1. Scope:

1.1 Contents

This specification covers the requirements for product performance, test methods and quality assurance provisions of 025 G W-W Connectors. 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.	114-5250-2/-3	Application Specification: Crimping of 025 Receptacle Contact
C.	114-5340	Application Specification: Crimping of 025 TH Tab Contact
C.	501-5409	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 D0204	Method of High and Low Temperature Test for Automobile Parts
E.	JIS D1601	Vibration Testing Method for Automobile Parts
F.	JIS R5210	Portland Cement

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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. Contact :

Description	Material	Finish
Tab (Male)	Brass	Tin Plating
Receptacle (Female)	Copper Alloy	Tin Plating

Fig.1

B. Housing : PBT

3.3 Ratings :

A. Voltage Rating : 12 V DC

B. Temperature Rating:

Pos.	Rating[℃]
8	-30～105℃ (Ambient temperature + Temperature rise due to energized current) Except for mechanical evaluations
12	
16	
24	
32	

Fig.2

3.4 Performance Requirements and Test Descriptions :

The product shall be designed to meet the electrical, mechanical and environmental performance requirements specified in Fig.3 and Fig4. 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	Confirmation of Product	Meets requirements of product drawing and AMP Specification 114-5250,114-5302.	Visually, dimensionally and functionally inspected per applicable quality inspection plan
		Electrical Requirements	
3.5.2	Termination Resistance (Low Level)	8 mΩ Max. (Initial) 16 mΩ Max. (Final)	Subject mated contacts assembled in housing to 20 mV Max. Open circuit at 10 mA. Fig. 5 AMP Spec. 109-5311-1
3.5.3	Termination Resistance (Specified Current)	8 mV/A Max. (Initial) 16 mV/A Max. (Final)	Subject mated contacts assembled in housing to 12 V Max. Open circuit at 1A. Fig.5 AMP Spec. 109-5311-2
3.5.4	Current Leakage	1 mA Max.	Impressed voltage 13V DC for 1 minute. Fig.6 AMP Spec. 109-5312
3.5.5	Temperature Rise	55°C Max. (Initial) 65°C Max. (Final)	Measure temperature rising by energized current; 3A. Current applied to every other position. Fig.7 AMP Spec. 109-5310
		Mechanical Requirements	
3.5.6	Connector Mating Force	Refer to Fig.12	Operation Speed: 100mm/min. Measure the force required to mate connectors. AMP Spec. 109-5206
3.5.7	Connector Unmating Force	Refer to Fig.12	Operation Speed: 100mm/min. Measure the force required to unmate connectors. (without housing lock) AMP Spec. 109-5206
3.5.8	Crimp Tensile Strength	Wire Size: mm^2 / AWG; Crimp Tensile Strength: Unit; N 0.3 / 22 / 58 Min. 0.5 / 20 / 88 Min.	Operation Speed: 100mm/min. Apply an axial pull-off load to crimped wire of contact secured on the tester. AMP Spec. 109-5205
3.5.9	Connector Locking Strength	100N Min.	Apply an axial pull-off load to one of the mated housing, measure locking strength. Operation Speed: 100mm/min. AMP Spec. 109-5210

Fig.3 (To be continued)

Para.	Test Items	Requirements		Procedures
3.5.10	Contact Retention Force	Primary Lock	30N Min.	Operation Speed: 100mm/min. Measure contact retention force AMP Spec. 109-5212
		W/ TPA	100N Min.	
3.5.11	Panel Lock Strength	100N Min.		Operation Speed: 100mm/min. Measure locking strength refer to Fig.8
3.5.12	Unlocking Force	20N Max.		Measure lock releasing force to overlap area=0.
	Environmental Requirements			
3.5.13	Vibration	No electrical discontinuity greater than 1 μ sec. shall occur. Satisfy requirements of test item on the "3.6 sequence".		Vibration Frequency: 10→50→10Hz/8min. Acceleration: 66.6 m / s^2 Vibration Direction and Duration: X: 2 hours, Y: 2 hours, Z: 4 hours Mounting: Fig. 9
3.5.14	Overloaded Current	No meltage and ignition are allowed during the test.		Applied current 14A for 1 hour after 11A for 24 hours at 60℃
3.5.15	Rush Current	Satisfy requirements of test item on the "3.6 sequence".		60℃, 1000 cycles. Refer to Fig.10
3.5.16	Temperature Life (Heat Aging)	Satisfy requirements of test item on the "3.6 sequence".		100℃, 120hours AMP Spec. 109-5104
3.5.17	Durability (Repeated Mate/Unmate)	Satisfy requirements of test item on the "3.6 sequence".		10 cycles AMP Spec. 109-5213
3.5.18	Resistance to "Kojiri"	Satisfy requirements of test item on the "3.6 sequence".		Mated/Pre-mated connector by 78N. Direction: Back/Front, Right/Left 10 cycles AMP Spec. 109-5215
3.5.19	Current Cycling	Satisfy requirements of test item on the "3.6 sequence".		Applied current referred to Fig.11 70℃
3.5.20	Drop Impact	No detrimental breakage without hindrance.		Connector is assembled with crimped terminals using 200mm wires. Drop it onto the concrete surface. Direction: X, Y and Z.

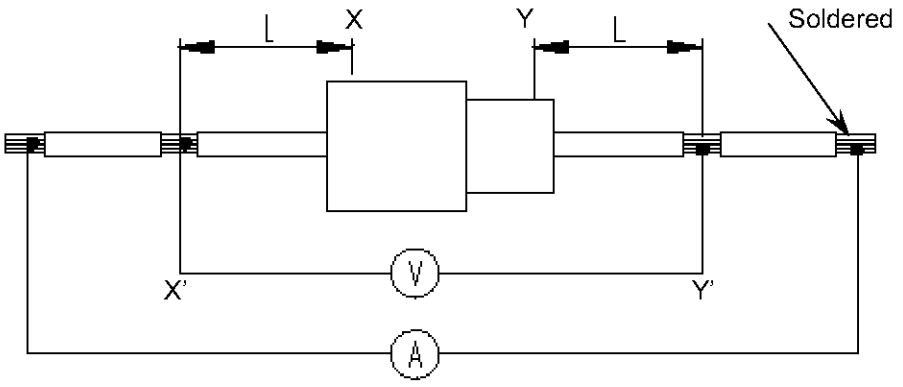
Fig. 3 (End)

3.6 Product Qualification Test Sequence

Para.	Test Items	Test Group						
		1	2	3	4	5	6	7
		Test Sequence[a]						
3.5.1	Confirmation of Product	1	1,5	1,3	1,5	1,5	1,5, 9,13	1,3
3.5.2	Terminal Resistance (Low Level)	3	2,6		2,6	2,6	2,6, 10,14	
3.5.3	Terminal Resistance (Rated Current)	4	3,7		3,7	3,7	3,7, 11,15	
3.5.4	Current Leakage	5						
3.5.5	Temperature Rising	6	8		8	8	16	
3.5.6	Connector Mating Force	2						
3.5.7	Connector Unmating Force	8						
3.5.8	Crimp Tensile Strength	9	9			9		
3.5.9	Housing Locking Strength	11				11		
3.5.10	Contact Retention Force	10				10		
3.5.11	Panel Lock Strength	12						
3.5.12	Unlocking Force	7						
3.5.13	Vibration		4					
3.5.14	Overloaded Current			2				
3.5.15	Rush Current				4			
3.5.16	Temperature Life (Heat Aging)					4		
3.5.17	Durability (Repeated Mate/Unmate)						4	
3.5.18	Resistance to "Kojiri"						8	
3.5.19	Current Cycling						12	
3.5.20	Drop Impact							2

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

Fig.4



Reduce resistance of X-X' and Y-Y' (wire "L") from X'-Y'

Fig.5

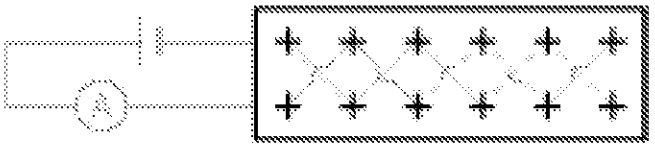


Fig.6



■; Loaded

Pos.	Wire Size(mm^2)	Current(A)	Temperature Rising
8	0.5	4	55℃ Max. (Initial) 65℃ Min. (Final)
12		4	
16		4	
24		4	
32		4	

Fig.7

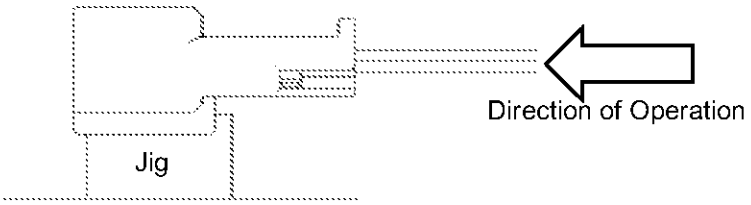


Fig.8

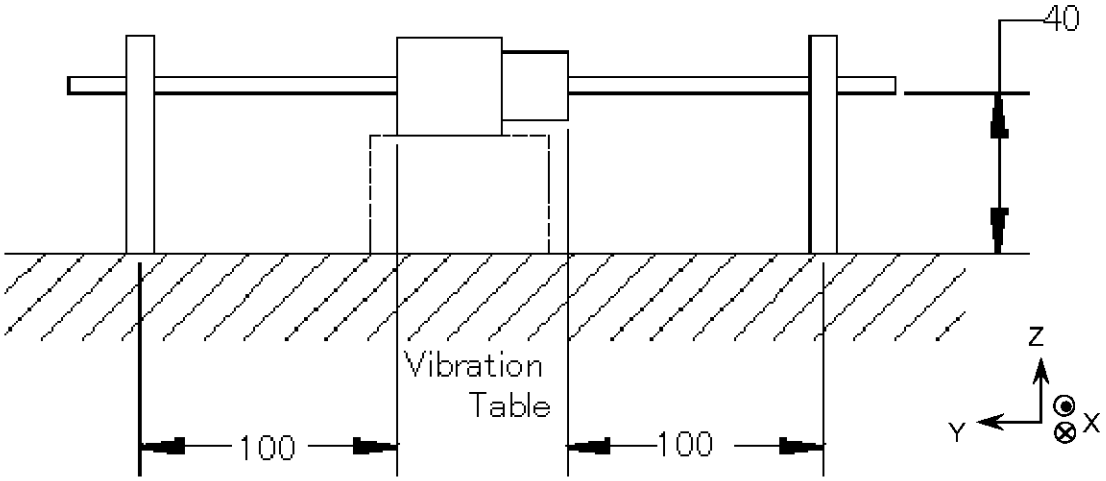


Fig. 9

Wire Size(mm^2)	Current(A)	Test condition	Duration
0.5	6	A	1min. ON / 9min. OFF: 1000cycles
	15	B	10sec. ON / 590sec. OFF: 1000 cycles

Fig.10

Wire Size(mm^2)	Current(A)	Duration
0.5	3	45 min. ON / 15 min OFF: 300 cycles

Fig.11

Connector Mating Force,Connector Unmating Force[N] Max				
8Pos	12Pos	16Pos	24Pos	32Pos
30	35	42	53	70

Fig.12

Part No.*	Description
1565804	025 G 8POS. CAP ASSY (MALE CONNECTOR)
1376352	025 SER 8POS. PLUG ASSY (FEMALE CONNECTOR)
1473407	025 G 12POS. CAP ASSY (MALE CONNECTOR)
1318774	025 SER 12POS. PLUG ASSY (FEMALE CONNECTOR)
1473410	025 G 16POS. CAP ASSY (MALE CONNECTOR)
1318386	025 SER 16POS. PLUG ASSY (FEMALE CONNECTOR)
1473413	025 G 24POS. CAP ASSY (MALE CONNECTOR)
1318917	025 SER 24POS. PLUG ASSY (FEMALE CONNECTOR)
1612268	025 G 32POS. CAP ASSY (MALE CONNECTOR)
1318747	025 SER 32POS. PLUG ASSY (FEMALE CONNECTOR)
1674298	025 TH RECEPTACLE CONTACT
1674742	025 TH TAB 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.