1. **Scope**

This specification covers the Wire to Board pitch 2.54mm series connectors.

2. **Applicable documents**

The following documents form a part of this specification to the extent specified herewith. In the event of conflict between the requirements of the specification and the product drawing, the product drawing shall take precedence.
In the event of conflict between the requirements of the specification and the referenced documents, this specification shall take precedence.

3. **Ordering information**

Refer to the drawing.

4. **Connector dimensions**

Refer to the drawing.

5. **Material**

Housing: PA66 (UL 94V-0/UL 94V-2)
Color :Refer to the drawing.
Contacts terminal: Copper alloy
Plating:Tin plated

6. **Accommodated P.C.B layout**

Refer to the drawing.

7. **Rating**

| | |
|---|---|
| Operating voltage(Max.) | 250V AC/DC |
| Current rating(Max.) | 2.5A DC |
| Temperature range-operating | -25°C -- +85°C (Including terminal temperature rese) |

8. **Performance**

| Test item | Requirement | Test Condition |
|---|---|---|
| **Electrical Performance** | | |
| Contact Resistance | 20 mΩ (Max.) | Mate connectors, measure by dry circuit, 20mV MAX., 10mA.<br>Mated Length : 50mm (AWG. #22)<br>(Based upon JIS C5402 5.4) |
| Insulation Resistance | 1000 MΩ (Min.) | Mate connectors, apply 500V DC between adjacent terminals or ground.<br>(Based upon JIS C5402 5.2/MIL-STD-202 method 302 Cond.B) |
| Dielectric strength | No breakdown and flashover | Mate connectors, apply 1000V AC for 1 minute between adjacent terminal or ground.<br>(Based upon JIS C5402 5.1/MIL-STD-202 Method 301) |

| Test item | Requirement | Test Condition |
|---|---|---|
| Contact resistance on crimped portion | 20 mΩ (Max.) | Crimp the maximum applicable wire on to the terminal, measure by dry circuit, 20mV MAX., 10mA. Wire Length : 50mm (AWG.#22) |

**Mechanical Performance**

| | | |
|---|---|---|
| Insertion and Withdrawal Force | Refer to paragraph 9 | Insertion and withdrawal connectors at the speed rate of 25±3mm/minute |

| | | | | | | |
|---|---|---|---|---|---|---|
| Crimping pull out Force | Wire size | | #22 | #24 | #26 | #28 | Fix the crimped terminal, apply axial pull out force on the wire at the speed rate of 25±3mm/minute (Based upon JIS C5402 6.22) |
| | 1 | width | 1.50±0.10 | | | | |
| | | height | 0.73~0.75 | 0.71~0.73 | 0.69~0.71 | 0.67~0.69 | |
| | 2 | width | 1.75 | | | | |
| | | height | 1.47 | 1.45 | 1.43 | 1.41 | |
| | Crimp strength | | 4.0kg min. | 3.0kg min. | 2.0kg min. | 1.5kg min. | |
| | 1. Conductor (mm)<br>2: Insulation (mm) | | | | | | |

| | | |
|---|---|---|
| Terminal Insertion Force | 1.5kgf (Max.) | Insert the crimped terminal into the housing at the speed rate of 25±3mm/min. |
| Terminal/Housing Retention Force | 2.0kgf (Min.) | Apply axial pull out force at the speed rate of 25±3 mm/minute on the terminal assembled In the housing. |
| Pin retention force | 1.5kgf (Min.) | Apply axial push force at the speed rate of 25±3 mm/minute on the contact pin assembled in the base wafer. |

**Environmental Performance and others**

| | | | |
|---|---|---|---|
| Repeated insertion/ withdrawal | Contact Resistance | 40 mΩ Max. | Mate connector up to 30 cycles repeatedly at a rate of 10 cycles/minute. After which test the contact resistance |
| Temperature Rise | 30 ℃ Max. | | Apply rated current load on mated connector in series-connection. Measure change of temperature on contact using thermocouples for 4 hours. (Based upon UL 1977) |
| Heat resistance | Appearance | No Damage | Mated connector shall be placed in an oven for 96±4 hours at +85±2°C. (Based upon JIS C5402 7.8) |
| | Contact Resistance | 40 mΩ Max. | |

| Test item | Requirement | | Test Condition |
|---|---|---|---|
| Cold resistance | Appearance | No Damage | Mated connector shall be placed in a temperature chamber for 96±4 hours at -25±3°C<br>(Based upon JIS C5402 7.9) |
| | Contact Resistance | 40 mΩ Max. | |
| Vibration | Appearance | No Damage | Amplitude: 1.52mm P.P<br>Sweep time: 10-55-10Hz/minute<br>Duration: 2 hours in each X、Y、Z axlals.<br>(Based upon MIL-STD-202 method 201) |
| | Contact Resistance | 40 mΩ Max. | |
| | Discontinuity | 1μ sec Max. | |
| Shock | Appearance | No Damage | 50G, 3 strokes in each X、Y、Z. axlals.<br>(Based upon JIS C0041) |
| | Contact Resistance | 40 mΩ Max. | |
| | Discontinuity | 1μ sec Max. | |
| Humidity | Appearance | No Damage | Mated connector shall be placed in a humidity chamber on the following conditions.<br>Temperature: 40±2°C<br>Relative humidity: 90~95%<br>Duration : 240 Hours<br>(Based upon MIL-STD-202 Method 103 cond.A) |
| | Contact Resistance | 40 mΩ Max. | |
| | Withstand voltage | 1000 V AC/min | |
| | Insulation Resistance | 100 MΩ Min. | |
| Temperature Cycling | Appearance | No Damage | Mated connector shall be set to temperature cycling for 5 cycles of which 1 cycle consists of:<br>1>.+25°C ~ 3 minutes<br>2>.-25°C ~ 30 minutes<br>3>.+25°C ~ 3 minutes<br>4>.+85°C ~ 30 minutes<br>(Based upon JIS C5402 7.2) |
| | Contact Resistance | 40mΩ Max. | |
| | Dielectric Strength | 1000V,AC/min | |
| | Insulation Resistance | 100MΩ Min. | |
| Salt Spray | Appearance | No Damage | Mated connector shall be placed in a salt spray chamber on the following conditions.<br>Salt Solution Density : 5±1%<br>Temperature : 35±2°C<br>Duration : 24±4 Hours<br>(Based upon JIS C5402 7.1/MIL-STD-202 Method 101 Condition B) |
| | Contact Resistance | 40 mΩ Max. | |
| Solderability | 95% of immersed area must show no voids nor pin holes. | | Immerse fluxed soldered section of contact pin into a solder bath for 3±0.5sec<br>Temperature: 230±5°C |

| Test item | Requirement | | Test Condition |
|---|---|---|---|
| Resistance to soldering heat | Appearance | No Damage | Mated connector shall be dipped on solder bath for 5 ±1sec<br>Temperature: 260±5°C |

9. **Insertion force and withdrawal force**

(Unit:kgf)

| Circuits | Insertion (Max.) | Withdrawal (Min.) | | |
|---|---|---|---|---|
| | Initial | Initial | 10th | 30th |
| 2 | 1.50 | 0.72 | 0.60 | 0.50 |
| 3 | 1.95 | 0.88 | 0.74 | 0.60 |
| 4 | 2.40 | 1.04 | 0.88 | 0.70 |
| 5 | 2.85 | 1.20 | 1.02 | 0.80 |
| 6 | 3.30 | 1.36 | 1.16 | 0.90 |
| 7 | 3.75 | 1.52 | 1.30 | 1.00 |
| 8 | 4.20 | 1.68 | 1.44 | 1.10 |
| 9 | 4.65 | 1.84 | 1.58 | 1.20 |
| 10 | 5.10 | 2.00 | 1.72 | 1.30 |
| 11 | 5.55 | 2.16 | 1.86 | 1.40 |
| 12 | 6.00 | 2.32 | 2.00 | 1.50 |
| 13 | 6.45 | 2.48 | 2.14 | 1.60 |
| 14 | 6.90 | 2.64 | 2.28 | 1.70 |
| 15 | 7.35 | 2.80 | 2.42 | 1.80 |
| 16 | 7.80 | 2.96 | 2.56 | 1.90 |
| 17 | 8.25 | 3.12 | 2.70 | 2.00 |
| 18 | 8.70 | 3.28 | 2.84 | 2.10 |
| 19 | 9.15 | 3.44 | 2.98 | 2.20 |
| 20 | 9.60 | 3.60 | 3.12 | 2.30 |