

|                          |                   |                                                                         |                           |
|--------------------------|-------------------|-------------------------------------------------------------------------|---------------------------|
| <b>ENGINEERING DEPT.</b> |                   | <b>PRODUCT SPECIFICATION</b><br><b>For CF86 Series Connector System</b> | <b>SPEC.NO.: SPCF095C</b> |
| <b>REVISIONS</b>         | <b>ECNT120150</b> |                                                                         | <b>PAGE: 1/5</b>          |

**1. SCOPE:**

This specification contains the test requirement of subject connectors when tested under the condition and inserted on the specified size FPC and FFC

**2. APPLICABLE STANDARDS:**

|                 |                                                                                   |
|-----------------|-----------------------------------------------------------------------------------|
| MIL - STD - 202 | Methods for test of connectors for electronic equipment                           |
| EIA - 364       | Test methods for electrical connectors                                            |
| J-STD-020       | Resistance to soldering Temperature for through hole Mounted Devices              |
| SS-00254        | Test methods for electronic components ,LEAD-FREE soldering Part design standards |

**3. APPLICABLE SERIES NO.: CF86 Series**

**4. SHAPE, CONSTRUCTION AND DIMENSIONS**

See attached drawings

**5. MATERIALS**

See attached drawings

**6. ACCOMMODATED P.C.BOARD**

6.1 Thickness: 0.5 mm (.020") ~ 2.0 mm (.079")  
6.2 P.C. Board Layout: See attached drawings

**7. ACCOMMODATED FPC/FFC THICKNESS**

0.3 ± 0.03 mm (.012±.001")

REVIEWED : Eisley APPROVED : Sun VERIFIED : Jessie .

|                          |                   |                                                                         |                           |
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**8. ELECTRICAL PERFORMANCE:**

|     | ITEM                      | TEST CONDITION                                            | REQUIREMENT                 |
|-----|---------------------------|-----------------------------------------------------------|-----------------------------|
| 8.1 | Rated current and voltage |                                                           | 0.5A max.<br>50V AC/DC max. |
| 8.2 | Contact resistance        | Dry circuit of DC 20 mV max. , 10 mA max.                 | Less than 30 mΩ             |
| 8.3 | Dielectric strength       | When applied AC 250 V 1 minute between adjacent terminal  | No change                   |
| 8.4 | Insulation resistance     | When applied DC 500 V between adjacent terminal or ground | More than 50 MΩ             |

**9. MECHANICAL PERFORMANCE:**

|     | ITEM                                           | TEST CONDITION                                                                                  | REQUIREMENT                                |
|-----|------------------------------------------------|-------------------------------------------------------------------------------------------------|--------------------------------------------|
| 9.1 | Contact retaining force in insulator           | Retention speed $25 \pm 3$ mm per minute from housing                                           | More than 0.08 Kgf                         |
| 9.2 | FFC / FPC insert force<br>(Reference data)     | Measure force to insert using 0.30 mm thickness FPC / FFC at speed $25 \pm 3$ mm per minute     | ( $0.12 \times$ no. of Contacts) Kgf max.  |
| 9.3 | FFC / FPC withdrawal force<br>(Reference data) | Measure force to withdrawal using 0.30 mm thickness FPC / FFC at speed $25 \pm 3$ mm per minute | ( $0.015 \times$ no. of Contacts) Kgf min. |
| 9.4 | Durability                                     | Connector shall be subjected to 20 cycles of insertion and withdrawal                           | Contact resistance:<br>Less than 60 mΩ     |

**10. ENVIRONMENTAL PERFORMANCE:**

|      | ITEM             | TEST CONDITION                                                         | REQUIREMENT                                                                                               |
|------|------------------|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| 10.1 | Temperature rise | Then carried the rated current                                         | 30°C max.                                                                                                 |
| 10.2 | Vibration        | 1.5 mm 10-55-10 HZ / minute each<br>2 hours for X , Y and Z directions | Appearance: No damage<br>Contact resistance :<br>Less than 60 mΩ<br>Discontinuity:<br>1 micro second max. |
| 10.3 | Solder ability   | Soldering time: $3 \pm 0.5$ second<br>Soldering pot: $245 \pm 5$ °C    | Minimum:<br>95% of immersed area                                                                          |

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|      | ITEM                         | TEST CONDITION                                                                                                                                                                                                                                                                              | REQUIREMENT                                                                                                                                              |
|------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10.4 | Resistance to soldering heat | Soldering time: 20 second Max.<br>Soldering pot: 250~260 °C<br>Refer Reflow temperature profile(12.1)                                                                                                                                                                                       | No damage                                                                                                                                                |
| 10.5 | Hand Sodering Method         | Use a soldering iron that has a sufficient head capacity and stability of temperature. The tip of iron should be shaped so as not to touch the part body directly. Temperature : 370~400 °C 5 Sec. Max.                                                                                     | No damage                                                                                                                                                |
| 10.6 | Heat aging                   | 85 ± 2 °C , 96 hours                                                                                                                                                                                                                                                                        | Appearance: No damage<br>Contact resistance:<br>Less than 60 mΩ                                                                                          |
| 10.7 | Cold Resistance              | -40 ± 3 °C , 96 hours                                                                                                                                                                                                                                                                       | Appearance: No damage<br>Contact resistance:<br>Less than 60 mΩ                                                                                          |
| 10.8 | Humidity                     | 60 ± 2 °C , 90-95% RH , 96 hours<br>measurement must be taken within 60 min.<br>after tested                                                                                                                                                                                                | Appearance: No damage<br>Contact resistance:<br>Less than 60 mΩ<br>Dielectric strength:<br>To pass para 8-3<br>Insulation resistance:<br>More than 20 MΩ |
| 10.9 | Temperature cycling          | One cycle consists of :<br>(1) -55 <sup>+0</sup> <sub>-3</sub> °C , 30 min.<br>(2) Room temp. 10-15 min.<br>(3) 85 <sup>+3</sup> <sub>-0</sub> °C , 30 min.<br>(4) Room temp. 10-15 min.<br>Connector shall be mated with applicable FPC/FFC, and subjected to the conditions for 5 cycles. | Appearance: No damage<br>Contact resistance:<br>Less than 60 mΩ                                                                                          |

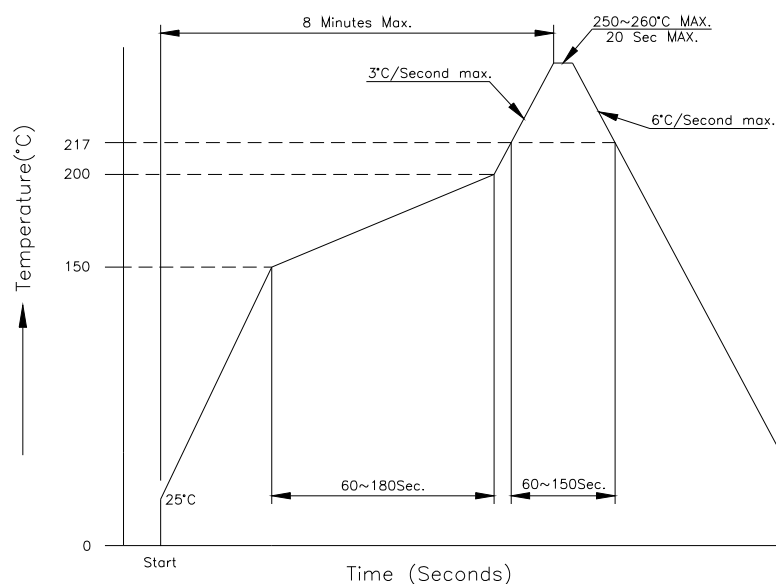
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| ITEM             | TEST CONDITION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | REQUIREMENT                                                                           |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 10.10 Salt spray | <p>Temperature: <math>35 \pm 3^{\circ}\text{C}</math><br/> Solution: <math>5 \pm 1\%</math><br/> Spray time: <math>48 \pm 4</math> hours<br/> (Stamping before plated)<br/> Spray time: <math>24 \pm 4</math> hours<br/> (Stamping after plated)<br/> Mate connectors and expose to the following salt mist conditions. Upon completion of the exposure period, salt deposits shall be removed by a gentle wash or dip in running water and dried naturally, after which the specified measurements shall be performed.<br/> The specimens shall be suspended from the top using waxed twine, string or nylon thread.<br/> The test only define the plating area, without plating area (as copper cross section) will not be defined.<br/> (EIA 364-26B / MIL-STD-202 Method 101)</p> | <p>Appearance: No damage<br/> Contact resistance:<br/> Less than twice of initial</p> |

11. AMBIENT TEMPERATURE RANGE:  $-55$  to  $+85^{\circ}\text{C}$

12. Recommended IR Reflow Temperature Profile:

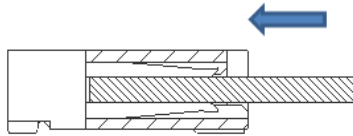
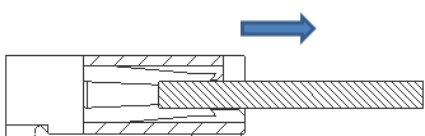
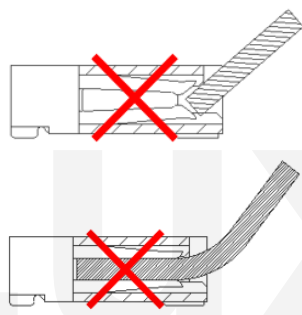
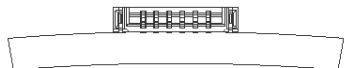
12.1 Using Typical Solder Paste



|                   |            |                                                           |                    |
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### 13. OPERATING INSTRUCTIONS AND PRECAUTIONS:

#### 13.1 Operating instruction

|                                                                                                      |                                                                                      |
|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Joining step 1:<br>FPC into connectoe parallel.                                                      |    |
| Joining step 2:<br>Withdraw FPC from connector parallel.                                             |    |
| <b>Waming!!</b><br>When the angle that FPC inserts in is askew, may cause and lead openly and badly. |   |
| <b>Waming!!</b><br>The roughness of PCB board must be in 0.1mm max.                                  |  |