

1. Scope:

1.1 Contents

This specification covers the requirements for product performance, test methods and quality assurance provisions of Fix-in Squib Connector(ϕ 1mm Socket 2 Position).

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. 114-5234: Application Specification Crimping of Squib Contacts
- C. 501-78382: Qualification Test Report

2.2 Commercial Standards and Specifications.

- A. JASO D605: Multi-pole Connector for automobiles
- B. JASO D7101: Test Methods for Plastic Molded Parts
- C. JIS C3406: Low-Voltage Wires and Cables for Automobiles
- D. JIS D0203: Method of Moisture, Rain and 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
- G. JIS R5210: Portland Cement

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 Material:

A. Contact:

Description	Material	Finish
Φ1mm Socket (Female)	Copper alloy	Selective-Gold and Tin plating over Ni under plating

Fig.1

B. Housing : PBT

C. Other : Ferrite

3.3 Ratings:

A.: Temperature Rating : -40°C to 105°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 and Fig.3. 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 114-5234	Visually inspection. No physical damage.
Electrical Requirements			
3.5.2	Termination Resistance (Low Level)	3mΩMax.(Initial) 10mΩMax.(Final)	Subject mated contacts assembled in housing to 20mV Max. open circuit at 10mA. Fig.4 TE Spec. 109-5311-1
3.5.3	Dielectric Withstanding Voltage	No creeping discharge nor flashover shall occur.	Mated connectors. 1kVAC for 1 min. Fig.5 TE Spec. 109-5301
3.5.4	Insulation Resistance	100MΩ Min.(Initial) 100MΩ Min.(Final)	Mated connectors. Impressed voltage 500VDC Fig.5 TE Spec. 109-5302
Mechanical Requirements			
3.5.5	Physical Shock	No electrical discontinuity greater than 100μsec. Shall occur. Final 10mΩ Max.	Accelerated Velocity: 1960±98m/s ² Wave form: Half sine wave Duration: 7±2msec Number of Drops: 2 drops each to normal and reversed directions of X,Y and Z axis, totally 12 drops
3.5.6	Handling Ergonomics	No abnormalities allowed in manual mating handling.	Manually operated
3.5.7	Connector Mating Force	2Pos. 58.8N Max.	Operation Speed: 100mm/min Measure the force required to mate connectors. TE Spec. 109-5206 Condition A
3.5.8	Connector Locking Strength	100N Min.	Measure connector locking strength. Operation Speed: 100mm/min.
3.5.9	Contact Retention Force (LID Retention force)	100N Min.	Measure contact retention force with lid. Operation Speed: 100mm/min. Fig.6
3.5.10	Crimp Tensile Strength	0.3mm ² : 69N Min. * 0.5mm ² : 88N Min. *Included the insulation grip	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

Fig.2(To be continued)

Para.	Test Items	Requirements	Procedures
3.5.11	Durability Repeated Mate/Unmate	Termination Resistance: 10mΩMax.(Final)	100cycles Manually operated TE Spec. 109-5213
Environmental Requirements			
3.5.12	Thermal Shock	10mΩMax.(Final)	Mated connector -40°C/30min., 105°C/30min. Making this a cycle, repeat 1000 cycles.
3.5.13	Humidity, Steady State	Insulation resistance 100MΩ Min.(Final) Termination resistance 10MΩ Max.(Final) Current Leakage 1mA Max.	Mated connector 90~95% R.H.80±5°C 240hours ①14V applied. Fig. 7 ②50mA applied
3.5.14	Industrial Gas(SO ₂)	Insulation resistance 100MΩ Min.(Final) Termination resistance 10mΩ Max.(Final)	Unmated connector SO ₂ Gas: 25ppm, 95% R.H. 25°C, 96 hours
3.5.15	Temperature Life (Heat Aging)	10mΩMax.(Final)	Mated connector 120°C, Duration: ①300hours, ②120hours
3.5.16	Resistance to Cold	10mΩMax.(Final)	Mated connector -40°C±3°C, 300 hours
3.5.17	Humidity-Temperature Cycling	Insulation resistance 100MΩ Min.(Final) Termination resistance 10mΩ Max.(Final)	Mated connector Condition : Fig.8
3.5.18	Dust Bombardment	10mΩMax.(Final)	Mated connector Subject JIS R5210 cement blow of 14N (1.5kgf) per 10 seconds in 15 minutes intervals for 8 cycles, with Unmate/Re-mating per 2 cycles. TE Spec. 109-5110
3.5.19	Compound Environment Resistance	10mΩMax.(Final) No electrical discontinuity greater than 1 μ sec. shall occur	Temperature: 80°C Vibration frequency: 20°C→200→20Hz/3min.(Log) Accelerated Velocity: 44.1m/s ² Vibration Direction: X,Y,Z Duration: 1000 hours Test Current: 10mA Mounting: Fig.9

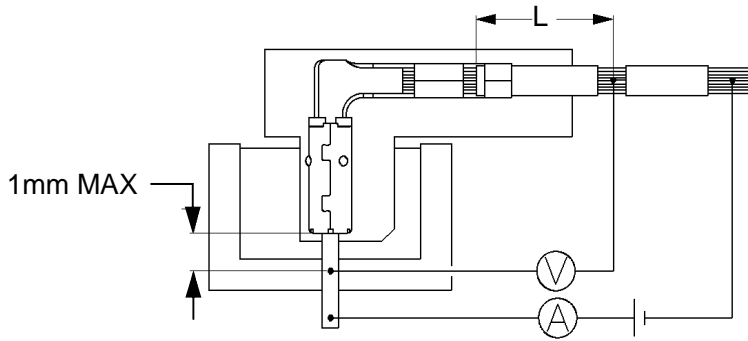
Fig.2 (End)

3.6 Product Qualification Test Sequence

Para.	Test Examination	Test Group												
		1	2	3	4	5	6	7	8	9	10	11	12	13
		Test Sequence ⁽¹⁾												
3.5.1	Examination of Product	1,6	1	1	1	1	1,4	1,4	1,4	1,4	1,4	1,4	1,5	1,5
3.5.2	Termination Resistance (Low Level)	3,7				2,4	2,5	2,5	2,5	2,5	2,5	2,5	2,6	2,6
3.5.3	Dielectric with standing Voltage							6	6					
3.5.4	Insulation Resistance							7	7			6		
3.5.5	Physical Shock	5												
3.5.6	Handling Ergonomics	2												
3.5.7	Connector Mating Force		2											
3.5.8	Connector Locking Strength		3									7		
3.5.9	Contact Retention Force (LID Retention Force)			2										
3.5.10	Crimp Tensile Strength				2									
3.5.11	Durability					3								
3.5.12	Thermal Shock						3							
3.5.13	Humidity (Steady State)							3						
3.5.14	Industrial SO ₂ Gas								3					
3.5.15	Temperature Life (Heat Aging)	①	4								3			
		②											3	3
3.5.16	Resistance to Cold										3			
3.5.17	Humidity-Temperature Cycling											3		
3.5.18	Dust Bombardment												4	
3.5.19	Compound Environment Resistance													4

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

Fig. 3



Deduct the resistance of the wire "L" from the measured

Fig.4

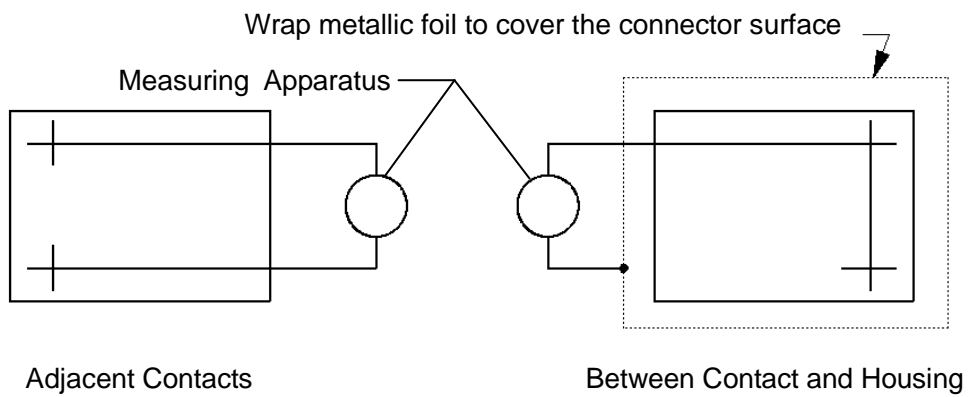


Fig.5

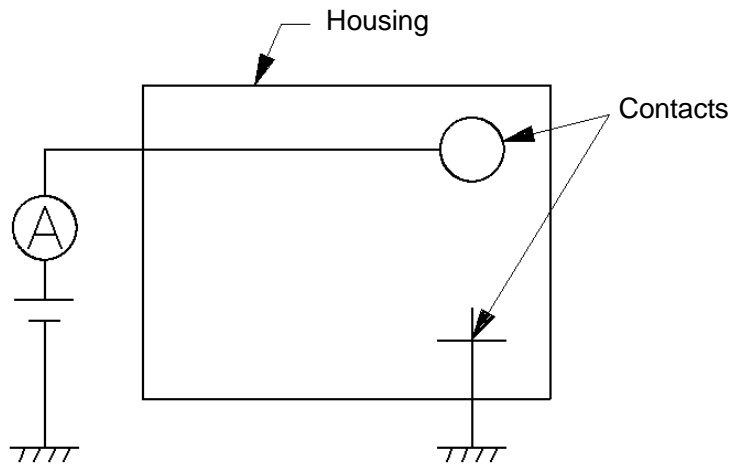


Fig.6

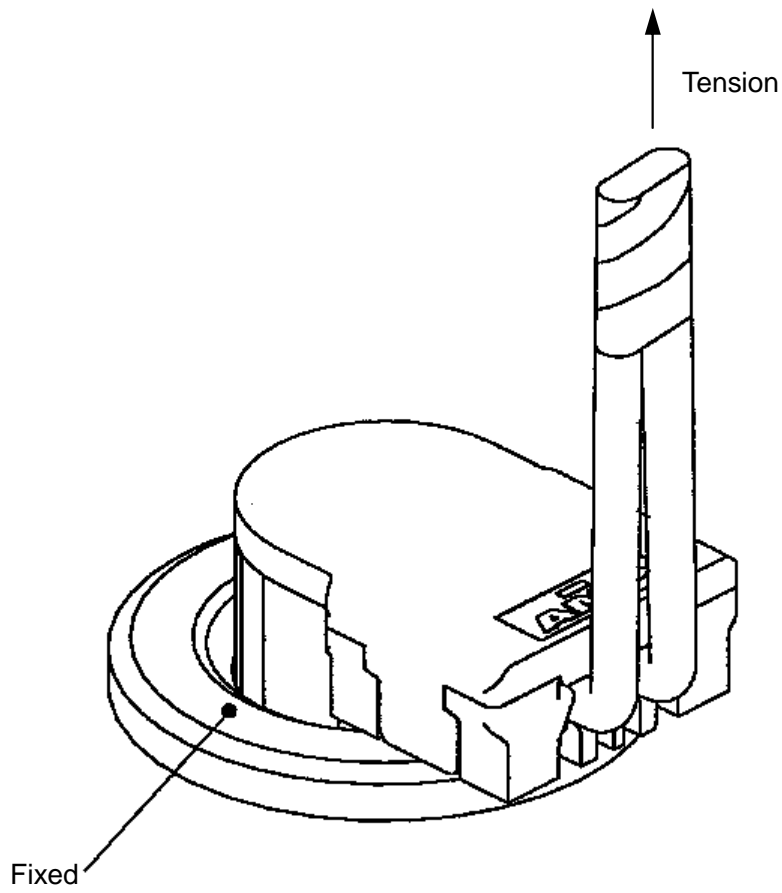


Fig.7

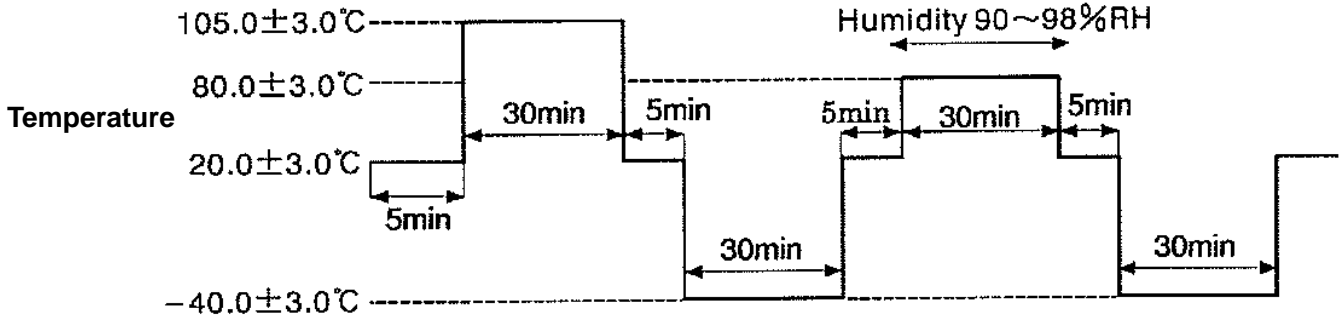


Fig.8

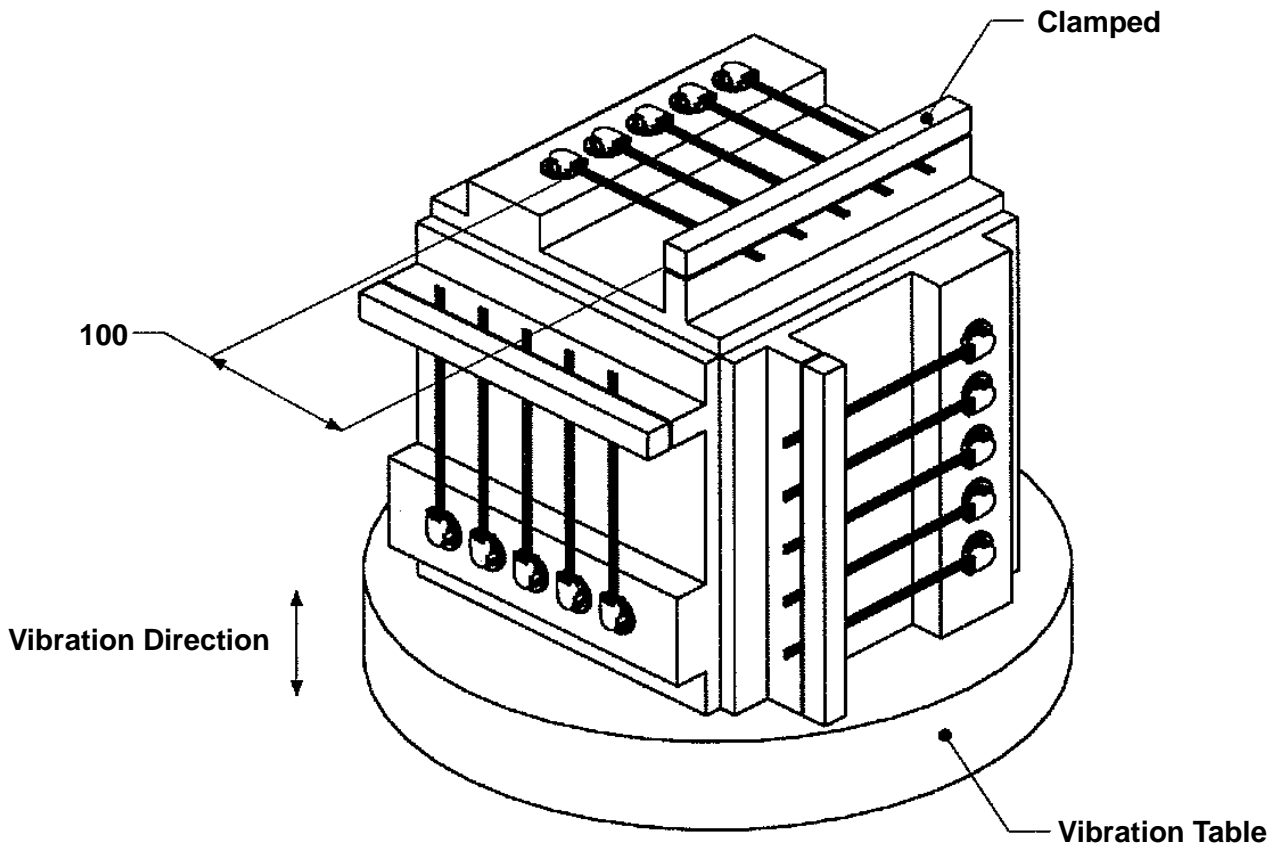


Fig.9

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

Product Part No.*	Description
353744	Fix-in Squib Connector, Housing-Main
353745	Fix-in Squib Connector, Housing-Lid
353746	Fix-in Squib Connector, Ferrite
353376	Squib Contact (Φ 1mm Socket)

* 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.

Appendix 1