Wire To Board Serial, Pitch 1.25mm

1. SCOPE

1.1. CONTENTS

This specification covers the performance, tests and quality requirements for the **Wire To Board Serial** connector.

1.2. QUALIFICATION

When tests are performed on the subject product line, the procedures specified in AMP 109 series specifications shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

2. APPLICABLE DOCUMENT

The following AMP 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 AMP DOCUMENTS

A. 109-1: General Requirements for Test Specifications

B. 109 series: Test Specification as indicated in Figure 1 (Comply with MIL-STD-202, MIL-STD-1344 and EIA RS-364)

C. Corporate Bulletin 401-76: Cross-reference between AMP test Specifications and Military or Commercial Documents.

D. 501-57299: Test Report.

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

A. Contact

Material: Copper Alloy.

Finish: Tin-Lead or Matte-Tin over Nickel plated.

B. Housing

Material: Thermoplastic, natural color.

3.3. RATINGS

A. Voltage: **100** VAC rms.

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B. Current: **1** A for AWG#28

C. Temperature: **-40** °C to **85**°C

3.4. PERFOMANCE AND TEST DESCRIPTION

The product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1 unless otherwise specified. All tests are performed at ambient environmental conditions per AMP Specification 109-1

3.5. TEST REQUIREMENTS AND PROCEDURES SUMMARY

	Test Item	Requirement	Procedure
1	Examination of Product	Meets requirements of product drawing. No physical damage.	Visual inspection
	Electrical Requirement		
2	Termination Resistance	20 mΩ Max	Subject mated contacts assembled in housing to 20mV Max open circuit at 10mA Max.
3	Insulation Resistance	1000 MΩ Min. (Initial) 100 MΩ Min. (Finial)	Impressed voltage 500 VDC Test between adjacent circuits and contact
4	Dielectric withstanding Voltage	No creeping discharge nor flashover shall occur. Current leakage: 0.5 mA MAX	500 VAC for 1minute Test between adjacent circuits and contact
5	Temperature Rising	30C° Max. under loaded rating current	Contact series-wired, apply test current of loaded rating current to the circuit, and measure the temperature rising by probing on soldered areas of contacts, after the temperature becomes stabilized deduct ambient temperature from the measured value.
	Mechanical Requirement		
6	Connector Mating Force	1 kgf/pin Max.	Operation Speed: 10 mm/min. Measure the force required to mate connector
7	Connector Unmating Force	0.1 kgf/pin Min.	Operation Speed: 10 mm/min. Measure the force required to unmate connector
8	Durability	See note.	Operation Speed: 10 cycle/min. No. of Cycles: 25 Cycles

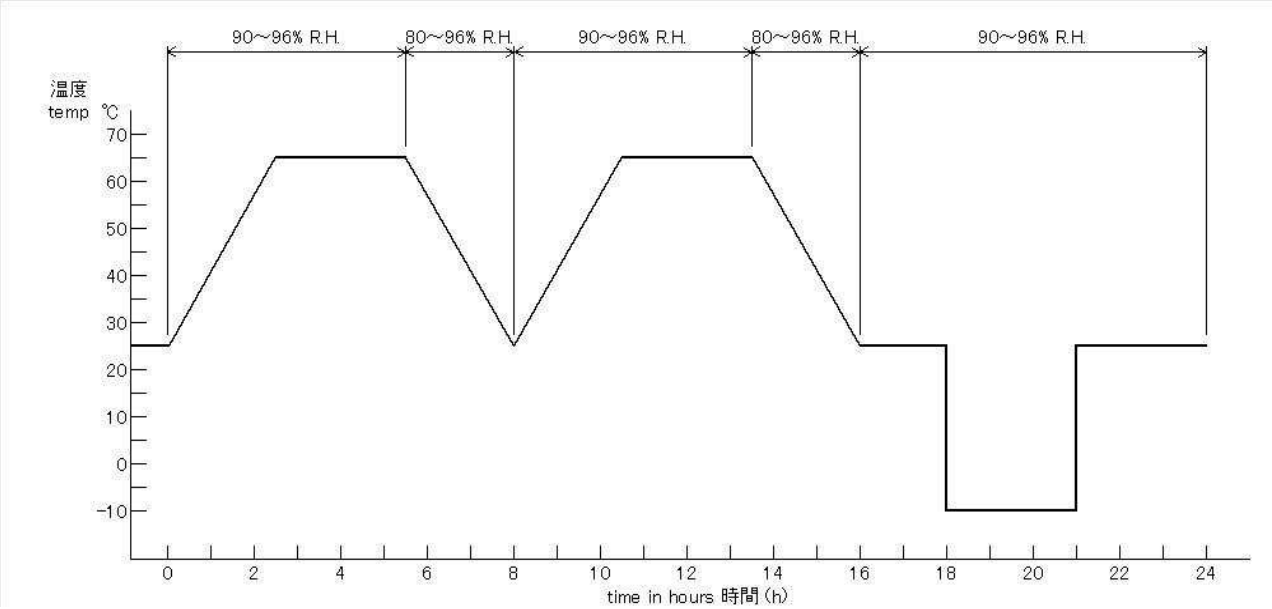
Figure 1 (cont.)

	Test Item	Requirement	Procedure
Mechanical Requirement			
9	Vibration	No electrical discontinuity greater than 1 microsecond shall occur. See note.	Subject mated connectors to 10-55-10 Hz traversed in 1 minute at 1.52mm amplitude 2 Hours each of 3 mutually perpendicular planes, passing DC 1mA current during the test.
10	Physical Shock	No electrical discontinuity greater than 1 microsecond shall occur. See note.	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 Requirements			
11	Temperature Life (Heat Aging)	See note.	Mated Connector 85C°, 250 hours
12	Thermal Shock	See note.	Mated Connector -55+/-3C° (30 minutes), +85+/-2C° (30 minutes) Making this a cycle, repeat 5 cycles
13	Humidity-Temperature Cycle	See note.	Mated Connector 25 – 65C°, 95% R.H., 10 cycles (See Figure 2)
14	Salt Spray	See note.	Subject mated connectors to 35+/-2C° and 5+/-1% salt condition for 48 hours. After test, rinse the sample with water and recondition the room temperature for 1 hour.
15	Solderability	The inspected area of each lead must have 95% solder coverage minimum.	Steam Aging Preconditioning: 93°C +3/-5°C, 8 hours ±15 min. Reflow Temperature: 230 - 245°C Reflow Time: 50 - 70 s. JESD22-B102D, Condition C
16	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

NOTE Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Rrequalification Test Sequence shown in Figure 2.

Figure 1 (end)

Humidity-Temperature Cycle



Temperature reduced 25°C to －10°C within 10 minutes. Humidity uncontrolled at a temperature less than 25°C.

Figure 2

3.6. PRODUCT QUALIFICATION AND REQUALIFICATION TEST

Test Examination	Test Group									
	A	B	C	D	E	F	G	H	I	J
	Test Sequence (a)									
Examination of Product	1, 7	1, 9	1, 6	1, 5	1, 5	1, 5	1, 5	1, 3	1, 3	1, 3
Termination Resistance		2, 8	2, 5	2, 4	2, 4	2, 4	2, 4			
Insulation Resistance	2, 5									
Dielectric withstanding Voltage	3, 6									
Temperature Rising										2
Connector Mating Force		3, 7								
Connector Unmating Force		4, 6								
Durability		5								
Vibration			3							
Physical Shock			4							
Temperature Life				3						
Thermal Shock					3					
Humidity Temperature Cycling	4					3				
Salt Spray							3			
Solderability								2		
Resistance to Reflow Soldering Heat									2	

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

Figure 3