# Product specification

## 1. Scope

This specification applies to the Pitch 2mm series connectors, specifying the product's performance indicators, test methods and test requirements.

Applicable Product Models: FAS20005/FAS20006/FAH20004/FAH20006/FAT20002 series.

## 2. Applicable Standards

In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

## 3. Materials

| Component | | Material Specification | Color |
|---|---|---|---|
| Wafer | Housing | PBT (UL94V-0) | White |
| | Contact | Copper Alloy (Tin Plated) | - |
| | Inner Housing | PBT (UL94V-0) | Orange |
| | Inner Seal | Rubber Silicone | Blue |
| Female Housing | Wire Seal | Rubber Silicone | Blue |
| | Housing | LCP (UL94V-0) | White or Black |
| Terminal | | Copper Alloy (Tin Plated) | - |

## 4. Appearance and Dimensions

4.1 Appearance：The product surface shall be free from defects, dirt, cracks and mechanical damage. Contacts shall be free from rust, oxidation or plating peeling.

4.2 Appearance and dimensions shall comply with the requirements of product drawings.

4.3 Exchangeable: Exchangeable with same specification products.

## 5. Parameter Range

| Parameter Name | Value & Unit |
|---|---|
| Rated Current | 3A AC/DC |
| Rated Voltage | 100V AC/DC |
| Operating Temperature Range | -25 ℃ ~+85 ℃ |
| Applicable Wire Gauge | 26AWG~22AWG<br>O.D Ø1.4~Ø1.7mm |

## 6. Test Requirements and Procedures Summary

| Serial No. | Item | Test Method | Technical Requirements |
|---|---|---|---|
| 1 | Examination of Product | Visual inspection | Meet the drawing requirements, No damage or abnormality in visual appearance |
| Electrical Requirement | | | |
| 2 | Dielectric Withstanding Voltage | Mated connectors: apply 1000 V AC between adjacent terminals and between terminals to ground. | No flashover.No insulation breakdown;<br>leakage current ＜ 5 mA. |
| 3 | Contact Resistance | A maximum voltage of 20 mV and a maximum current of 10 mA shall be applied to the mate connector; wire resistance is not included. | Initial ≤10mΩ<br>After tests ≤15mΩ |
| 4 | Insulation Resistance | Apply 500V DC(rms)for 1 minute between adjacent contacts to measure the insulation resistance | Initial ≥800MΩ<br>After tests ≥100MΩ |

| | | | |
|---|---|---|---|
| 5 | Temperature Rise | Mate connectors: Measure the temperature rise at rated current.<br>(Wire to be used AWG #22,Test current: 3A) | △30℃ Max |
| Mechanical Characteristics | | | |
| 6 | Connector Mate and Unmate Forces | Mate and unmate connector (male to female) at a rate of 1 to 5 mm/s. | See Fig. 1 |
| 7 | Crimp Terminal Insertion Force | The load required to insert a crimped receptacle contact and a crimped tab contact into the housings shall be measured.(Testing speed: 1 to 5 mm/s.) | Insertion Force≤10N |
| 8 | Crimp Terminal Retention Force (in Housing) | Axial pullout force on the terminal in the housing at a rate of 1 to 5 mm/s. | Retention Force≥30N |
| 9 | Wire Pullout Force (Axial) (Wire from Terminal) | Apply an axial pullout force on the wire at a rate of 25±6mm per minute. | 22 AWG = 50 N (Min.)<br>24 AWG = 30 N (Min.)<br>26 AWG= 20 N (Min.) |
| 10 | Locking strength | Full mate and then Unmate the connectors at a rate of 25±6 mm per minute | 40 N (Min.) |
| 11 | Durability | Mate connectors up to 30 cycles at a maximum rate of 10 cycles per minute | Contact Resistance≤15mΩ； |
| Environmental Performance | | | |
| 12 | Random Vibration | Mated connectors subjected to vibration conditions: 10~55~10Hz, amplitude 1.52mm, 2h per axis, current applied | Appearance: No damage;<br>Current Discontinuity ≤1μs;<br>Contact Resistance≤15mΩ； |

| | | | |
|---|---|---|---|
| 13 | Thermal Aging | Mate connectors（Tin-Plated）:Expose for 250 hours at 85℃ + 2℃. | Appearance: No damage;<br>Contact Resistance≤15mΩ; |
| 14 | Thermal shock | 1 cycle consists of.<br>-55℃±3℃ for 30 minutes<br>+85℃±2℃ for 30 minutes<br>Total cycles: 25 cycles | Appearance: No damage;<br>Contact resistance≤15mΩ;<br>Insulation resistance≥100MΩ;<br>No flashover, no insulation breakdown; |
| 15 | Humidity Temperature Cycle | Temperature 40℃±2℃, relative humidity 90~95% for 240 h; after the test. | |
| 16 | Cold Resistance | Mate connectors<br>Duration: 250 hours<br>Temperature:-40°C + 3°C | Appearance: No damage;<br>Contact Resistance≤15mΩ; |
| 17 | Salt Spray | Salt concentration: 5%, temperature: 35℃±2℃, test time: 48±2h; after the test, rinse residual salt with clean water, wipe dry before measurement | Contact resistance≤15mΩ; |

| Circuit | At Initial | | At 30th | Circuit | At Initial | | At 30th |
|---|---|---|---|---|---|---|---|
| | Insertion Force (Max) | Withdrawal Force (Max) | | | Insertion Force (Max) | Withdrawal Force (Max) | |
| 2 | 16N | 2N | 2N | 6 | 48N | 6N | 6N |
| 3 | 24N | 3N | 3N | 8 | 64N | 8N | 8N |
| 4 | 32N | 4N | 4N | | | | |

**Fig.1**