1. Scope

This specification covers the performance, tests and quality requirements for the HM Back plane connector

Applicable Product Models:FBM200XX 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.

6. Rating

Operating voltage(Max.):500V AC

Current rating(Max.) :1.0A allowable current to be applied

Temperature range-operating: -55°C -- +125°C

7. Performance

Serial Number	Test item	Procedure	Requirement
1	Examination Of Product	Visual inspection. (IEC-60512)	Meets requirements of product Drawing. No physical damage.
2	Plating Thickness Measurement	Inspect plating thickness using X-ray evaluation. (IEC-60512)	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. (IEC-60512-2-2A)	20 mΩ MAX (Initial)
4	Insulation Resistance	With the connector assembled, apply a DC test voltage of 500 V, maintain for 60 s±5 s, then measure the insulation resistance between adjacent pins and between pins and the housing. (IEC-60512-2-3A)	Minimum initial resistance: 10000 MΩ
5	Dielectric withstanding Voltage	With the connector assembled, increase the AC test voltage (750 V r.m.s.) at a rate not exceeding 500 V/s up to the specified test voltage, maintain for 60 s±5 s. Apply voltage between pin- to- pin and pin- to- housing. No breakdown, flash- over or arcing shall occur. (IEC-60512-2-4A)	No Breakdown

MECHANICAL REQUIREMENT

6	Vibration test	mated connectors shall be tested in accordance with IEC 60512- 4, Test 6d. Frequency range: 10–500 Hz, amplitude 0.35 mm or acceleration 50 m/s². Number of sweeps: 10 sweeps per axis, duration 2 h for each axial direction. (IEC-60512-4)	Duration of contact failure shall not exceed 1 μs.
			Contact resistance after test: Max. 30 mΩ.
			Appearance: Nodamage
7	Shock test	Mated connectors shall be tested in accordance with IEC 60512- 4, Test 6c. Acceleration: 490 m/s², half- sine wave, pulse duration 11 ms. 5 shocks per direction for XY, YZ and XZ planes. (IEC-60512-4)	Duration of contact failure shall not exceed 1 μs.
			Contact resistance after test: Max. 30 mΩ.
			Appearance: Nodamage
8	Mating and Un-mating Force	nsert and withdraw the mated connector along the engagement axis at the specified constant rate, measure the maximum engaging force and maximum separating force. No side load shall be applied during test. Record force values, which shall comply with requirements of detail specification. (IEC-60512-7-13A)	Contact- to- contact: Engaging force: n × 0.75 N (max); Separating force: 0.15 N/pin (min)
			Contact (ground bar)- to- shield housing: Engaging force: n × 1 N (max); Separating force: 0.15 N/pin (min)

9	Durability	Specified 250 engage- disengage cycles without electrical load, no side load. Operation speed: 10 mm/s MAX, dwell 30 s at unmated state. Post- test visual inspection and contact resistance measurement shall comply with detail specification. (IEC-60512-5)	Appearance: Nodamage Contact Resistance: 30 m Ω MAX
10	Terminal Retention Force (In Housing)	Apply specified axial pull force ≥10 N to each contact at a rate of 20 mm/min. No contact shall be pulled out or exhibit excessive axial displacement. (IEC-60512-8)	Pull- out direction: ≥10 N

ENVIRONMENT PERFORMANCE AND OTHERS

11	Humidity	At a temperature of 40±2℃ and relative humidity of 90% - 95% for 24 hours. Then, be left alone for 1 to 2 hours in a room ambient and test in the time. (IEC-60512-11)	Meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification Test Sequence
12	Cold resistance	Put it in an environment with a temperature of -55±2 ℃ for 24 hours, then take it out and place it in normal humidity and room temperature for 1 to 2 hours and then test the contact impedance. (IEC-60512-11)	Meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification Test Sequence

13	Heat Resistance	Mated connectors and expose to 125±2℃ for 24 hours, Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. (IEC-60512-6)	Meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification Test Sequence
14	Rapid-change-of-temperature	Test condition: −55 ℃~+125 ℃, dwell time 30 min at each extreme temperature, transfer time ≤3 min, total 5 cycles. Sample under mated condition. After test, recover for 2 h under ambient condition, then perform visual inspection and contact resistance measurement. All results shall comply with detail specification. (IEC-60512-6)	Meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification Test Sequence
15	Salt Spray	Salt Mist Concentration: 5%±2; pH Value: 6.5~7.2; Spray Rate: 1.0~2.0 (ml/80 cm²/h); Relative Humidity (RH): ≥85%; Test Duration: 48 hours. (ASTM B117)	Appearance: Nodamage Contact Resistance: 30mΩ Max.