

SC-17

Part No. 3394-0001

Product Specification

Qualification Test Report No. TR-17096

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|------|--------|------------------|-------------|-------------|--------------|
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| Rev. | ECN | Date | Prepared by | Checked by | Approved by |

1. Scope

This product specification defines the test conditions and the performances of the SC-17, PCB mounting clip.

2. Product Name and Parts No.

2.1 Product Name

SC-17

2.2 Parts No.

3394-0001

3. Rating

Operating Conditions

Operating temperature: 233 to 358K(-40°C to 85°C) (Containing temperature rise by current)

Operating humidity: 85% max

4. Test and Performance

Test Condition

This initial test is equal to it's at shipping condition and unless otherwise specified, all tests and measurements shall be performed under the following conditions in accordance with MIL-STD-202.

Temperature: 288K to 308K(15°C to 35°C)

Pressure: 866hPa to 1066hPa(650mmHg to 800mmHg)

Relative humidity: 45 to 75% R.H.

4.1. Electrical Performance

1. Contact resistance

Reference standard: MIL-STD-202-307

Test conditions: Solder the clip to the test board and mate the test cable, then measure the contact resistance by the four terminal method.

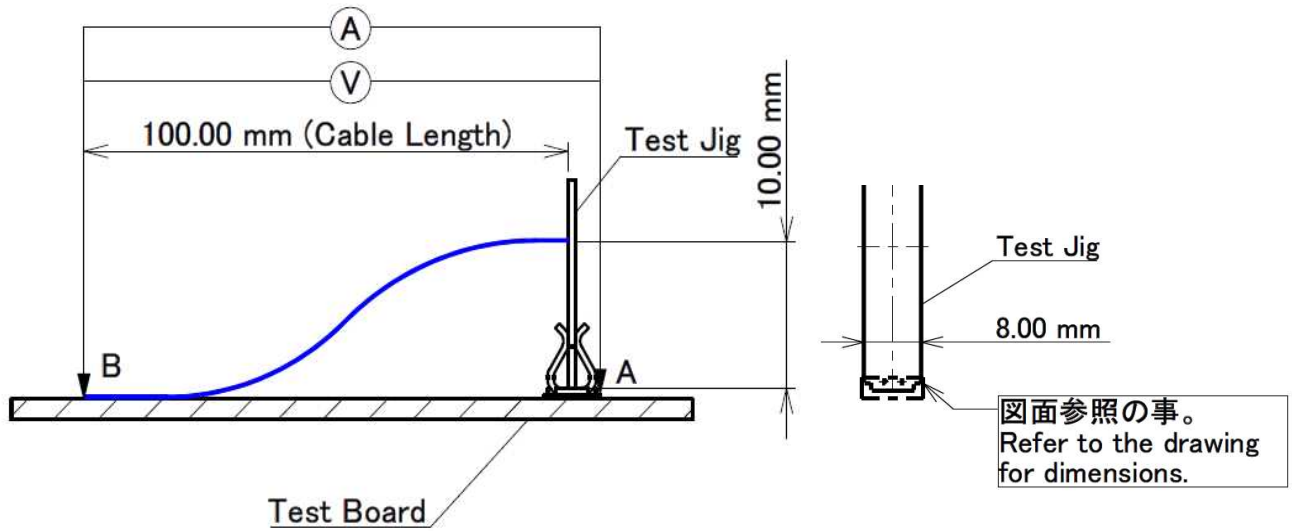


Fig.1

Pass criteria: Ground contact
Initial: 120 mΩ MAX. After testing: ΔR 40 mΩ MAX.

4.2. Mechanical Performance

1. Mating force and Un-mating force

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| Reference standard: | - | |
| Test conditions: | Solder the clip to the test board and mate the Shield Case, then measure of initial and mating/un-mating 3 cycles at a speed 25±3 mm/minutes. | |
| Pass criteria: | Mating force 29.5 N MAX. | Un-mating force 8 N MIN. |

2. Vibration

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| Reference standard: | - | |
| Test conditions: | Apply the following shock to the mating connector. During the testing, run 100 mA DC to check electrical discontinuity. Frequency : 10 Hz→55 Hz→10Hz/approx. 1min. Directions : Three mutually perpendicular direction. Total Amplitude : 1.52 mm Sweep duration : 2 hours for each direction, a total of 6 hours. | |
| Pass criteria: | Contact resistance: Shall meet 4.1.1. Electrical discontinuity: No electrical discontinuity greater than 1 µs shall occur. Appearance: No abnormality adversely affecting the performance shall occur. | |

3. Shock

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| Reference standard: | - | |
| Test conditions: | Apply the following shock to the mating connector. During the testing, run 100mA DC to check electrical discontinuity. Peak value of acceleration: 50G Duration: 11 msec Wave Form: Half Sinusoidal Directions: 6 mutually perpendicular direction Cycle: 3 cycles about each direction | |
| Pass criteria: | Contact resistance: Shall meet 4.1.1. Electrical discontinuity: No electrical discontinuity greater than 1 µs shall occur. Appearance: No abnormality adversely affecting the performance shall occur. | |

4.3. Environmental Performance

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| 1. Thermal shock | |
| Reference standard: | MIL-STD-202-107 G, Test condition A |
| Test conditions: | Apply the following environment to the mating clip. Temperature: 218K(-55°C), 30min.→358K(85°C), 30min. Transition time: 5min. MAX. No. of cycles: 5 cycles |
| Pass criteria: | Contact resistance: Shall meet 4.1.1. Appearance: No abnormality adversely affecting the performance shall occur. |

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| 2. High temperature life | |
| Reference standard: | MIL-STD-202-108 A, Test Condition B |
| Test conditions: | Apply the following environment to the mating clip. Temperature: 358±2K (85±2°C) Duration: 250 hours |
| Pass criteria: | Contact resistance: Shall meet 4.1.1. Appearance: No abnormality adversely affecting the performance shall occur. |

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| 3. Humidity (Steady state) | |
| Reference standard: | MIL-STD-202-103 B, Test Condition A |
| Test conditions: | Apply the following environment to the mating clip. Temperature: 313±2K (40±2°C) Humidity: 90~95%RH Duration: 240 hours |
| Pass criteria: | Contact resistance: Shall meet 4.1.1. Appearance: No abnormality adversely affecting the performance shall occur. |

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| 4. Humidity(Cycling) | |
| Reference standard: | MIL-STD-202-106 |
| Test conditions: | Apply the following environment to the mating clip. Temperature: 298[263]~338K (25[-10]~65°C) Humidity: 90~98%RH Duration: 10 cycles (240hours) |
| Pass criteria: | Contact resistance: Shall meet 4.1.1. Appearance: No abnormality adversely affecting the performance shall occur. |

4.3. Environmental Performance

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| 5. Salt water spray | |
| Reference standard: | MIL-STD-202-101, Test Condition B |
| Test conditions: | Apply the following environment to the mating clip. Temperature: $308 \pm 2K$ ($35 \pm 2^\circ C$) Salt water density: $5 \pm 1\%$ [by weight] Duration: 48 hours |
| Pass criteria: | Contact resistance: Shall meet 4.1.1. Appearance: No abnormality adversely affecting the performance shall occur. |

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| 6. H ₂ S gas | |
| Reference standard: | - |
| Test conditions: | Apply the following environment to the mating clip. Temperature: $313 \pm 2K$ ($40 \pm 2^\circ C$) Relative humidity: $80 \pm 5\%RH$ Gas: H ₂ S $3 \pm 1ppm$ Duration: 48 hours |
| Pass criteria: | Contact resistance: Shall meet 4.1.1. Appearance: No abnormality adversely affecting the performance shall occur. |

4.4. Others

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| 1. Solder ability | |
| Reference standard: | MIL-STD-202-208 |
| Test conditions: | Dip the solder tine of the contact in the solder bath at $518 \pm 5K$ ($245 \pm 5^\circ C$) for 5 ± 0.5 seconds after immersing the tine in the flux of RMA or R type for 5 to 10 seconds. |
| Pass criteria: | More than 95% of the dipped surface shall be evenly wet. |

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| 2. Soldering heat resistance | |
| Reference standard: | - |
| Test conditions: | Reflow temperature as shown in Fig. 2. The number of times of Reflow is within 2. The nitrogen reflow is not applicable. |
| <p style="text-align: center;">Fig.2</p> | |
| Pass criteria: | No abnormality adversely affecting the performance shall not occur. |

4.5 Test Sequence and Specimen Quantity

Table 1 Test Sequence and Sample Quantity

| 試験項目 Test Item | グループ/Group | | | | | | | | | |
|---------------------------|------------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| | A | B | C | D | E | F | G | H | J | K |
| Contact Resistance | 2,6 | 1,3,5 | 1,3 | 1,3 | 1,3 | 1,3,5 | 1,3 | 1,3 | | |
| Mating Force | 1,5 | | | | | | | | | |
| Un-mating Force | 3,7 | | | | | | | | | |
| Durability | 4 | | | | | 2 | | | | |
| Vibration | | 2 | | | | | | | | |
| Shock | | 4 | | | | | | | | |
| Thermal Shock | | | 2 | | | | | | | |
| High Temperature Life | | | | 2 | | | | | | |
| Humidity (Steady State) | | | | | 2 | | | | | |
| Humidity (Cycling) | | | | | | 4 | | | | |
| Salt Water Spray | | | | | | | 2 | | | |
| H2S Gas | | | | | | | | 2 | | |
| Solder ability | | | | | | | | | 1 | |
| Soldering Heat Resistance | | | | | | | | | | 1 |
| Sample QTY. | 5 pcs. | 5 pcs. | 5 pcs. | 5 pcs. | 5 pcs. | 5 pcs. | 5 pcs. | 5 pcs. | 10 pcs. | 10 pcs. |

※Numbers indicate test sequences.

5. Recommended Metal Mask

Refer to drawing for the recommended metal mask thickness and opening dimension.

6. Load Capacity

You may put a stopper above the mated connector to prevent it from coming out. Please apply 29.5N max. to the top surface of the cover evenly as shown below.

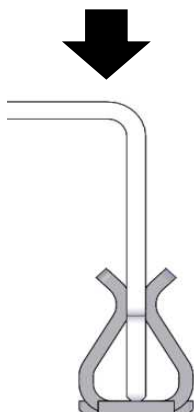


Fig.3