



RJ45 JACK WITHOUT MAGNET

1. SCOPE

1.1. Content

This specification covers performance, tests, and quality requirements for RJ45 Jacks (TE part# list see Figure 1) for Ethernet applications.

TE Part#	Description	Material	Rated Current	POE / non POE	Temperature Rating
2496699-X	RJ45 W/O MAGNET 1X1 LED	PA46	1.5A Max	Non POE	-40°C to +85°C
2496701-X	RJ45 W/O MAGNET 1X2 LED	PA46	1.5A Max	Non POE	-40°C to +85°C
2496702-X	RJ45 W/O MAGNET 1X4 LED	PA46	1.5A Max	Non POE	-40°C to +85°C
2497308-X	RJ45 W/O MAGNET 1X4 LED	PA46	1.5A Max	Non POE	-40°C to +85°C
2496703-X	RJ45 W/O MAGNET 1X8 LED	PA46	1.5A Max	Non POE	-40°C to +85°C
2496704-X	RJ45 W/O MAGNET 2X1 LED	PA46	1.5A Max	Non POE	-40°C to +85°C
2496705-X	RJ45 W/O MAGNET 2X2 LED	PA46	1.5A Max	Non POE	-40°C to +85°C
2496706-X	RJ45 W/O MAGNET 2X4 LED	PA46	1.5A Max	Non POE	-40°C to +85°C
2497307-X	RJ45 W/O MAGNET 2X6 LED	PA46	1.5A Max	Non POE	-40°C to +85°C
2496715-X	RJ45 W/O MAGNET 2X8 LED	PA46	1.5A Max	Non POE	-40°C to +85°C

Figure 1

1.2. Qualification

When tests are performed on the subject product line, procedures specified in Figure 2 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. The Qualification Test Report number for this testing is 501-161670

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

- 114-161218 Application Specification
- 501-161670 Qualification Test Report

2.2. Commercial Standards and Specifications

- FCC Part 68 Connection of Terminal Equipment to the Telephone, Connector Specifications
- 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: Refer to Figure 1.
- B. Contacts: Copper alloy, overall nickel plating with selective gold plating in the contact area and tin plating on the soldertails.
- C. Shield: Copper Alloy, overall Nickel plating.
- D. LED: Epoxy encapsulated diode lens, iron lead frame with Nickel and Tin.

3.3. Ratings

- A. Voltage Rating: 150V/AC
- B. Current Rating: Refer to Figure 1
- C. Temperature Rating: Refer to Figure 1

3.4. Performance Requirements and Test Description

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

3.6. ENVIRONMENTAL

Humidity Test	Shall meet visual requirements, show no	At a temperature of 40°C ± 2°C, and relative
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	physical damage	humidity of 90% to 95% for 96 hours. Comply with EIA-364-31B.
Temperature Life	Shall meet visual requirements, show no physical damage	Exposing in a heat chamber at a temperature of 65°C ± 2°C for 96 hours. Comply with EIA-364-17
Salt Spray	No detrimental corrosion allowed in contact area and base material exposed.	Subject mated connectors to 35°C ± 2°C and 5+/-1% salt condition for 48 hours. After test, rinse the sample with water and recondition the room temperature for 1 hour. Comply with EIA-364-26B.

SOLDERABILITY

Solderability test	Solder Pot temperature: 245°C ± 5°C. Solder immersion time: 5 ± 0.5 seconds. 95% of immersed area must show no voids or pin hole	Comply with EIA-364-52.
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. All tests shall be performed at ambient environmental conditions otherwise specified.

3.7. Test Requirements and Procedure Summary

Test Description	Requirement	Procedure
Visual examination	Meet requirements of mechanical structure, appearance, specifications and product drawing.	

ELECTRICAL

Contact Resistance	20m Ω max initial 30m Ω max final	Open circuit at 20mV max, 10mA max. Comply with EIA-364-23B.
Dielectric withstanding Voltage	No creeping discharge or flashover shall occur. Current leakage: 0.5mA max.	Test between adjacent circuits of unmated connector. 1 KVms at 60Hz, 1 minute between adjacent contacts. 1.5 KVms at 60Hz, 1 minute between shield and contacts. Comply with EIA-364-20B.
Insulation Resistance	500MΩmin, initial 200MΩmin, final	Test between adjacent contacts of unmated connector for 1 minute. Impressed voltage 500VDC. Comply with EIA 364-21C

MECHANICAL

Contact Normal Force	Individually pin(s) of contact area 0.1kgf min.	Comply with EIA-364-04A
Durability	Mate and unmate for 750 cycles. Operation speed: 25mm/min See Note below.	Comply with EIA 364-09C
Mating Force	Measure the force required to mate the connector. Operation speed: 25mm/min. 2 contacts → 1.6Kgf max 4 contacts → 1.8Kgf max 6 contacts → 2.1Kgf max 8 contacts → 2.3Kgf max 10 contacts → 2.5Kgf max	Comply with EIA-364-13B.

ENVIRONMENTAL

Humidity Test	Shall meet visual requirements, show no physical damage	At a temperature of 40°C ± 2°C, and relative humidity of 90% to 95% for 96 hours. Comply with EIA-364-31B.
Temperature Life	Shall meet visual requirements, show no physical damage	Exposing in a heat chamber at a temperature of 65°C ± 2°C for 96 hours. Comply with EIA-364-17
Salt Spray	No detrimental corrosion allowed in contact area and base material exposed.	Subject mated connectors to 35°C ± 2°C and 5+/-1% salt condition for 48 hours. After test, rinse the sample with water and recondition the room temperature for 1 hour. Comply with EIA-364-26B.

SOLDERABILITY

Solderability test	Solder Pot temperature: 245°C ± 5°C. Solder immersion time: 5 ± 0.5 seconds. 95% of immersed area must show no voids or pin hole	Comply with EIA-364-52.
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Figure 2

i 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 3

3.8. Product Qualification and Requalification Test Sequence

TEST OR EXAMINATION		TEST GROUP				
		A	B	C	D	E
1	Visual examination	1,7 ^(a)	1,5	1,7	1,7	1,4
2	Contact Resistance	2,6	2,4	2,6	2,6	
3	Dielectric withstanding Voltage			3,5		
4	Insulation Resistance				3,5	
5	Contact Normal Force					2
6	Durability	4				
7	Mating Force	3,5				
8	Humidity Test		3			
9	Temperature Life			4		
10	Salt Spray				4	
11	Solderability Test					3

Figure 4

3.7. Test Samples

3.9. The test samples consist of 25 pieces which were divided in to 5 groups (A, B, C, D, E) with 5 pieces. In each group for each corresponding test group defined in the "Product Qualification and Requalification Test Sequence" table.



NOTE

(a) 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 5

Temperature	15°C – 35°C
Relative Humidity	45% – 75%

Figure 6

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 7

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 Figure 2. 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.