1. Scope

This specification covers the performance, tests and quality requirements for the MCIO Connector

Applicable Product Models:FMC06001 series.

2. Applicable documents

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies. 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. Ordering information

Refer to the drawing.

4. Connector dimensions

Refer to the drawing.

5. Material

Housing：Thermoplastic (UL94V-0)

Terminal: Copper Alloy

Plating:Selective gold plated on contact area and matte tin plated on tails area

Shell：SUS/Nickel Plating

6. Accommodated P.C.B layout

Refer to the drawing.

7. Rating

Operating voltage(Max.):30V AC

Current rating(Max.) :0.5A allowable current to be applied

Temperature range-operating: -55°C -- +85°C

8. Performance

Serial Number	Test item	Procedure	Requirement
1	Examination Of Product	Visual inspection. (EIA-364-18)	Meets requirements of product Drawing. No physical damage.
2	Plating Thickness Measurement	Inspect plating thickness using X-ray evaluation. (EIA-364-48A)	Meet plating requirements defined in customer drawing

ELECTRICAL REQUIREMENT

3	Contact Resistance	Subject mated contacts assembled housing to 20 mV maximum 100 mA .Measured from plug side to PCB side. (EIA-364-23)	20 mΩ MAX (Initial) 50 mΩ MAX (Final)
4	Insulation Resistance	Mated connectors with 500±10% VDC between adjacent contacts or ground. (EIA-364-21)	Minimum initial resistance: 1000 MΩ
5	Dielectric withstanding Voltage	Apply an AC voltage of 300 VAC between the assembled isolated terminals and grounded parts for one minute. (EIA-364-20)	No Breakdown

MECHANICAL REQUIREMENT

6	Solder ability	After subjecting the unplugged connector to steam aging for 8 hours ±15 minutes, the pins are immersed in a solder pot at a temperature of 255°C ±5°C for a duration of 5 ±0.5 seconds. The immersion speed is 25.4 mm/s, and the flux used is ROL0. (JESD22-B-102)	Solderable area shall have a minimum of 95% solder coverage

7	Mechanical Shock	Paired samples are subjected to a 50 Gs half-sine pulse with a duration of 11 milliseconds. The test applies 3 impacts per direction along each of the three mutually perpendicular axes (X, Y, Z), totaling 18 impacts.	Low-power contact impedance: ΔR ≤ 20 mΩ Transient disconnections during testing must be ≤ 1 μs.
8	Mating and Un-mating Force	Mating connectors at maximum rate 25.4millimeters/minute and measure the Insertion and Extraction force . (EIA -364-13)	Insertion Force: 1.1 N per PIN pair + Maximum 10 N. Withdrawal Force: Minimum 0.1 N per PIN pair.
9	Durability	Insertion/Removal Speed: 10 cycles per minute. Total Cycles: 250。 (EIA-364-09)	Appearance: Nodamage Contact Resistance：20 mΩ MAX
10	Vibration	Energy spectral density set to 0.02 g^2/Hz and acceleration to 3.1 g. Each axis (X, Y, Z) is tested for 15 minutes. (EIA-364-28)	Low-power contact impedance: ΔR ≤ 20 mΩ, and transient disconnections during testing must be ≤ 1 μs.
11	Manual Swing Test	Connect the cable to the connector. Manually pull it to a 45° angle and hold in the extended position. Rotate uniformly at a steady speed in clockwise and counterclockwise directions for 10 cycles each. Pause midway for 30 seconds during	Appearance: Nodamage

		direction changes.	Transient interruption < 1 μs

ENVIRONMENT PERFORMANCE AND OTHERS

12	Thermal Shock Test	Samples are tested in the card-inserted state and undergo 5 cycles, with each cycle consisting of the following steps: -55℃ +0/-3℃, Hold for 30 minutes；+25℃±10℃, Hold for 5 minutes； +85℃ +3/-0℃， Hold for 30 minutes； +25℃±10℃， Hold for 5 minutes； （EIA-364-32)	Appearance: Nodamage
			Contact Resistance：20 mΩ MAX
13	Temperature-Humidity Cycling Test	Samples in the card-inserted state are subjected to a cycling test with the following conditions for 10 cycles: Phase 1: 24 hours at 25°C ±3°C and 90–98% RH Phase 2: 24 hours at 65°C ±3°C and 80–98% RH. (EIA-364-31)	Meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification Test Sequence
14	Temperature life	Samples in the card-inserted state are exposed to 105°C ± 3°C for 120 hours. After removal, they are placed in ambient temperature and humidity conditions for 1–2 hours, followed by contact impedance testing. (EIA-364-17)	Meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification Test Sequence

15	Salt Spray	Mate The sample connectors shall expose to the following salt mist conditions. Upon completion of the exposure period, salt deposits shall be removed by a gentle wash or dip in running water, after which the specified NaCl solution Concentration:5+1% Spray time:48hours Ambient temperature:35±2°C (EIA-364-26,Test condition B)	Meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification Test Sequence
16	Temperature Rising	Mate The sample connectors and measure the temperature rise of contact when the maximum AC rated current is passed. (EIA-364-70 METHOD 2)	30°C Max. Under loaded rating current

Figure 1

NOTE: (a): The test result does not include the resistance of cable and internal resistance of contact wire,

(b): Do not perform "IR reflow soldering test" for wave soldering product.