瀚荃股份有限公司
CviLux Corporation

# RELIABILITY TEST REPORT

TESTITEM: 1.ELECTRICAL
2.MECHANICAL
3.ENVIRONMENTAL

SERIES NO.: CI08 SERIES
Header: Cvilux: CI0810P2HR0-NH
Housing/Terminal: Aces: 88301

TEST EQUIPMENT: 1.INSERTION & REMOVAL APPARATUS
2.ELECTRONIC MEASURING APPARATUS
3.ENVIRONMENTAL APPARATUS

DATE OF TESTING: 3/1-14’

TEST DEPART: R&D TESTER: Hank Wang

CONTAINT: ATTACHED

REVIEWED : David APPROVED : Eisley VERIFIED : Hank .

1.ELECTRICAL PERFORMANCE :

| | ITEM | TEST CONDITION | REQUIREMENT | TEST RESULT | |
|---|---|---|---|---|---|
| 1-1 | Rated current and voltage | | 3.0A (AWG#26 ) 200V AC/DC | Sample | 3.0A (AWG#26 ) 200V AC/DC |
| | | | | 1 | Pass |
| | | | | 2 | Pass |
| | | | | 3 | Pass |
| | | | | 4 | Pass |
| | | | | 5 | Pass |
| 1-2 | Contact resistance | Dry circuit of DC 20mV max.,100mA max.,100mA., Wire resistance shell be removed from the measured value | Less than 25 mΩ | Sample | 25 mΩ max |
| | | | | 1 | 7.56 mΩ |
| | | | | 2 | 7.21 mΩ |
| | | | | 3 | 7.78 mΩ |
| | | | | 4 | 7.74 mΩ |
| | | | | 5 | 7.92 mΩ |
| 1-3 | Dielectric strength | When applied AC 500V 1 minute between adjacent terminal | No breakdown | Sample | 500 V 1 minute |
| | | | | 1 | Pass |
| | | | | 2 | Pass |
| | | | | 3 | Pass |
| | | | | 4 | Pass |
| | | | | 5 | Pass |
| 1-4 | Insulation resistance | When applied DC 500 V between adjacent terminal or ground | More than 1000 MΩ | Sample | 1000 MΩ min. |
| | | | | 1 | $25\times10^5$ MΩ |
| | | | | 2 | $30\times10^5$ MΩ |
| | | | | 3 | $25\times10^5$ MΩ |
| | | | | 4 | $25\times10^5$ MΩ |
| | | | | 5 | $30\times10^5$ MΩ |

2. MECHANICAL PERFORMANCE:

| | ITEM | TEST CONDITION | REQUIREMENT | TEST RESULT | | |
|---|---|---|---|---|---|---|
| 2-1 | Mating & Un-mating force (with latch) | Insert and withdraw connector at speed of 25 ± 3 mm per minute | Mating: 3.5 Kgf max Unmating: 0.6 Kgf min | sample | Mating (Max) | Unmating (Min) |
| | | | | 1 | 1.080 | 1.008 |
| | | | | 2 | 1.113 | 0.984 |
| | | | | 3 | 1.098 | 0.961 |
| | | | | 4 | 1.120 | 0.999 |
| | | | | 5 | 1.032 | 1.018 |
| | | | $60^{th}$ Unmating 0.5 Kgf min | sample | Unmating (Min) | |
| | | | | 1 | 0.843 kgf | |
| | | | | 2 | 0.795 kgf | |
| | | | | 3 | 0.842 kgf | |
| | | | | 4 | 0.883 kgf | |
| | | | | 5 | 0.810 kgf | |

| | ITEM | TEST CONDITION | REQUIREMENT | TEST RESULT | |
|---|---|---|---|---|---|
| 2-2 | Pin retention force | Push pin from insulator base at speed 25± 3 mm per minute | More than 0.5 Kgf | Sample | > 0.5 Kgf |
| | | | | 1 | 2.413 kgf |
| | | | | 2 | 2.204 kgf |
| | | | | 3 | 2.247 kgf |
| | | | | 4 | 2.227 kgf |
| | | | | 5 | 2.533 kgf |
| 2-3 | Durability | Connector shall be subjected to 60 cycles of insertion and withdrawal | Contact resistance: To pass Para 1-2 | Sample | 25 mΩ max |
| | | | | 1 | 8.12 mΩ |
| | | | | 2 | 8.08 mΩ |
| | | | | 3 | 8.22 mΩ |
| | | | | 4 | 8.31 mΩ |
| | | | | 5 | 8.05 mΩ |

3.ENVIRONMENTAL PERFORMANCE:

| | ITEM | TEST CONDITION | REQUIREMENT | TEST RESULT | |
|---|---|---|---|---|---|
| 3-1 | Temperature rise | Then carried the rated current | 30 ℃ max. | Sample | 30 ℃ max. |
| 3-2 | Vibration | 1.5 mm 10-55-10 HZ/minute each 2 hours for X, Y and Z directions | Appearance: No damage Discontinuity: 1 micro second max. | Sample | No damage |
| | | | | Sample | 1 micro second max. |
| 3-3 | Shock(Mechanical) | Subject mated connectors to 50G's (peak value) half-sine shock pulses of 11 milliseconds duration. Three shock in each direction shall be applied along the three mutually perpendicular axes of the test specimen (18 shocks). The electrical load condition shall be 100mA maximum for all contacts. | Discontinuity: 1 micro second max. | Sample | PASS |
| 3-4 | Solder ability | Soldering time: 3 ±0.5 sec. Soldering pot: 245 ±5℃ | Minimum: 90% of immersed area | Sample | 90% of immersed area |
| | | | | 1 | Pass |
| | | | | 2 | Pass |
| | | | | 3 | Pass |
| | | | | 4 | Pass |
| | | | | 5 | Pass |
| 3-5 | Resistance to soldering heat | Soldering time: 5 ± 0.5 second Soldering pot: 260 ± 5°C | Appearance: No damage | Sample | No damage |
| | | | | 1 | Pass |
| | | | | 2 | Pass |
| | | | | 3 | Pass |
| | | | | 4 | Pass |
| | | | | 5 | Pass |

| | ITEM | TEST CONDITION | REQUIREMENT | TEST RESULT | |
|---|---|---|---|---|---|
| 3-6 | Hand Soldering Method | Use a soldering iron that has a sufficient head capacity and high stability of temperature. The tip of the iron should be shaped so as not to touch the part body directly. Temperature : 380± 10℃ 3s | Appearance: No damage | Sample | No damage |
| | | | | 1 | Pass |
| | | | | 2 | Pass |
| | | | | 3 | Pass |
| | | | | 4 | Pass |
| | | | | 5 | Pass |
| 3-7 | Heat aging | 85 ±2℃ , 96 hours | Appearance: No damage | Sample | No damage |
| | | | | 1 | Pass |
| | | | | 2 | Pass |
| | | | | 3 | Pass |
| | | | | 4 | Pass |
| | | | | 5 | Pass |
| | | | Contact resistance: To pass para 1-2 | Sample | 25 mΩ max |
| | | | | 1 | 7.94 mΩ |
| | | | | 2 | 7.62 mΩ |
| | | | | 3 | 8.03 mΩ |
| | | | | 4 | 8.14 mΩ |
| | | | | 5 | 8.29 mΩ |
| | | | Dielectric strength: To pass para 1-3 | Sample | Pass para 1-3 |
| | | | | 1 | Pass |
| | | | | 2 | Pass |
| | | | | 3 | Pass |
| | | | | 4 | Pass |
| | | | | 5 | Pass |
| | | | Insulation resistance: To pass Para 1-4 | Sample | 1000 MΩ min. |
| | | | | 1 | $25\times10^5$ MΩ |
| | | | | 2 | $30\times10^5$ MΩ |
| | | | | 3 | $25\times10^5$ MΩ |
| | | | | 4 | $25\times10^5$ MΩ |
| | | | | 5 | $30\times10^5$ MΩ |
| 3-8 | Cold aging | -40 ± 2°C , 96 hours | Appearance: No damage | Sample | No damage |
| | | | | 1 | Pass |
| | | | | 2 | Pass |
| | | | | 3 | Pass |
| | | | | 4 | Pass |
| | | | | 5 | Pass |
| | | | Contact resistance: To pass para 1-2 | Sample | 25 mΩ max |
| | | | | 1 | 8.13 mΩ |
| | | | | 2 | 7.94 mΩ |
| | | | | 3 | 8.05 mΩ |
| | | | | 4 | 8.22 mΩ |
| | | | | 5 | 8.20 mΩ |

| | ITEM | TEST CONDITION | REQUIREMENT | TEST RESULT | |
|---|---|---|---|---|---|
| 3-9 | Humidity | 40 ±3℃, 90-95%RH, 96 hours measurement must be taken within 30 min. after tested | Appearance: No damage | Sample | No damage |
| | | | | 1 | Pass |
| | | | | 2 | Pass |
| | | | | 3 | Pass |
| | | | | 4 | Pass |
| | | | | 5 | Pass |
| | | | Contact resistance: To pass para 1-2 | Sample | 25 mΩ max |
| | | | | 1 | 8.55 mΩ |
| | | | | 2 | 8.72 mΩ |
| | | | | 3 | 8.34 mΩ |
| | | | | 4 | 8.18 mΩ |
| | | | | 5 | 8.52 mΩ |
| | | | Dielectric strength: To pass para 1-3 | Sample | Pass para 1-3 |
| | | | | 1 | Pass |
| | | | | 2 | Pass |
| | | | | 3 | Pass |
| | | | | 4 | Pass |
| | | | | 5 | Pass |
| | | | Insulation resistance: To pass Para 1-4 | Sample | 1000 MΩ min. |
| | | | | 1 | $25\times10^5$ MΩ |
| | | | | 2 | $30\times10^5$ MΩ |
| | | | | 3 | $25\times10^5$ MΩ |
| | | | | 4 | $25\times10^5$ MΩ |
| | | | | 5 | $30\times10^5$ MΩ |

| | ITEM | TEST CONDITION | REQUIREMENT | TEST RESULT | |
|---|---|---|---|---|---|
| 3-10 | Temperature cycling | One cycle consists of:<br>1. -40$^{+0}_{-3}$ ℃, 30 min.<br>2. Room temp. 10-15 min.<br>3.85$^{+3}_{-0}$ ℃, 30 min.<br>4. Room temp. 10-15 min. | Appearance:<br>No damage | Sample | No damage |
| | | | | 1 | Pass |
| | | | | 2 | Pass |
| | | | | 3 | Pass |
| | | | | 4 | Pass |
| | | | | 5 | Pass |
| | | | Contact resistance:<br>To pass para 1-2 | Sample | 25 mΩ max |
| | | | | 1 | 8.26 mΩ |
| | | | | 2 | 8.79 mΩ |
| | | | | 3 | 8.10 mΩ |
| | | | | 4 | 9.01 mΩ |
| | | | | 5 | 8.37 mΩ |
| | | | Dielectric strength:<br>To pass para 1-3 | Sample | Pass para 1-3 |
| | | | | 1 | Pass |
| | | | | 2 | Pass |
| | | | | 3 | Pass |
| | | | | 4 | Pass |
| | | | | 5 | Pass |
| | | | Insulation resistance:<br>To pass Para 1-4 | Sample | 1000 MΩ min. |
| | | | | 1 | $25\times10^5$ MΩ |
| | | | | 2 | $30\times10^5$ MΩ |
| | | | | 3 | $25\times10^5$ MΩ |
| | | | | 4 | $25\times10^5$ MΩ |
| | | | | 5 | $30\times10^5$ MΩ |
| 3-11 | Salt spray | Temperature: 35 ± 3°C<br>Solution: 5 ± 1%<br>Spray time:<br>Gold flash: 8 hours<br>Measurement must be taken after water rinse | Appearance:<br>No damage | Sample | No damage |
| | | | | 1 | Pass |
| | | | | 2 | Pass |
| | | | | 3 | Pass |
| | | | | 4 | Pass |
| | | | | 5 | Pass |
| | | | Contact resistance:<br>To pass para 1-2 | Sample | 25 mΩ max |
| | | | | 1 | 8.99 mΩ |
| | | | | 2 | 9.09 mΩ |
| | | | | 3 | 8.73 mΩ |
| | | | | 4 | 9.14 mΩ |
| | | | | 5 | 9.10 mΩ |

4.AMBIENT TEMPERATURE RANGE：-40 to + 85℃