

## 1. Scope

This specification covers the performance, tests and quality requirements for the RJ45 Connector

Applicable Product Models:FRJ45246 series.

## 2. Applicable documents

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.

## 3. Ordering information

Refer to the drawing.

## 4. Connector dimensions

Refer to the drawing.

## 5. Material

Housing: Thermoplastic

Terminal: Copper Alloy

Plating:Selective gold plated on contact area and matte tin plated on tails area

## 6. Accommodated P.C.B layout

Refer to the drawing.

## 7. Rating

Operating voltage(Max.):125V AC

Current rating(Max.) :1.5A allowable current to be applied

Temperature range-operating: -40°C -- +85°C

**8. Performance**

| Serial Number | Test item                     | Procedure  | Requirement  |
|---------------|-------------------------------|--|--|
| 1             | Examination Of Product        | Visual inspection.<br>(EIA-364-18)                                 | Meets requirements of product Drawing. No physical damage. |
| 2             | Plating Thickness Measurement | Inspect plating thickness using X-ray evaluation.<br>(EIA-364-48A) | Meet plating requirements defined in customer drawing      |

**ELECTRICAL REQUIREMENT**

|   |                                 |  |  |
|---|---------------------------------|--|--|
| 3 | Contact Resistance              | Subject mated contacts assembled housing to 20 mV maximum 100 mA .Measured from plug side to PCB side.<br>(EIA-364-23) | 20 mΩ MAX (Initial)<br>50 mΩ MAX (Final)                                       |
| 4 | Insulation Resistance           | Mated connectors with 500±10% VDC between adjacent contacts or ground.<br>(EIA-364-21)                                 | Minimum initial resistance: 500 MΩ   |
| 5 | Dielectric withstanding Voltage | Mated connectors with 1500±5% VAC for 6 seconds 1.0mA between adjacent contacts or ground.<br>(EIA-364-20)             | No Breakdown   |
| 6 | DCR                             | The DCR between J end incoming and outgoing lines of the same set of filters is measured(Example: J1 ~ J2; J3 ~ J6).   | 1.20Ω MAX.   |
| 7 | LED Functional Test             | Activate LEDs at application current and voltage.  | When LEDs are present, all LED colors illuminate and meet visual requirements. |

MECHANICAL REQUIREMENT

|    |                              |   |  |
|----|------------------------------|---|--|
| 8  | Solder ability               | Subject specimens to steam aging prior to solderability, per category. Solder type and temperature shall be in accordance with the intended method of mounting the product. If not specified, use RMA or R type solder flux prior to solderability test. Then immerse the solder pin into the solder bath at Solder Temp: 245°C±5°C, 3±0.5S. (EIA-364-52) | Solderable area shall have a minimum of 95% solder coverage  |
| 9  | Resistance to Soldering Heat | test method: 1.Wave soldering Place the connector on the P.C. Board, then immerse the solder pin up to the surface of the board in the solder bath at Solder Temp: 260±5°C, 10S max. 2. IR Reflow Place the connector on the P.C. Board, then pass through the reflow oven.   | 1.Shall maintain electrical and mechanical functionality.<br>2.Shall meet visual requirements and be free of warpage that would prevent installation in customer' s system.<br>3. LEDs (if applicable) shall be functional with no damage to the lens. |
| 10 | Mating and Un-mating Force   | Mating connectors at maximum rate 25.4millimeters/minute and measure the Insertion and Extraction force . (EIA -364-13D)  | 23N Max.   |
| 11 | Durability                   | Operation Speed: 10 to 20 cycle/min. Durability Cycles: 750 Cycles. (EIA-364-09)  | Appearance: Nodamage<br>Contact Resistance: 50 m Ω MAX   |

|    |              |   |   |
|----|--------------|---|---|
| 12 | Normal Force | Mating connectors and measure the force of the contact area, using an FCC compliant modular plug.<br>(EIA-364-04)               | 100 gram force minimum  |
| 13 | Drop Test    | Drop onto a horizontal marble floor surface from a height of 90CM, test for 6 faces, 3sides, 1pointedness.3times in each cycle. | <ol style="list-style-type: none"> <li>1. Loosen, crack and breakage of the plastic part and other detrimental damage shall not be observed.</li> <li>2. No electrical fail.</li> </ol> |

ENVIRONMENT PERFORMANCE AND OTHERS

|    |                                    |  |  |
|----|------------------------------------|--|--|
| 14 | Humidity                           | At a temperature of $40 \pm 2^{\circ}\text{C}$ and relative humidity of 90% - 95% for 96 hours. Then, be left alone for 1 to 2 hours in a room ambient and test in the time.<br>(EIA-364-31)   | Meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification Test Sequence |
| 15 | Temperature life (preconditioning) | Mated connectors and expose to $85^{\circ}\text{C}$ for 500 hours, Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed.<br>(EIA-364-17) | Meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification Test Sequence |

|    |            |  |   |
|----|------------|--|---|
| 16 | Salt Spray | <p>Tested as below: Temperature: <math>(35 \pm 2)^\circ\text{C}</math><br/>                 Humidity: <math>(95-98)\%</math>(R.H.) PH: 6.5-7.2 Duration: <math>X \leq 1\text{u}'' : 8\text{H}</math>;<br/> <math>1\text{u}'' &lt; X &lt; 3\text{u}'' : 12\text{H}</math>; <math>3\text{u}'' \leq X &lt; 15\text{u}'' : 24\text{H}</math>; <math>15\text{u}'' \leq X &lt; 30\text{u}'' : 36\text{H}</math>; <math>X = 30\text{u}'' : 48\text{H}</math>; <math>X = 50\text{u}'' : 72\text{H}</math>; It shall be subjected to standard atmospheric condition 1 hour after removing the salt deposits. It should meet the contact resistance. Object non-contact area: Temperature: <math>(35 \pm 2)^\circ\text{C}</math> Salt-solution <math>(5 \pm 1)\%</math> .<br/>                 (EIA-364-26B)</p> | <p>Meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification Test Sequence</p> |
|----|------------|--|---|

Figure 1

NOTE: (a): The test result does not include the resistance of cable and internal resistance of contact wire,  
 (b): Do not perform "IR reflow soldering test" for wave soldering product.

**9. Recommended RJ Plug Specification(FCC)**

Note :- This plug is depicted with its full 8 contact capacity. It may be fabricated with less than 8 contacts.



