



## 025 Tab / Recep. Contacts (Wire to Wire Type)

### 1. Scope

#### 1-1. Contents

This specification covers the requirements for product performance, test methods and quality assurance provisions of 025 Tab/Recep contacts

#### 1-2. Qualification

When testing the .025 Tab/Recep products the following specified specifications and standards shall be used. All tests have to be done by using the applicable inspection plan and product.

### 2. Applicable Document

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. 109-1: General Requirements for Test Specifications
- B. Customer Drawings and Description;
  - 2350583: 025K Tab Contacts (SS, S)
  - 2389477: TH 025 Recep Contacts (SS, S)
- C. 114-61030: Application Specification

#### 2-2. Customer Documents & Industry Standard

- A. ES91500-00 Connector General (Hyundai Motor Company)
- B. ES91101-00 Electric Wiring (Hyundai Motor Company)

### 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;

Terminal

Description	Material	Finish
Tab(Male)	Brass(CuZn33)	Tin
Receptacle(Female)	PMC26(CuNiSi)	Tin

#### 3-3. Rating

Temperature shall be within a range of -40°C to +105°C.

The rating includes ambient temperature.

Voltage: 14.0 ± 0.1 VDC.

**3-4. Performance and Test Description**

Test Description	Requirement	Procedure										
<b>TERMINAL MECHANICAL</b>												
1. Visual Inspection	Assure parts used for testing are Free of damage and obvious defects. Application spec: 114-61030	Visually, dimensionally and functionally inspected per applicable qualify inspection plan.										
2. Terminal/Terminal Cycling	Preconditioning	Completely mate and un-mate each connector or terminal pair 10 times.										
3. Terminal-to-Terminal Engaging Force	5N	Operation speed: 50mm/min. Measure the force required to mate contact Initial.										
4. Terminal-to-Terminal Disengaging Force	5N	Operation speed: 50mm/min. Measure the force required to un-mate contact. 10 times.										
5. Terminal Bend Resistance	Terminal shall not be damaged by a 4N load	Operation speed: 50mm/min. Original position, the terminal rotated 90° and 180° from the position shown in Fig. 1										
6. Terminal Crush Resistance	Withstand a crush load of 70N without visible fracture or degradation of electrical performance, terminal insertion, or terminal cavity lockup.	Operation speed: 50mm/min. To top and side of terminal box Fig. 2										
7. Terminal Retention Force *	Initial: 35 min.(Primary lock only) Final: 60N min. (Secondary lock)	Operation speed: 50mm/min. Fix the housing after inserting crimped terminals. Extend one line of cable in axial direction at a position 50~100 mm away from crimped part										
8. Crimp Tensile Strength	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Wire Size (mm<sup>2</sup>)</th> <th style="text-align: left;">Strength (N)</th> </tr> </thead> <tbody> <tr> <td>0.13</td> <td>35N min</td> </tr> <tr> <td>0.22</td> <td>40N min</td> </tr> <tr> <td>0.3</td> <td>60N min</td> </tr> <tr> <td>0.5</td> <td>90N min</td> </tr> </tbody> </table>	Wire Size (mm <sup>2</sup> )	Strength (N)	0.13	35N min	0.22	40N min	0.3	60N min	0.5	90N min	Operation speed: 50mm/min. Apply an axial pull-off load to crimped wire of contact secured on the tester.
Wire Size (mm <sup>2</sup> )	Strength (N)											
0.13	35N min											
0.22	40N min											
0.3	60N min											
0.5	90N min											

Table 1 (Continued)

<b>TERMINAL ELECTRICAL</b>		
9. Termination Resistance * (Low Level)	Initial resistance : 10 mΩ Max. Resistance after durability test : 20 mΩ Max	Subject mated contacts assembled in housing to 20±5mV open circuit at 100 mA Max. Fig. 3
10. Maximum Current Rating	Satisfy requirements of test item on the "3.6 sequence."	Max terminal current measurements are done. Temp rising 40°C Max. Refer to SAE/USCAR-2 5.3.3.3 Fig. 4
11. Current Cycling	40°C maximum temperature rise Over ambient. No ignition is allowed during the test.	Only perform the mate/unmate conditioning on a mated pair only once if the pair is used in multiple tests. 45 minutes "ON", 15 minutes "OFF" 1008 Hours
12. Instant Cutoff *	No electrical discontinuity exceeds 4.3V for more than 10 μsec shall occur.	Connect in series. Apply power with a waveform recorder and check. 5V, 100mA Fig. 5
<b>TERMINAL ENVIRONMENTAL</b>		
13. Vibration *	Satisfy requirements of test item on the "3.6 sequence."	Frequency: 20-200 Sweep time: 3min Max. Acceleration: 4.4G Direction: X, Y, Z Duration: 40hours per each direction
14. Thermal Shock *	Satisfy requirements of test item on the "3.6 sequence."	-40°C/60 min. 105°C/60min. Temp transfer time: 5min. Max. Making this a cycle, repeat 200 cycles Fig. 6
15. Temp/Humidity *	Satisfy requirements of test item on the "3.6 sequence."	5cycle Fig. 7
16. Temp Rising *	Satisfy requirements of test item on the "3.6 sequence."	Measure temperature rising at wire crimped by applied current to all positions.

Table 1 (End)

\* The test is required with applicable housing.

**3.6 Product Qualification Test Sequence**

Test Examination	Test Group (sample quantity: 10 EA min)									
	TG1	TG2	TG3	TG4	TG5	TG6	TG7	TG8	TG9	TG10
	Test Sequence*									
1. Visual Inspection	1,4	1,3	1,3	1,3	1,3	1,3	1,6	1,4	1,4	1,5
2. Connector/Terminal Cycling	2									
3. Terminal-to-Terminal Engaging Force	2									
4. Terminal-to-Terminal Disengaging Force	3									
5. Terminal Bend Resistance		2								
6. Terminal Crush Resistance			2							
7. Terminal Retention Force				2						4
8. Crimp Tensile Strength					2					
9. Voltage Drop						2	5	3	3	3
10. Maximum Current Rating							2			
11. Current Cycling							3			
12. Instant Cutoff								2		
13. Vibration								2		
14. Thermal Shock									2	
15. Temp/Humidity										2
16. Temp Rising							2,4			

\* Numbers indicated sequence in which tests are performed.

## 3.7 Test Reference / Appendix

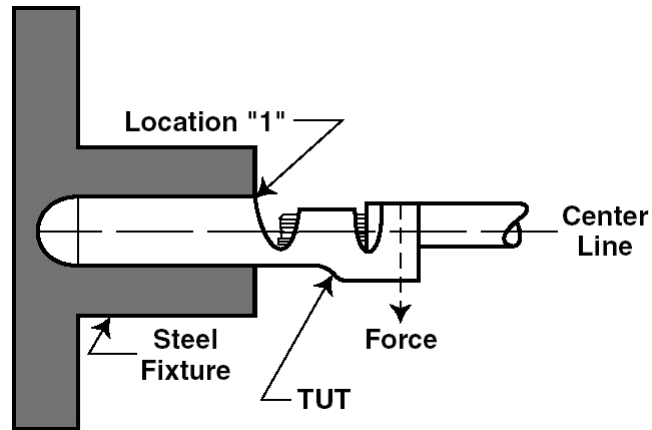


Fig. 1 Terminal Bend Resistance

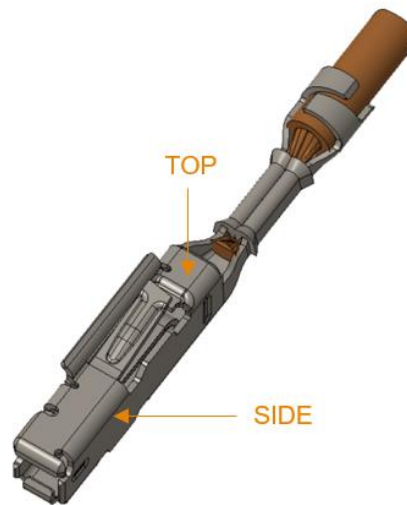


Fig.2 Terminal Crush Resistance

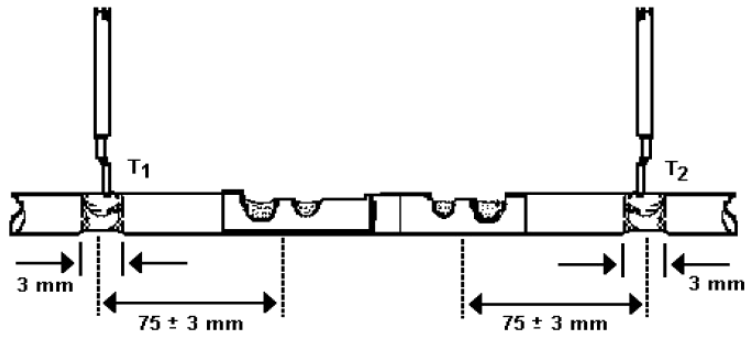


Fig. 3 Voltage Drop

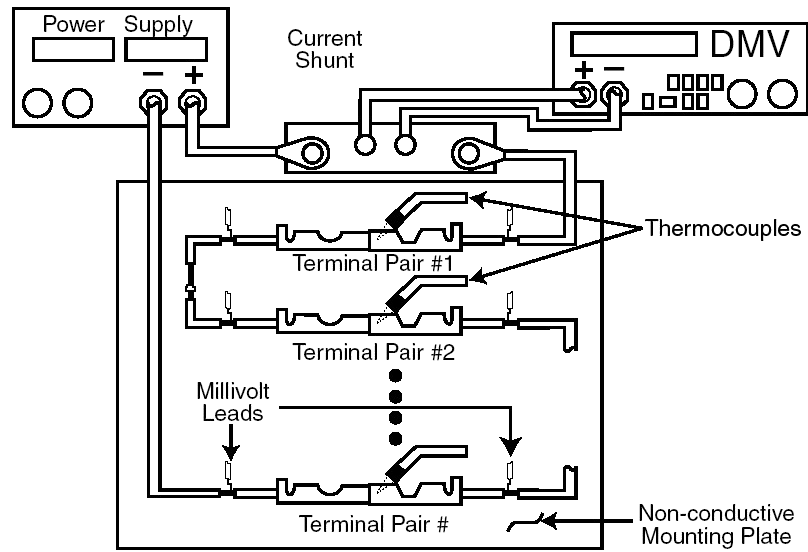


Fig. 4 Maximum Current Rating

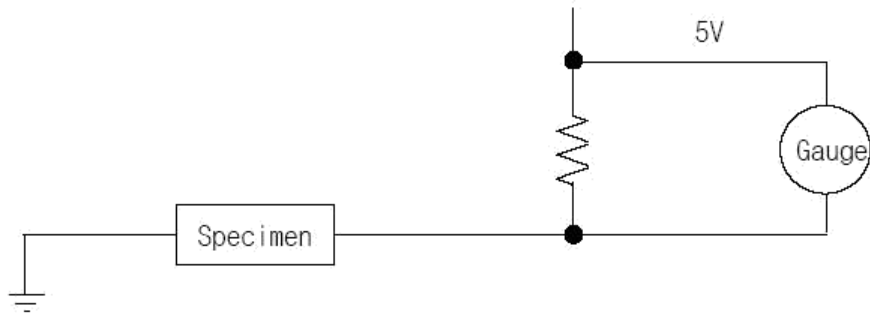


Fig. 5 Instant Cutoff

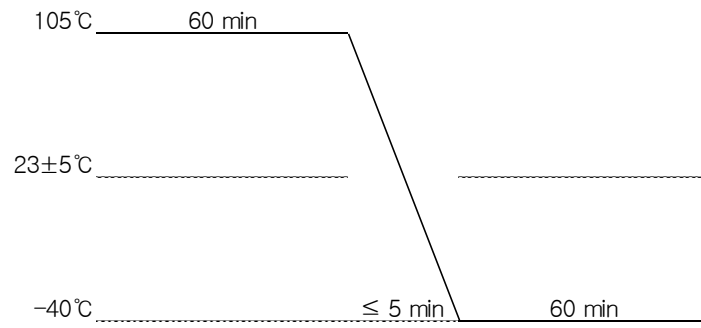


Fig. 6 Thermal Shock

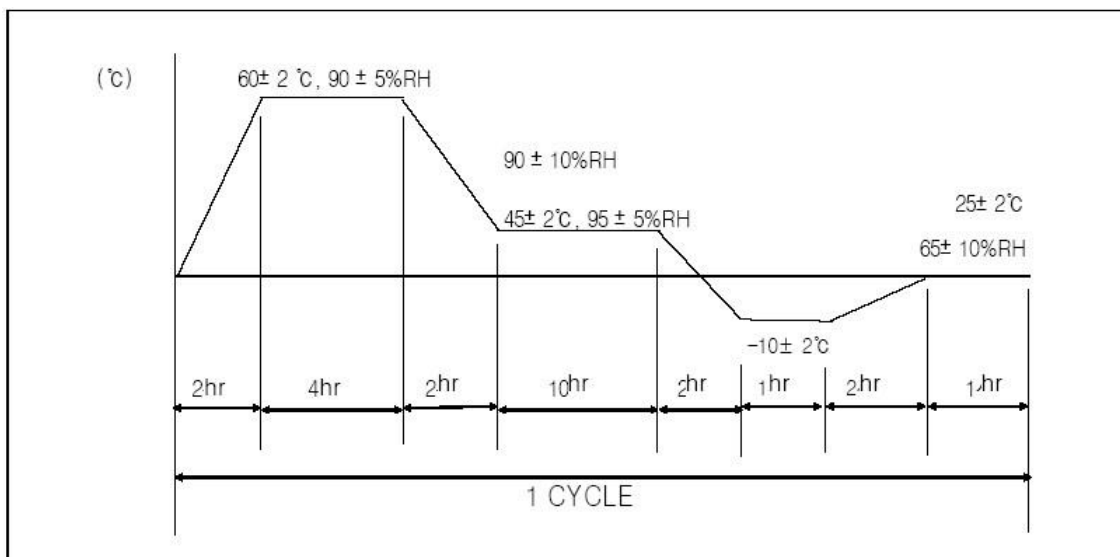
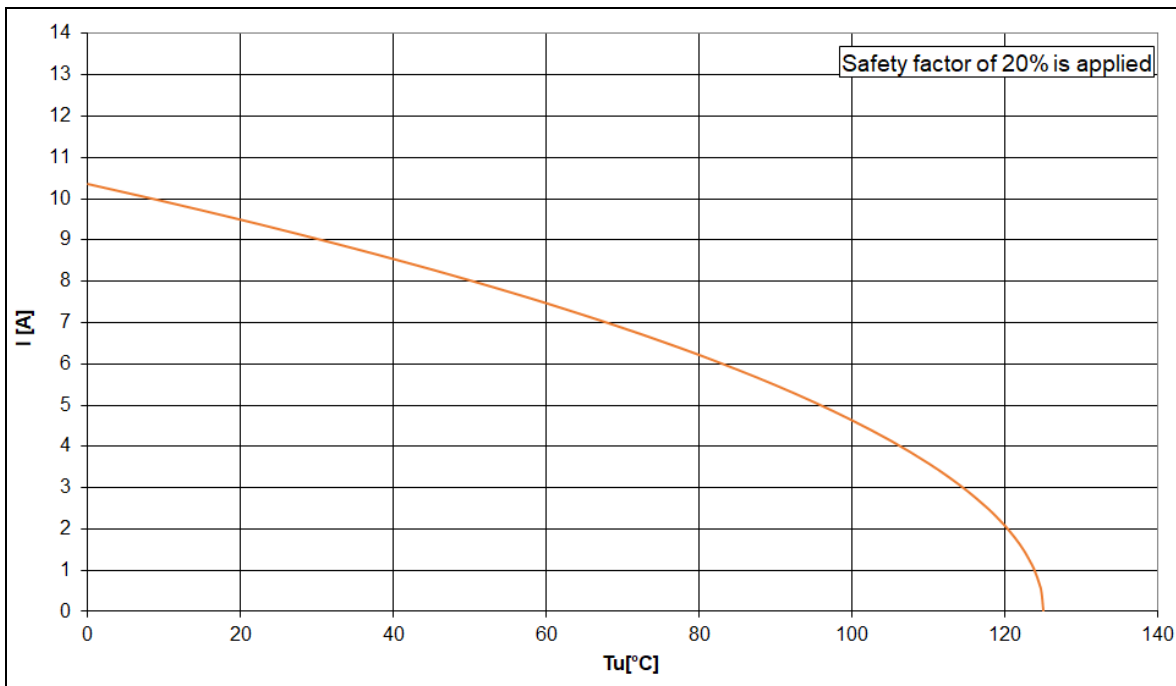
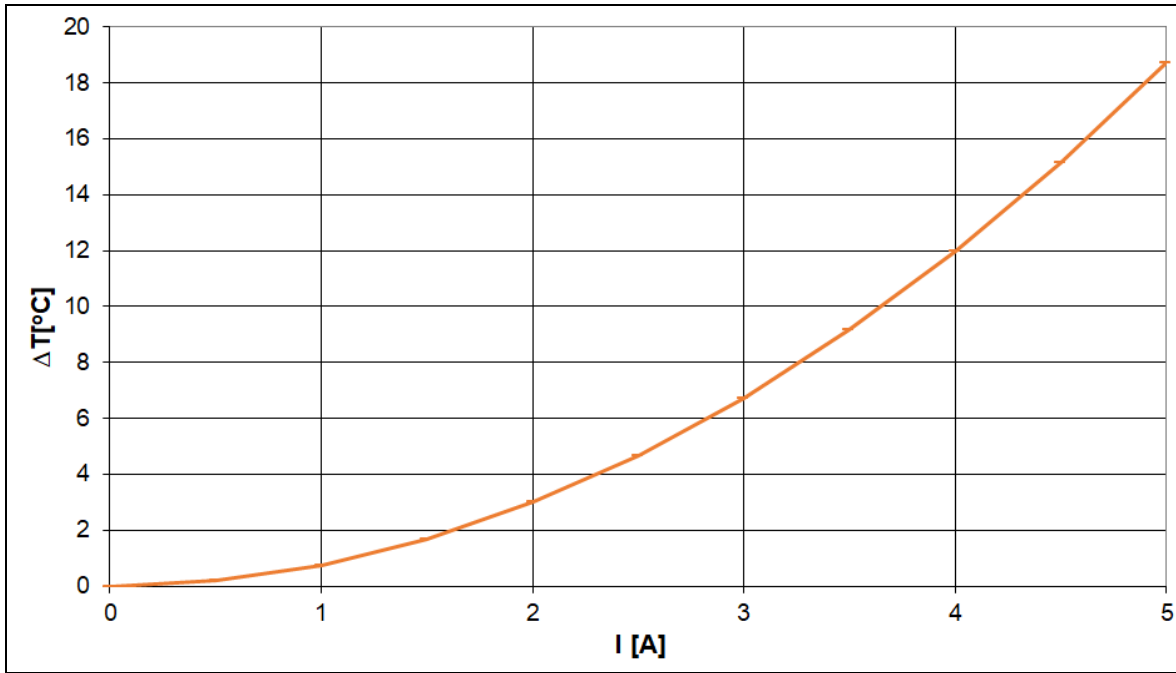


Fig. 7 Temp/Humidity



#### 4. Derating Curve and Temperature Rising

4-1. 2350583-2 and 2389477-2



**AVSS 0.5SQ WIRE**