

Modular Jack, RJ45, SMT type connector

1. SCOPE

1.1. Contents

This specification covers the performance, tests and quality requirements for the TE Electronics Modular Jack, RJ45, SMT type 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 TE 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.
- 109-202: Component Heat Resistance to Wave Soldering.
- 501-57964: Qualification Test Report.

2.2. Commercial Standard

- EIA-364: Electrical Connector/Socket Test Procedures Including Environmental Classifications.
- MIL-STD-1344A: Test Methods for Electrical Connectors.
- 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: 150 volts AC.
- B. Current: 1 amperes.
- C. Temperature: -40 to 85°C.

3.4. Performance Requirement and Test Description

Product is 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.

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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.
ELECTRICAL		
Contact Resistance	30 mΩ maximum.	EIA-364-23 Subject specimens to 100 mA maximum and 20 mV maximum open circuit voltage.
Dielectric withstanding Voltage	1 minute hold with no breakdown or flashover.	EIA-364-20 1000 VAC for 1minute Test between adjacent circuits of unmated connector assemblies.
Insulation Resistance	500 MΩ minimum initial. 200 MΩ minimum final.	EIA-364-21 After 500 VDC for 1 minute, measure the insulation resistance between the adjacent contacts of unmated connector assemblies.
MECHANICAL		
Vibration	No electrical discontinuity greater than 1μs or longer duration. See note	EIA-364-28, Test condition VII, Test Condition Letter D. Accelerate: 1.52mm. Duration: 15 minutes in each of three mutually perpendicular.
Mechanical shock	No electrical discontinuity greater than 1μs or longer duration. See note	EIA-364-27, test condition A. Subject mated specimens to 50 G's half-sine shock pulses of 11 milliseconds duration. 3 shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks.
Mating Force	2.3 Kgf maximum.	EIA-364-13, method A Measure force necessary to mate the connector assemblies at a max 25 mm/minute.
Durability	See Note	EIA-364-09 Mate and Unmated connector assemblies for 750 cycles at a maximum rate of 25 mm/minute.
Solderability	The inspected area of each lead must have 95% solder coverage minimum.	JESD22-B102D, Condition C Steam Aging Preconditioning: 93 +3/-5°C, 8 hours ±15 min. Solder Temperature: 245 ±5°C. Solder Immersion Time: 5 ±0.5 s.
Un-mating Force	See Note.	Measure force necessary to mate the connector assemblies at max 25 mm/min.
ENVIRONMENTAL		
Resistance to Reflow Soldering Heat	See Note.	TE spec. 109-201, Condition B Pre-soak condition, 85°C/85% R.H. for 168 hours. Pre Heat: 150 ~ 180°C, 90±30 sec. Heat: 230°C Min., 30±10 sec. Peak Temp.: 260+0/-5°C, 20 ~ 40 sec. Duration: 3 cycles
Temperature Life	See Note	EIA-364-17 test condition 3, method B. Subject Mated Connector to 85 ±2°C, for 250 hours
Humidity	See Note	MIL-STD-1344A, Method 1002.2, type 1 condition B. At a temperature of 40 ±2°C and relative humidity of 90 ~ 95% for 96 hours.

Figure 1 (continued)

Salt Spray	No evident corrosion.	EIA-364-26 Subject mated connectors to 35+/-2°C and 5+/-1% salt condition for 48hours. After test, rinse the sample with water and recondition the room temperature for 1 hour.
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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 (end)

3.6. Product Qualification and Requalification Test Sequence

Test or Examination	Test Group							
	A	B	C	D	E	F	G	H
	Test Sequence (a)							
Examination of product.	1, 7	1, 7	1, 5	1, 5	1, 3	1, 4	1, 5	1, 7
Contact Resistance		2, 6	2, 4	2, 4			2, 4	3, 6
Dielectric withstanding Voltage	3, 6							
Insulation Resistance	2, 5							
Vibration								4
Mechanical shock								5
Mating Force		3, 5						2
Durability		4						
Solderability						2		
Un-mating Force						3		
Resistance to Reflow Soldering Heat					2			
Temperature Life			3					
Humidity Test	4						3	
Salt Spray				3				

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

Figure 2