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**Modular Jack Connector, RJ45 Without LED, TAB Up , Side Entry Offset , DIP type**

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## 1. SCOPE

### 1.1. Contents

This specification covers the performance, tests and quality requirements for the Tyco Electronics **Modular Jack Connector, RJ45 Without LED, TAB Up , Side Entry Offset , DIP type**.

### 1.2. Qualification

When tests are performed on the subject product line, the 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 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 Electronics Documents

- 109-1: General Requirements for Test Specifications
- 109-197: Test Specification (AMP test Specifications vs EIA and IEC Test Methods)
- 109-202: Component Heat Resistance to Wave Soldering.
- 501-57878: Test Report (Part numbers are as shown in Appendix. 1)

### 2.2. Industry 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**

- Voltage: 150 VAC rms
- Current: 1.0A Max.
- Temperature: -40 to 85°C.

**3.4. Performance and Test description**

The 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.

**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.  |
| <b>ELECTRICAL REQUIREMENT</b> |                                 |  |   |
| 2                             | Low Level Contact Resistance    | 30m mΩ Max.  | Subject mated contacts assembled in housing.<br>Open circuit at 20mV Max, 100mA Max.<br>EIA-364-23B, Figure-3       |
| 3                             | Dielectric withstanding Voltage | No creeping discharge or flashover shall occur.<br>Current leakage: 0.5mA Max. | 1000 VAC for 1minute<br>Test between adjacent circuits of unmated connector.<br>EIA-364-20B, Method B, Condition II |
| 4                             | Insulation Resistance           | 500 MΩ Min. (initial)<br>200 MΩ Min. (Final)                                   | Impressed voltage 500 VDC.<br>Test between adjacent contacts of unmated connector for 1 minute.<br>EIA-364-21C.     |
| <b>MECHANICAL REQUIREMENT</b> |                                 |  |   |
| 5                             | Mating Force                    | 2.3 Kgf (22.54 N) Max.   | Operation Speed: 25mm/min.<br>Measure the force required to mate connector.<br>EIA-364-13B                          |

Figure 1 (Continue)

| TEST ITEM |                               | REQUIREMENT   | PROCEDURE  |
|-----------|-------------------------------|---|--|
| 6         | Unmating Force<br>(W/ Locked) | 6 Kgf (58.8 N) Min.   | Operation Speed: 25mm/min.<br>Measure the force required to mate connector.<br>EIA-364-13B   |
| 7         | Durability                    | [ See Note 1 ]  | Operation Speed: 25mm/min.<br>Number of cycles: 750 cycles<br>EIA-364-09C  |
| 8         | Vibration                     | No electrical discontinuity greater than 1µsec shall occur.<br>[ See Note 1 ] | Subject mated connectors traversed at 1.52mm amplitude 15min. in each of 3 mutually perpendicular.<br>EIA-364-28D, Test condition VII, Test Condition Letter D   |
| 9         | Mechanical shock              | No electrical discontinuity greater than 1µsec shall occur.<br>[ See Note 1 ] | Accelerate Velocity: 490 m/s <sup>2</sup> (50G)<br>Waveform: Half-sine shock plus<br>Duration: 11 msec.<br>No. of Drops: 3 drops each to normal and reversed directions of X, Y and Z axes, totally 18 drops.<br>100mA applied.<br>EIA-364-27B, Test condition A.                                      |
| 10        | Solderability                 | The inspected area of each lead must have 95% solder coverage minimum.        | Steam Aging Preconditioning:<br>1. Intended for non-tin and non-tin-alloy leadfinishes for 93+3/-5°C 、 1hour±5min.<br>JESD22-B102D, Condition A<br>2. Intended for tin and tin-alloy leadfinishes for 93+3/-5°C 、 8hour±15min.<br>JESD22-B102D, Condition C<br>Solder pot temperature: 245±5°C, 5 sec. |

Figure 1 (Continue)

| ENVIRONMENTAL REQUIREMENT |  |  |   |
|---------------------------|--|--|---|
| TEST ITEM                 | REQUIREMENT  | PROCEDURE  |   |
| 11                        | Resistance to <b>Reflow Soldering Heat</b><br>[See Note 2] | No physical damage shall occur.  | Moisture Soak precondition : 85°C, 85%RH for 168 hours.<br>Pre Heat : 150~200°C, 60~180sec.<br>Peak Temp. : 260+0/-5°C, 20~40sec.<br>Ramp to peak : 3°C max. per second<br>Ramp to cool down : 6°C max. per second<br>Time over liquids (217°C) : 60~150 sec<br>Duration : 3 cycles<br>TE spec. 109-201, Test condition B, Refer to Figure 5. |
| 12                        | Thermal Shock  | [ See Note 1 ]   | Mated Connector<br>-55+0/-3°C (30 min.), +85+3/-0°C (30 min.)<br>Perform this cycle, repeat 5 cycles<br>EIA-364-32C, Method A, Test condition I   |
| 13                        | Humidity   | [ See Note 1 ]   | Mated Connector<br>40 ±2°C, 90% to 95% RH, 96 hours.<br>MIL-STD-1344A, Method 1002.2, type 1 condition B.   |
| 14                        | Temperature Life (Heat Aging)                              | [ See Note 1 ]   | Mated Connector<br>85°C, 250 hours.<br>EIA-364-17B<br>Test condition 3 (w/o electrical load),<br>Test time condition B  |
| 15                        | Salt Spray   | No detrimental corrosion allowed in contact area and base metal exposed. | Subject mated connectors to 35±2°C and 5+1% salt condition for 48 hours.<br>After test, rinse the sample with water and recondition the room temperature for 1 hour.<br>EIA-364-26B   |

Figure 1 (End)

**Note1** : Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the test sequence in Figure 2 .

**Note2** : Resistance to soldering process is indicated on notes of customer drawing. Select the appropriate test type which drawing notes are matched with.

**3.6 Product Qualification and Requalification test**

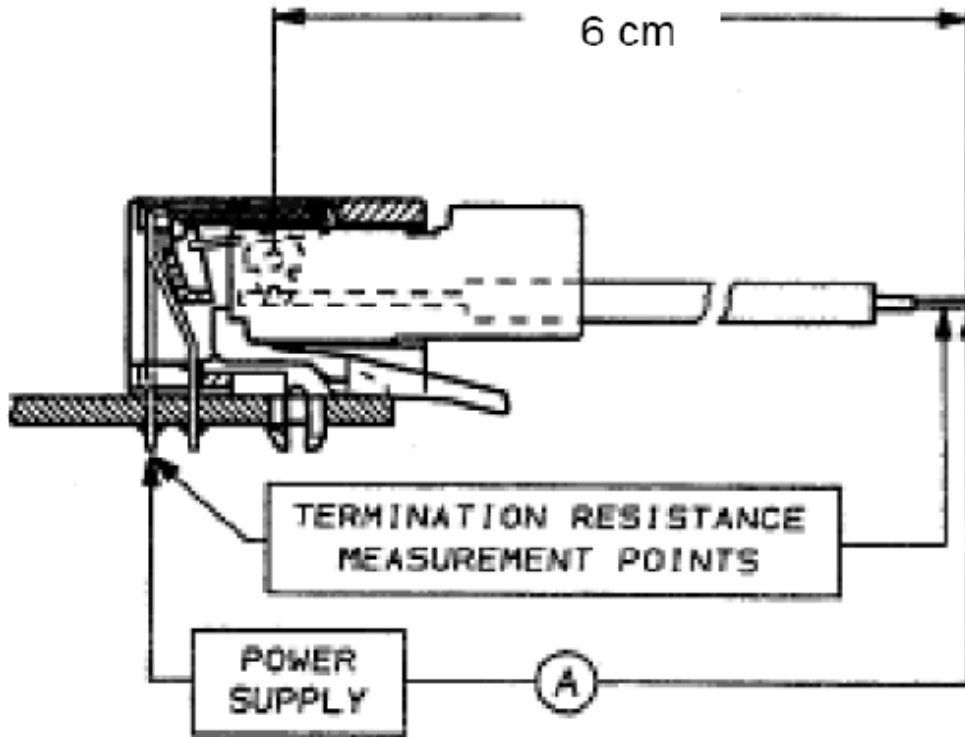
|                                     | Test Group        |      |       |      |      |      |      |      |      |
|-------------------------------------|-------------------|------|-------|------|------|------|------|------|------|
|                                     | A                 | B    | C     | D    | E    | F    | G    | H    | I    |
|                                     | Test Sequence (a) |      |       |      |      |      |      |      |      |
| Examination of product.             | 1, 7              | 1, 9 | 1, 6  | 1, 5 | 1, 5 | 1, 5 | 1, 5 | 1, 4 | 1, 3 |
| Contact Resistance                  |                   | 2, 8 | 2, 5  | 2, 4 | 2, 4 | 2, 4 | 2, 4 |      |      |
| Dielectric withstanding Voltage     | 3, 6              |      |       |      |      |      |      |      |      |
| Insulation Resistance               | 2, 5              |      |       |      |      |      |      |      |      |
| Mating Force                        |                   | 3, 7 |       |      |      |      |      |      |      |
| Un-mating Force                     |                   | 4, 6 |       |      |      |      |      | 3    |      |
| Durability                          | 4                 | 5    |       |      |      |      |      |      |      |
| Vibration                           |                   |      | 3 (b) |      |      |      |      |      |      |
| Mechanical shock                    |                   |      | 4 (b) |      |      |      |      |      |      |
| Solderability                       |                   |      |       |      |      |      |      | 2    |      |
| Resistance to reflow Soldering Heat |                   |      |       |      |      |      |      |      | 2    |
| Thermal Shock                       |                   |      |       | 3    |      |      |      |      |      |
| Humidity Test                       |                   |      |       |      | 3    |      |      |      |      |
| Temperature Life                    |                   |      |       |      |      | 3    |      |      |      |
| Salt Spray                          |                   |      |       |      |      |      | 3    |      |      |

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

(b) Discontinuities shall not take place in this test group, during tests.

Figure 2

Figure 3. Low Level Contact Resistance



Note: Resistance of 6 cm wire length and contact pin shall be subtracted from all reading.

The applicable product descriptions and part numbers are as shown in Appendix. 1.

Appendix1

| Product Part No. | Product name   | Note |
|------------------|--|------|
| 2041307-1        | Modular Jack Connector, RJ45 Without LED, TAB Up , Side Entry Offset , DIP type , H=8.2mm. |      |
|                  |  |      |