

1. Scope

1.1 Contents

This specification covers the requirements for product performance, test methods and quality assurance provisions of 025 Series Connector 4Pos. 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 AMP 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	AMP 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	Meets requirements of product drawing and AMP Specification 114-5250	Visually inspection. No physical damages.
Electric Requirements			
3.5.2	Termination Resistance (Specified Current)	5mΩ Max.(Initial) 10mΩ Max.(Final)	Measure mill drop of contact in mated connectors, Fig.3. AMP 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. AMP 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. AMP SPEC 109-5301
3.5.5	Insulation Resistance	100MΩ Min.	Impressed voltage 500V D.C. mated connector, Fig.4. AMP SPEC 109-5302
3.5.6	Current Leakage	3mA Max.	12V D.C. for 1 minute, Fig.5. AMP 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)	70N 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	70N Max.	Operation speed;100mm/min. Measure the force required to mate connectors. AMP SPEC 109-5206 Condition A
3.5.10	Connector Unmating Force	70N Max.	Operation speed;100mm/min. Measure the force required to unmate connectors. (Without housing lock) AMP 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.

Fig.1(To be continued)

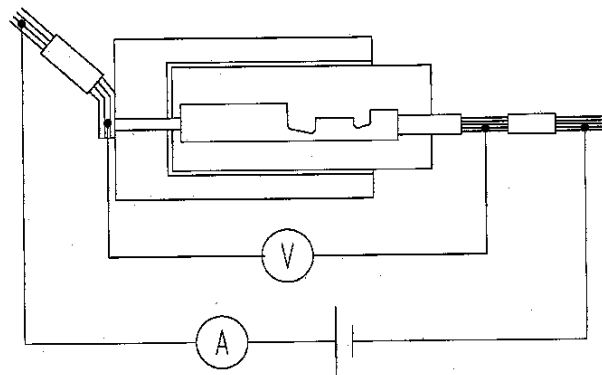
Para.	Test Items	Requirements		Procedures	
3.5.12	Crimp Tensile Strength	Wire Size		Apply an axial pull-off load to crimped wire of contact secured on the tester. Operation Speed;100mm/min. AMP SPEC 109-5205 Condition B *;Included the insulation grip	
		mm ²	(AWG)		Tensile Strength (N) Min. unit ; N
		0.3	22		70*
		0.5	20		90
3.5.13	Handling Ergonomics	No abnormalities allowed in manual mating/unmating handling.		Manually Operated.	
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 1000cycles. AMP 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 AMP 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 AMP 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°C±5°C, 120 hours AMP 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 ; 300hours 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					
3.5.1	Examination Of Product	1	1,8	1,9	1,8	1,4	1,5
3.5.2	Termination Resistance (Rated 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

Fig. 2



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

Fig.3

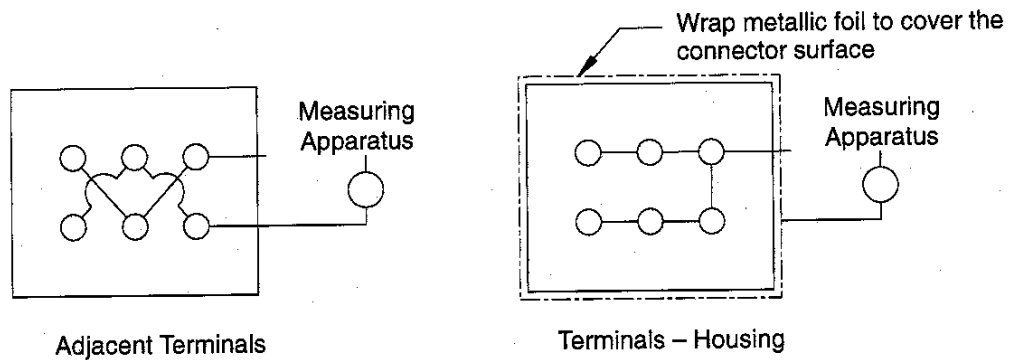


Fig.4

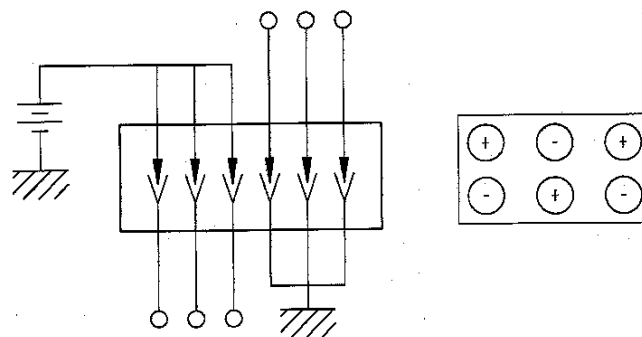


Fig.5

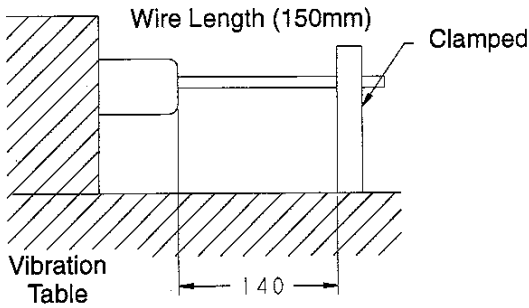


Fig.6

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

Fig.7

Part Number	Description
1318620-2	025 4P Plug Housing
1376515-1	025 4P Cap Assembly V-Type
1123343-1	025 Receptacle Contact

Appendix.1