# 0.5mm pitch H1.0 FPC CONN.

# (Back Flip)

## 1. Intrdouction

### 1.1 Purpose

Testing was performed on the 0.5mm pitch H1.0 FPC Connector. To determine its conformance to the requirements of Product Specification 108-115142.

### 1.2 Scope

This report covers the electrical, mechanical, and environmental performance of the FPC Connector.

### 1.3 Conclusion

The FPC connector meets the electrical, mechanical, and environmental performance requirements of Design Objective, 108-115142.

### 1.4 Product Description

The FPC connector is made of copper alloy. And it is Gold plating on function area and the under plating is Nickel.

### 1.5 Test samples.

The test samples were taken randomly from normal current production lots. And the following product were used for test.

| Test Group | Quality | Requirements |
|---|---|---|
| A,B,C,D,E,F,G,H,I,J | 5 pcs Each | 0.5mm pitch H1.0 FPC connector |

### 1.6 Product Qualification Test Sequence

| Test or Examination | Test Group | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | I | J |
| | Test Sequence | | | | | | | | | |
| Examination of Product | 1,9 | 1,3 | 1,7 | 1,6 | 1,3 | 1,3 | 1,3 | 1,7 | 1,7 | 1,5 |
| Contact resistance | 2,8 | | 2,6 | 2,5 | | | | 2,4,6 | 2,4,6 | 2,4 |
| Dielectric withstanding voltage | 4,6 | | | | | | | | | |
| Insulation resistance | 3,7 | | | | | | | | | |
| Temperature rising | | 2 | | | | | | | | |
| Durability | | | 4 | | | | | | | |
| Vibration | | | | 3 | | | | | | |
| Mechanical shock | | | | 4 | | | | | | |
| Contact retention force | | | | | 2 | | | | | |
| FPC retention force | | | 3,5 | | | | | | | |
| Solderability | | | | | | 2 | | | | |
| Resistance to reflow Soldering Heat | | | | | | | 2 | | | |
| Thermal Shock | | | | | | | | 3 | | |
| Humidity- temperature cycle | | | | | | | | 5 | | |
| Temperature Life | | | | | | | | | 3 | |
| Resistance to cold | | | | | | | | | 5 | |
| Humidity (steady state) | 5 | | | | | | | | | |
| Salt spray | | | | | | | | | | 3 |
| **No.of test samples** | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |

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

(b) Discontinuities shall not take place in this test group, during tests.

## 2. TEST RESULT

| Group | Test Item | Spec. | Test result | | | | Conclusion |
|---|---|---|---|---|---|---|---|
| | | | Max. | Min. | Avg. | Unit | |
| A | Examination of Product | Meets requirements of product drawing | OK | | | / | Pass |
| | Contact resistance | 50mΩ Max. | 21.75 | 17.36 | 19.76 | mΩ | Pass |
| | Insulation resistance | 250VDC, 500 MΩ MIN. | OK | | | / | Pass |
| | Dielectric withstanding voltage | 250VAC for 1 minute | OK | | | / | Pass |
| | Humidity (steady state) | no physical damage | OK | | | / | Pass |
| | Dielectric withstanding voltage | 250VAC for 1 minute | OK | | | / | Pass |
| | Insulation resistance | 250VDC, 500 MΩ MIN. | OK | | | / | Pass |
| | Contact resistance | 80mΩ Max. (Final) | 22.63 | 17.42 | 20.17 | mΩ | Pass |
| | Examination of Product | No physical damage | OK | | | / | Pass |
| B | Examination of Product | Meets requirements of product drawing | OK | | | / | Pass |
| | Temperature rising | 30 °C MAX. | 4.5 | 3.5 | 4.0 | °C | Pass |
| | Examination of Product | No physical damage | OK | | | / | Pass |
| C | Examination of Product | Meets requirements of product drawing | OK | | | / | Pass |
| | Contact resistance | 50mΩ Max. | 24.12 | 17.28 | 19.99 | mΩ | Pass |
| | FPC retention force | 0.2 N X Pin NO. MIN. | 4.87 | 3.45 | 4.01 | N | Pass |
| | Durability | no physical damage | OK | | | / | Pass |
| | FPC retention force | 0.2 N X Pin NO. MIN. | 2.91 | 2.03 | 2.35 | N | Pass |
| | Contact resistance | 80mΩ Max. (Final) | 24.44 | 17.05 | 20.97 | mΩ | Pass |
| | Examination of Product | No physical damage | OK | | | / | Pass |
| D | Examination of Product | Meets requirements of product drawing | OK | | | / | Pass |
| | Contact resistance | 50mΩ Max. (Initial) | 23.35 | 17.39 | 19.91 | mΩ | Pass |
| | Vibration | No electrical discontinuity greater than 1 µsec shall occur. | OK | | | / | Pass |
| | Mechanical shock | | OK | | | / | Pass |
| | Contact resistance | 80mΩ Max. (Final) | 25.12 | 17.63 | 20.86 | / | Pass |
| | Examination of Product | No physical damage | OK | | | / | Pass |
| E | Examination of Product | Meets requirements of product drawing | OK | | | / | Pass |
| | Contact retention force | 0.20N/Pin MIN. | 0.52 | 0.35 | 0.43 | N | Pass |
| | Examination of Product | No physical damage | OK | | | / | Pass |
| F | Examination of Product | Meets requirements of product drawing | OK | | | / | Pass |
| | Solderability | must have 95% Solder Coverage minimum. | OK | | | / | Pass |
| | Examination of Product | No physical damage | OK | | | / | Pass |
| G | Examination of Product | Meets requirements of product drawing | OK | | | / | Pass |
| | Resistance to reflow Soldering Heat | No physical damage | OK | | | / | Pass |
| | Examination of Product | No physical damage | OK | | | / | Pass |
| H | Examination of Product | Meets requirements of product drawing | OK | | | / | Pass |
| | Contact resistance | 50mΩ Max. (Initial) | 23.12 | 17.45 | 20.02 | mΩ | Pass |
| | Thermal Shock | No physical damage | OK | | | / | Pass |
| | Contact resistance | 80mΩ Max. (Final) | 25.14 | 17.11 | 20.91 | mΩ | Pass |
| | Humidity- temperature cycle | No physical damage | OK | | | / | Pass |
| | Contact resistance | 80mΩ Max. (Final) | 25.42 | 20.12 | 22.31 | mΩ | Pass |
| | Examination of Product | No physical damage | OK | | | / | Pass |
| I | Examination of Product | Meets requirements of product drawing | OK | | | / | Pass |
| | Contact resistance | 50mΩ Max. (Initial) | 23.63 | 17.52 | 20.09 | mΩ | Pass |
| | Temperature Life | No physical damage | OK | | | / | Pass |
| | Contact resistance | 80mΩ Max. (Final) | 23.38 | 18.36 | 20.80 | mΩ | Pass |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Resistance to cold | No physical damage | OK | | | / | Pass |
| | Contact resistance | 80mΩ Max. (Final) | 25.19 | 18.42 | 22.36 | mΩ | Pass |
| | Examination of Product | No physical damage | OK | | | / | Pass |
| J | Examination of Product | Meets requirements of product drawing | OK | | | / | Pass |
| | Contact resistance | 50mΩ Max. (Initial) | 22.42 | 17.38 | 19.83 | mΩ | Pass |
| | Salt spray | No detrimental corrosion allowed in contact area and base metal exposed. | OK | | | / | Pass |
| | Contact resistance | 80mΩ Max. (Final) | 24.15 | 17.36 | 20.33 | mΩ | Pass |
| | Examination of Product | No physical damage | OK | | | / | Pass |

**NOTE:**

1. The test PCB and mated FPC are not the real product from the customer. So LLCR test results are just for the spacemen module.
2. 2328702-6 is as the representative part NO. The other part NO. can refer this reliability test result. Mated FPC ：0.3mm thickness FPC.

**END**