

Product specification

1. Scope

This specification applies to the 0.5mm pitch FPC/FFC series connectors, specifying the product's performance indicators, test methods and test requirements.

Applicable Product Model: FFC05052 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. Parameter Range

Parameter Name	Value & Unit
Rated Voltage	50 V
Rated Current	0.5 A
Operating Temperature	-40℃~+105℃(including terminal temperature rise)

4. Appearance and Dimensions

4.1 Appearance: Product surface without defect、dirt、crack、and mechanical damage, Contacts without rust; plating without oxidation and peeling

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

5. Materials

Component	Material Specification	Color
Housing	LCP (UL94V-0)	Natural
Actuator	LCP (UL94V-0)	Black
Terminal	Copper Alloy (Gold plated on contact area and solder area, nickel under plated overall)	-
Solder Tab	Copper Alloy (Tin-Plated)	-
Terminal Retainer	LCP (UL94V-0)	Natural

6. TEST CONDITION

The test and measurement, unless otherwise specified, shall be carried out at a temperature of 15 to 35°C, Relative humidity of 25 to 85% ,and atmospheric pressure of 86 to 106KPa. However, when any doubt arises on the judgment value under it,the test and measurement shall be carry out at a temperature of 20±2°C, relative humidity of 60 to 70%, and atmospheric pressure of 86 to 106KPa.

7. 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 250V AC voltage between adjacent circuits of the unmated connector for 1 min	No flashover or insulation breakdown
3	Contact Resistance	Mate applicable FPC and measure by dry circuit 20mVMax,10mA	Contact Resistance: 30 mΩ Max
4	Insulation Resistance	Apply 500 V DC voltage between adjacent circuits of the unmate connector for 1 min to test insulation resistance	Insulation Resistance: 100 MΩ Min
Mechanical Characteristics			
5	Terminal/Solder Tab Retention Force	Apply axial pulling force to the terminal/Solder Tab assembled in the housing at a rate of (25.4±3) mm/min	0.1kgf Min

6	FPC/FFC Retention Force	After closing the Actuator and connecting with FFC/FPC, test the FFC/ FPC pulling force at a speed of (25.4±3) mm/min	0.083kgf/PIN Min.
7	Durability	Operation speed: maximum 10 times/min; durability cycle times: 20 times	Contact Resistance: 30 mΩ Max
8	Vibration	Amplitude: 1.52m; Frequency;10~55~10HZ; Vibration time:2 hours for 3 axis total 6 hours.	Appearance: no damage; contact resistance: 30 mΩ Max; power-off time: 1 μs Max
9	Mechanical Shock	The connector is soldered on the printed circuit board; acceleration: 50 G; shock time: 11 ms (half-sine wave) ; cycle times: 3 times for each X, Y, Z axis, total 9 times (JIS C0041/MIL-STD-202 Method 213)	
Environmental Performance			
10	Temperature Rising	Connect the sample to the corresponding FPC, measure the temperature rise of the contact point when passing the maximum rated mating current	Temperature rise: 30 °C Max
11	Solder Ability	Immerse the tip of the solder tail and positioning pin into molten solder at (245±5) °C, immersion depth to 0.1 mm from the bottom of the housing, for (3±0.5) s	Wettability: more than 95% of the immersed area has no voids, pinholes and missing solder
12	Resistance to Reflow Soldering Heat	Preheating: 150~180 °C for (90±30) s; heating: minimum 230 °C for (30±10) s; peak temperature: (260±0/-5) °C, duration ≤10 s; cycle times: 2 times	Appearance: no component deformation affecting performance

13	Thermal Shock	Temperature range: -40~+105 °C; start from -40 °C, keep constant temperature for 30 min, then switch to +105 °C, transition time ≤30 s; total cycle times: 5 times	Appearance: no damage; contact resistance: 30 mΩ Max
14	Humidity-Temperature Cycle	Temperature (40±2) °C, relative humidity 90~95% for 96 h; after the test, place the connector at room temperature for 1~2 h before testing (EIA-364-31A, Method II, Condition A)	Appearance: no damage; contact resistance: 30 mΩ Max; insulation resistance: 100 MΩ Min
15	Temperature Life	The connector is in the mated state and placed at 105 °C for 96 h	Contact resistance: 30 mΩ Max
16	Salt Spray	Salt concentration: 5%, temperature: (35±2) °C, test time: (24±2) h; after the test, rinse residual salt with clean water, wipe dry before measurement (EIA-364-26A Condition A)	Appearance: no damage; contact resistance: 30 mΩ Max