Product specification

1. Scope

This specification applies to the Pitch 1.2mm single-row series connectors, specifying the product's performance indicators, test methods and test requirements.

Applicable Product Models: FWF12003/FHG12003/FT12003 series.

2. Applicable Standards

The following documents form a part of this specification. 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.

2.1 GB/T2421 Testing method for Environmental of Electrical Connectors Class1:General Principles

2.2 GB/T2423 Testing method for Environmental of Electrical Connectors

2.3 GB/T2424 Testing method for Environmental of Electrical Connectors

2.4 GB/T5095 Testing procedure/method for components of electric equipment

3. Parameter Range

Parameter Name	Value & Unit
Rated Current	1.5A [AC (rms)/DC] (When using 28 AWG wire)
Rated Voltage	50V [AC（rms）/DC]
Operating Temperature Range	-40 ℃ ~+105 ℃
Applicable Wire Gauge	28 AWG~30 AWG
Applicable PCB Thickness	1.0~1.2mm

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. Materials

Component		Material Specification	Color
Wafer	Housing	LCP (UL94V-0)	Black
	Contact	Copper Alloy (Gold flash)	-
	Solder TAB	Copper Alloy (Tin-Plated)	-
Housing		LCP (UL94V-0)	Black
Terminal		Phosphor bronze(Gold flash)	-

6. Test Requirements and Procedures Summary

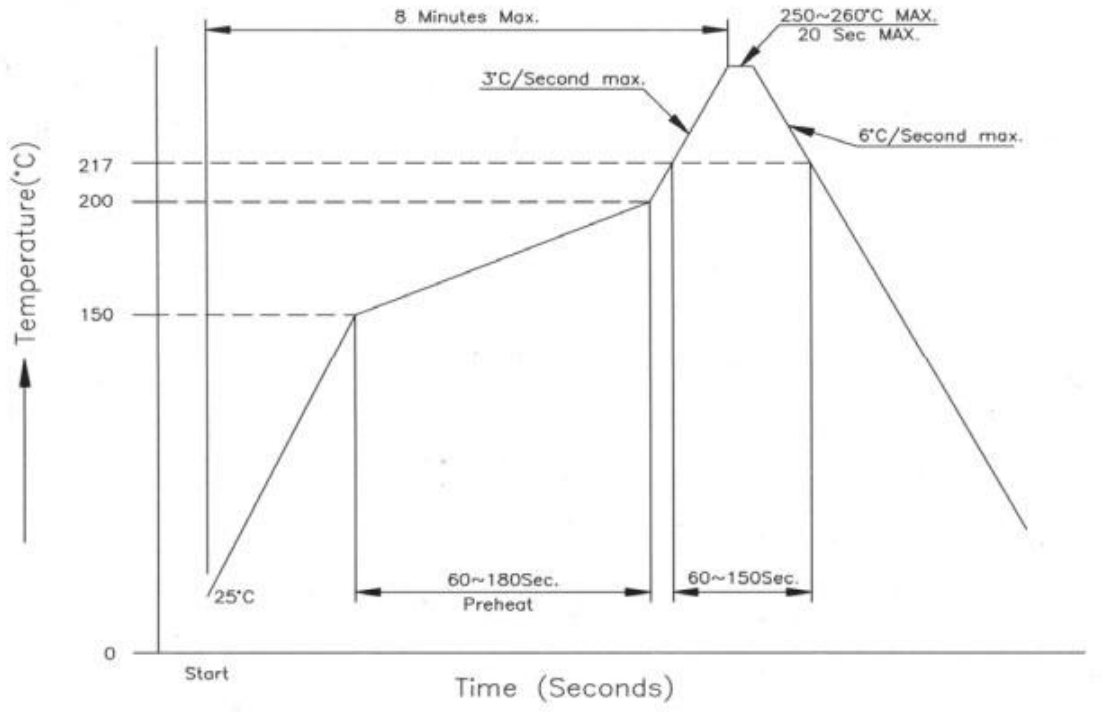
Serial No.	Item	Test Method	Technical Requirements
1	Examination of Product	Visual inspection	Meet the drawing requirements, no damage or abnormality in visual appearance
Electrical Requirement			
2	Dielectric Withstanding Voltage	Apply 500V AC(rms)for I minute and the leakage current shall not exceed 0.5mA to the adjacent terminal and ground of the mate connectors	No flashover or insulation breakdown
3	Contact Resistance	A maximum voltage of 20mV and maximum current of 10mA are applied to the Mate connector ;Does not include wire resistance	Contact Resistance ≤20mΩ
4	Insulation Resistance	Apply 500V DC(rms)for I minute between adjacent contacts to measure the insulation resistance	Insulation Resistance ≥100MΩ

Mechanical Characteristics			
5	Terminal crimping Wire strength	Terminal crimping wire Axial per minute to 25 ± 3mm rate of the pullout force	28AWG: ≥10N; 30AWG: ≥5N;
6	Retention Force for Contact	Axial Insert and withdraw force on the contact in the housing at a rate of 25 mm per minute	Retention Force ≥5N
7	Single contact insertion Force	The housing together with the terminal ends with wafer matched at a rate per minute to25±3mm inserting force test	insertion Force≤14.7N
8	Single contact Withdrawal force	The housing together with the terminal ends with wafer matched at a rate per minute to 25±3mm withdrawal force test	Withdrawal force≥0.6N
9	Retention Force for Pin	Exerts a force on the pin end at a rate per Minute 25±3mm until the needle exit Seat pull-out force	Retention Force ≥0.5N
Environmental Performance			
10	Durability	Mate connectors up 10 cycles at a Maximum rate of 10 cycles per minute prior to environmental test	Contact Resistance≤40mΩ; Insertion Force≤18N; Withdrawal Force(First time≥ 4N ,After 10 cycles≥1.2N)
11	Random Vibration	Mated connectors subjected to vibration conditions: 10~55~10Hz, amplitude 1.5mm, 2h per axis, urrent applied	Appearance: No damage; Current Discontinuity ≤1μs; Contact Resistance≤40mΩ;
12	Thermal Aging	Mate connector exposed to the condition of 105±2℃ for 96 hours.	Appearance: No damage; Contact Resistance≤40mΩ;

13	Temperature	Mate connector measure the temperature rise of contact when the maximum rated current is passed	△30℃ Max
14	Humidity-Temperature Cycle	Temperature (60±2) ℃, relative humidity 90~95% for 96 h; after the test.	Appearance: No damage; contact resistance≤40mΩ; insulation resistance≥100MΩ; No flashover or insulation breakdown;
15	Temperature cycling	One cycle consists of -40±3℃ 30min,room temp 10-15min 105±3℃ 30min,room temp 10-15min Total cycle :5cycle	Appearance: No damage; Contact Resistance≤40mΩ;
16	Salt Spray	Salt concentration: 5%, temperature: (35±2) ℃, test time: (24±2) h; after the test, rinse residual salt with clean water, wipe dry before measurement	Appearance: no damage; contact resistance≤40mΩ;
17	Solder ability	Solder temperature :245±5℃Immersion period:3±0.5S	Area of soldering:≥95%
18	Resistance to Soldering Heat	1.Manual soldering ：(350±5)℃ for (3±0.5) seconds；Soldering time：20 S Max ；Soldering pot：255±5℃；Please refer to the 7.1 solder reflow temperature curve	Appearance: no damage

7.Reflow Temperature Curve

7.1 SMT Lead-Free Process Temperature Curve



Note: The above parameters are for the curve diagram; actual calibration shall be combined with production equipment.