

## 1. Scope :

### 1.1 Contents

This specification covers the requirements for product performance, test methods and quality assurance provisions of Spring Finger 2.7H.

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. 501-61069 : Test Report

### 2.2 Commercial Standards and Specifications

A. MIL STD. 202

### 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

Material : Copper alloy, Au plating on contact area Ni under plating all over.

#### 3.3 Ratings :

A. Temperature Rating: - 40 °C to 85 °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. 1. 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            | No physical damage  | Visual inspection<br>No physical damage  |
| <b>Electrical Requirements</b>    |                                   |   |  |
| 3.5.2                             | Contact Resistance<br>(Low Level) | Initial, 50mΩ Max.  | Mate pad with dry circuit(20mV Max.,<br>10mA Max.) at 50% WP.<br>(Spring height: 2.3mm)<br>4-wire measurement is required.<br>Measuring condition shown as Fig.4 |
| <b>Mechanical Requirements</b>    |                                   |   |  |
| 3.5.3                             | Normal Force                      | Normal force at 2.3mm spring<br>Height: 0.4N Min  | Stroke the spring top to 2.3mm product<br>height.<br>Measuring condition shown as Fig.5  |
| 3.5.4                             | Durability                        | Displacement rate of contact<br>height should be under 20%<br>from initial height.<br>No physical damage and shall<br>meet requirements of<br>subsequent tests. | Speed: 600cycle/hour, Total 10000cycle<br>Stroke: 80% of Working position<br>(Spring height 2.06mm)  |
| 3.5.5                             | Solderability                     | Solderable area shall have a<br>minimum of 95% solder<br>coverage. For lead free solder<br>pot temperature shall be<br>240°C±5°C                                | Peak Temperature : 240°C±5°C,<br>Reflow Time(230°C Min) : 45~60 seconds.   |
| <b>Environmental Requirements</b> |                                   |   |  |
| 3.5.6                             | Damp heat                         | Displacement rate of contact<br>height should be under 20%<br>from initial height.<br>No physical damage and shall<br>meet requirement of<br>subsequent test.   | 120 hours at Temp. 85°C ±2°C, R/H 85 ±<br>5%<br>It should be tested at 100% WP<br>(Spring height 1.9mm)  |
| 3.5.7                             | Thermal Shock                     | No physical damage and shall<br>meet requirement of<br>subsequent test.   | Ta= - 40°C for 2hour ;Tb= +85°C for 2hour<br>Total 15cycles.<br>It should be tested at 100% WP<br>(Spring height: 1.9mm)   |
| 3.5.8                             | Salt spray                        | No physical damage and shall<br>meet requirement of<br>subsequent test.   | 48 hours spray, At temp. 35±2 °C<br>R/H 90~95%, Salt NaCl mist 5%<br>After test wash parts and return to room<br>ambient for 2 hours.                            |

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|       |                              |   |  |
|-------|------------------------------|---|--|
| 3.5.9 | Resistance to Soldering heat | No physical damage and shall meet requirement of subsequent test. | Reflow condition shown as Fig.3<br>Peak Temperature: 245°C |
|-------|------------------------------|---|--|

Fig 1. (END)

The meaning of text "Physical damage" in the table above is :

- No dimension change
- No pinhole corrosion of plating
- No general corrosion of plating
- No adhesion problem of plating
- No blistering of plating
- No flaking of plating
- No loosen parts
- No cracks on any parts

**4. Product Qualification Test Sequence**

| Para. | Test Examination             | Test Group        |     |     |     |     |
|-------|------------------------------|-------------------|-----|-----|-----|-----|
|       |                              | 1                 | 2   | 3   | 4   | 5   |
|       |                              | Test Sequence (a) |     |     |     |     |
| 3.5.1 | Examination of Product       | 1                 | 1,3 | 1,5 | 1,5 | 1,5 |
| 3.5.2 | Contact resistance           | 3,6               |     | 2,4 | 2,4 | 2,4 |
| 3.5.3 | Normal force                 | 4,7               |     |     |     |     |
| 3.5.4 | Durability                   | 5                 |     |     |     |     |
| 3.5.5 | Solderability                |                   | 2   |     |     |     |
| 3.5.6 | Damp heat                    |                   |     | 3   |     |     |
| 3.5.7 | Thermal Shock                |                   |     |     | 3   |     |
| 3.5.8 | Salt spray                   |                   |     |     |     | 3   |
| 3.5.9 | Resistance to Soldering heat | 2                 |     |     |     |     |

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

Fig. 2

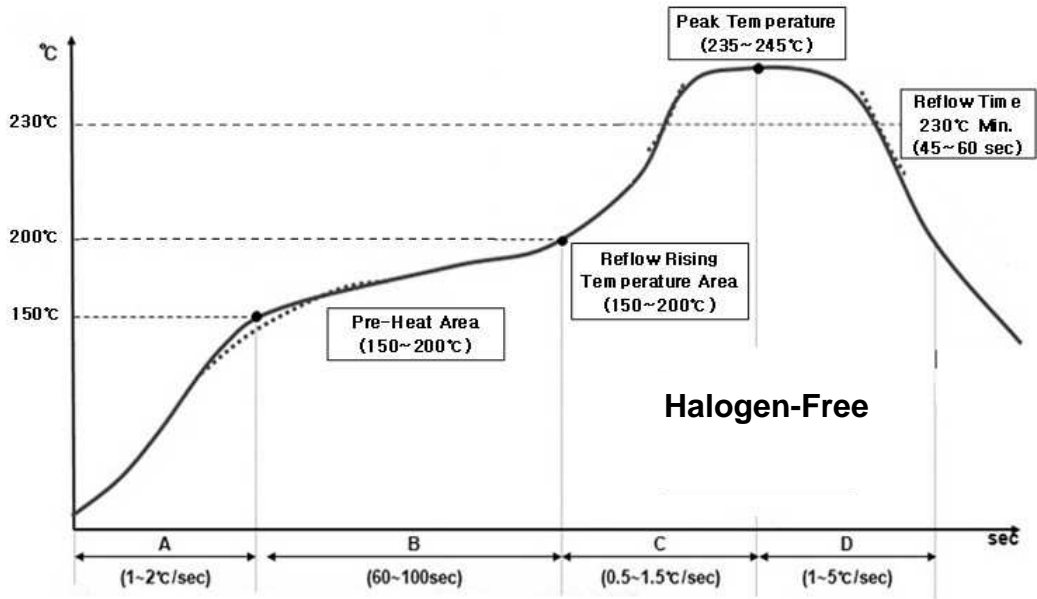


Fig.3 Reflow temperature profile

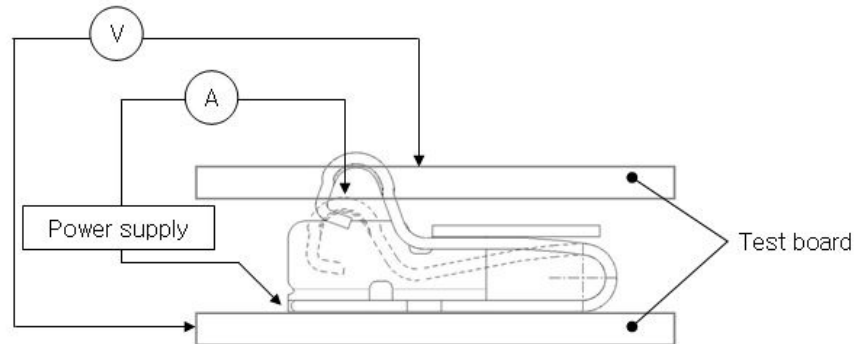


Fig.4 Contact Resistance Measuring Points

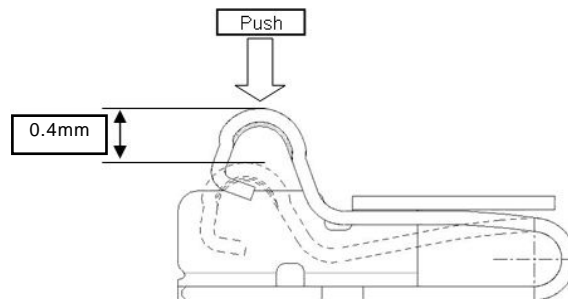


Fig.5 Contact Normal Force