3.4. Performance Requirement and Test Description

Product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure1. Unless otherwise specified, all tests shall be performed at ambient environmental conditions per EIA-364.

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3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Examination of product.	Meets requirements of product drawing.	Visual and dimensional inspection per product drawing.
<b>ELECTRICAL</b>		
Contact resistance.	20 mΩ max. initial. ΔR20 mΩ max. increase.	Subject specimens to 10 mA maximum and 20 mV maximum open circuit voltage. EIA-364-6B
Insulation resistance	500 MΩ min.	Test between adjacent contacts of unmated specimens. EIA-364-21C
Dielectric withstanding voltage	1 minute hold with no breakdown or flashover.	800 volts AC at sea level. Test between adjacent contacts of unmated specimens. EIA-364-20B, Condition I
<b>MECHANICAL</b>		
Vibration	No discontinuities of 1 microsecond or longer duration. See note.	Subject mated specimens to 10-55-10 Hz traversed in 1 minute with 1.52 mm maximum total excursion. 2 hours in each of 3 mutually perpendicular planes. EIA-364-28D, Condition I
Contact retention force	454 gf min.	Measure the contact retention force with Tensile strength tester.
<b>ENVIRONMENTAL</b>		
Solderability.	The inspected area of each lead must have 95% solder coverage minimum.	Steam Aging Preconditioning: 93 +3/-5°C, 8 hours ±15 min. Reflow Temperature: 230-245°C Reflow Time: 50-70 s. JESD22-B102D, Condition C
Resistance to reflow soldering heat.	See note.	Moisture Soak Preconditioning: 85°C and 85% RH. for 168 hours. Preheat Temp.: 150-200°C, 60-180 s. Time over liquidus (217°C): 60-150 s. Peak Temp.: 260 +0/-5°C, 20-40 s. Duration: 3 cycles. Tyco spec. 109-201, Condition B
Thermal shock.	See note.	Subject mated specimens to 5 cycles between -55 and 85°C EIA-364-32C, Condition I
Humidity temperature cycling.	See note.	Subject mated specimens to 10 cycles (10 days) between 25 and 65°C at 90 to 95% RH. EIA-364-31B, Method III, Condition B
Temperature life.	See note.	Test condition 3, test time condition B. Subject mated specimens to 85°C for 250 hours. EIA-364-17B, Method A
Salt spray.	No evident corrosion.	Subject mated specimens to 5% salt at 35°C for 48 hours. After test, rinse the specimens with water and recondition the room temperature for 1 hour. EIA-364-26B, Condition B

**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 2.

Figure 1

3.6. Product Qualification and Requalification Test Sequence

Test or Examination	Test Group						
	A	B	C	D	E	F	G
	Test Sequence (a)						
Examination of product.	1, 3	1, 3	1, 5	1, 9	1, 9	1, 5	1, 4
Insulation resistance.				3, 7	3, 7		
Dielectric withstanding voltage.				4, 8	4, 8		
Contact resistance.			2, 4	2, 6	2, 6	2, 4	
Solderability.	2						
Vibration		2					
Salt spray.			3				
Thermal shock.				5			
Humidity temperature cycling.					5		
Temperature life.						3	
Contact retention force.							3
Resistance to reflow soldering heat.							2

**NOTE** (a) Numbers indicate sequence in which test are performed.

Figure 2