

025 Series Connector 4 Position

1. SCOPE

1.1. Contents

This specification covers the requirements for product performance, test methods and quality assurance provisions of 025 Series Connector 4Position. Applicable product description and part numbers are as shown in Appendix 1.

2. APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. 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 Specifications

- A. 109-5000 : Test Specification, General Requirements for Test Methods
- B. 114-5250 : Crimping of 025 Contact, Receptacle
- C. 501-5319 : Qualification Test Report

2.2. Commercial Standards and Specifications

- A. JASO D605 Multi-pole Connector for Automobiles
- B. JASO D7101 Test Method for Plastic Molded Parts
- C. JIS C3406 Low Voltage Wires and Cables for Automobiles
- D. JIS D0203 Method of Moisture, Rain on Spray Test for Automobile Parts
- E. JIS D0204 Method of High and Low Temperature Test for Automobile Parts
- F. JIS D1601 Vibration Testing Method for Automobile Parts.

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. Terminals:

Receptacle terminal; Pre-tinned copper alloy

B. Housing: PBT

C. Wires: Applicable wires as below;

| Terminals | TE P/N | Applicable wires | | | |
|------------------------|-----------|------------------|------|-----|-----|
| | | Wire Type | 0.22 | 0.3 | 0.5 |
| 025 Receptacle Contact | 1123343-1 | CAVS | ○ | ○ | × |
| | | AVSS | × | ○ | × |
| | | CAVUS | ○ | ○ | ○ |

3.3. Ratings;

A. Temperature Rating: -30°C~100°C

3.4. Performance Requirements and Test Descriptions

The product shall be designed to meet the electrical, mechanical and environmental performance requirements specified in Fig.2. All tests shall be performed in the room temperature, unless otherwise specified.

3.5. Test Requirements and Procedures Summary:

| Para. | Test Items | Requirements | | Procedures | |
|--------------------------------|--------------------------------------------|---------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 3.5.1 | Examination of Product | Meet requirements of product drawing and TE Specification 114-5250. | | Visually Inspection. No physical damages. | |
| Electrical Requirements | | | | | |
| 3.5.2 | Termination Resistance (Specified Current) | 5mV/A Max.(Initial) 10mV/A Max.(Final) | | Measure mill drop of contact in mated connectors, Fig.3. TE SPEC 109-5311-2 | |
| 3.5.3 | Termination Resistance (Low Level) | 5mΩ Max.(Initial) 10mΩ Max.(Final) | | Subject mated contacts assembled in housing to 20mV MAX. open circuit at 10mA.Fig.3. TE SPEC 109-5311-1 | |
| 3.5.4 | Dielectric Withstanding Voltage | No creeping discharge nor flashover shall occur. | | 1kV A.C. for 1 minute mated connector, Fig.4. TE SPEC 109-5301 | |
| 3.5.5 | Insulation Resistance | 100MΩ Min. | | Impressed voltage 500 V D.C. mated connector, Fig. 4. TE SPEC 109-5302 | |
| 3.5.6 | Current Leakage | 3mA Max. | | 12V D.C. for 1 minute, Fig. 5. TE SPEC 109-5312 | |
| 3.5.7 | Temperature Rising | Temperature Rising; 60°C Max. | | Measure temperature rising at wire crimped by applied current 4.2A to all positions. | |
| Mechanical Requirements | | | | | |
| 3.5.8 | Terminal Retention Force (Secondary Lock) | 70 N Min. | | Apply an axial pull-off load to one of the terminal. Measure terminal retention force Operation Speed; 100mm/min. | |
| 3.5.9 | Connector Mating Force | 70 N Max. | | Operation Speed; 100mm/min. Measure the force required to mate connectors. TE SPEC 109-5206 Condition A | |
| 3.5.10 | Connector Unmating force | 70 N Max. | | Operation Speed; 100mm/min. Measure the force required to unmate connectors.(without housing lock) TE SPEC 109-5206 Condition A | |
| 3.5.11 | Connector Locking Strength | 100N Min. | | Apply an axial pull-off load to one of the mated housing. Measure locking strength. Operation Speed : 100mm/min | |
| 3.5.12 | Crimp Tensile Strength | Wire Size | | Tensile Strength (N) Min. unit;N Apply an axial pull-off load to crimped wire of contact secured on the tester. Operation Speed: 100mm/min TE SPEC 109-5205 Condition B *;Included the insulation grip | |
| | | mm ² | (AWG) | | |
| | | 0.3 | 22 | | 70* |
| | | 0.5 | 20 | 90 | |
| 3.5.13 | Handling Ergonomics | No abnormalities allowed in manual mating/unmating Handling. | | Manually Operated. | |

Fig.1(To be continued)

| Para. | Test Items | Requirements | Procedures |
|----------------------------|---------------------------------|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environmental Requirements | | | |
| 3.5.14 | Thermal Shock | To meet the requirements of test examination according to test sequence on Para.3.6. | Mated connector -30°C/30min., 80°C/30min. Making this a cycle, repeat 1000 cycles. TE SPEC 109-5103 |
| 3.5.15 | Humidity (Steady State) | Current Leakage; 3mA Max. To meet the requirements of test examination according to test sequence on Para.3.6. | Mated connector, 90~95% R.H 60°C 96 hours, 14V applied. Fig.5 TE SPEC 109-5105 |
| 3.5.16 | Temperature Life (Heat Aging) | To meet the requirements of test examination according to test sequence on Para.3.6. | Mated connector, 100°C, 120 hours TE SPEC 109-5104 |
| 3.5.17 | Resistance to Cold | To meet the requirements of test examination according to test sequence on Para.3.6. | Mated connector, -30±5°C, 120 hours TE SPEC 109-5108 |
| 3.5.18 | Compound Environment Resistance | To meet the requirements of test examination according to test sequence on Para.3.6. | Mounting; See Fig.6 Test Current: See Fig.7, 300 cycles Vibration Condition; 20~200~ 20Hz/3minutes(log) Temperature: 80°C Duration: 300 hours Vibration Direction: X,Y and Z Monitor the circuit resistance during the test. After that, vibration test as above at room temperature for an hour. Check the no current discontinuity. |

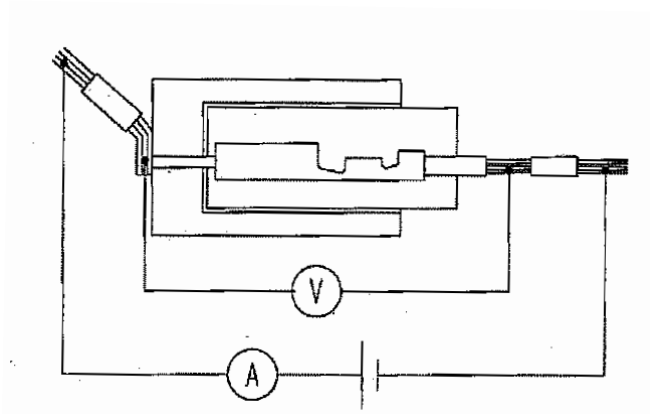
Fig.1(End)

3.6. Product Qualification Test Sequence;

| Para. | Test Examination | Test Group | | | | | |
|--------|--------------------------------------------|------------------------------|------|------|------|-----|-----|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| | | Test Sequence ^(a) | | | | | |
| 3.5.1 | Examination of Product | 1 | 1,8 | 1,9 | 1,8 | 1,4 | 1,5 |
| 3.5.2 | Termination Resistance (Specified Current) | 3 | 3,10 | 3,11 | 3,10 | | 3,7 |
| 3.5.3 | Termination Resistance (Low Level) | 2 | 2,9 | 2,10 | 2,9 | | 2,6 |
| 3.5.4 | Dielectric Withstanding Voltage | 6 | | 5,13 | | | |
| 3.5.5 | Insulation Resistance | 5 | | 4,12 | | | |
| 3.5.6 | Current Leakage | | | 8 | | | |
| 3.5.7 | Temperature Rising | 4 | | | 11 | | 8 |
| 3.5.8 | Terminal Retention Force (Secondary Lock) | | 4,12 | | 4,13 | 2,6 | |
| 3.5.9 | Connector Mating Force | 8 | | | | | |
| 3.5.10 | Connector Unmating force | 7 | | | | | |
| 3.5.11 | Connector Locking Strength | 9 | 5,13 | 6,15 | 5,14 | | |
| 3.5.12 | Crimp Tensile Strength | 10 | 6,14 | | 6,15 | | |
| 3.5.13 | Handling Ergonomics | 11 | 11 | 14 | 12 | 5 | 9 |
| 3.5.14 | Thermal Shock | | 7 | | | | |
| 3.5.15 | Humidity (Steady State) | | | 7 | | | |
| 3.5.16 | Temperature Life (Heat Aging) | | | | 7 | | |
| 3.5.17 | Resistance to Cold | | | | | 3 | |
| 3.5.18 | Compound Environment Resistance | | | | | | 4 |

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

Fig. 2



Soldering wire on stripped area.
Remove the bulk resistance from the measured value.

Fig.3

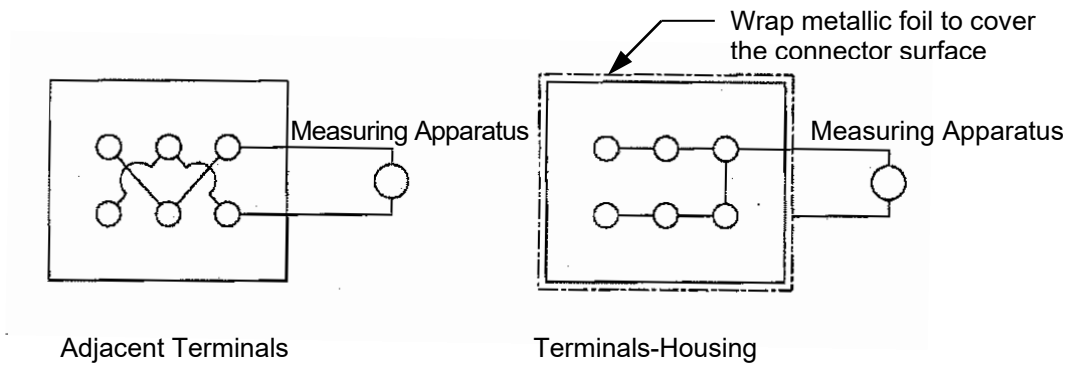


Fig.4

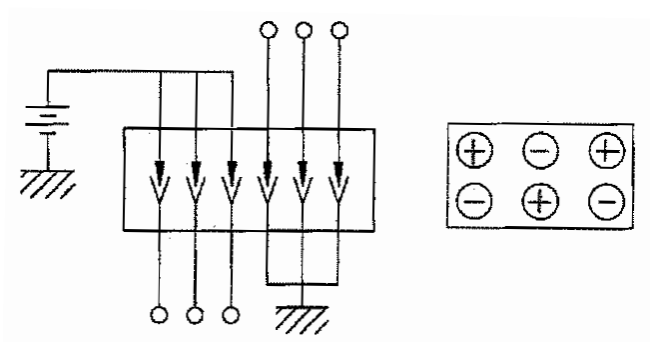


Fig.5

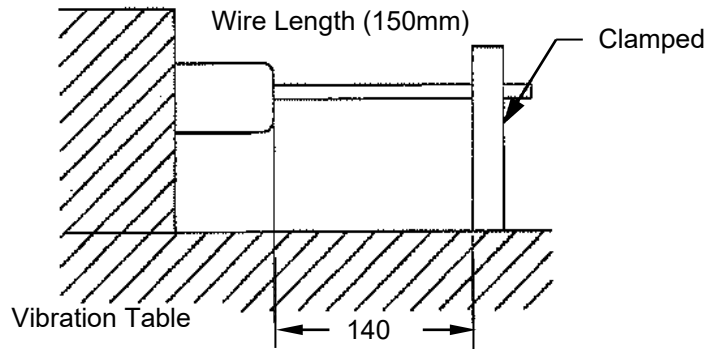


Fig.6

| Terminal | Wire Size (mm ²) | Test Current (A) | Duration |
|----------|------------------------------|------------------|-----------------------|
| 025 | 0.3 | 2.4 | 45Min ON 15Min OFF |

Fig.7

| Part Number* | Description |
|--------------------|----------------------------|
| 1318620 | 025 4P Plug Housing |
| 1376515 1612446 | 025 4P Cap Assembly V-Type |
| 1473143 | 025 2P Plug Housing |
| No product in TE | 025 2P Cap Assembly |
| 1123343 | 025 Receptacle Contact |

Appendix 1

*Note: Part number is consisted from listed base number and 1 digit numeric prefix and Suffix with dash. Refer to catalog or customer drawing for specific part numbers for each base number. When prefix is zero, zero and dash are omitted.