

1. Scope

This specification covers the performance, tests and quality requirements for the Battery swappin connector

Applicable Product Models:FBS002 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:Gold Plating

6. Rating

Operating voltage(Max.):72V AC

Current rating(Max.) :45A allowable current to be applied

Temperature range-operating: -15°C -- +105°C

7. Performance

Serial Number	Test item	Procedure	Requirement
1	Examination Of Product	Visual inspection. (EIA-364-18)	Meets requirements of product Drawing. No physical damage.

ELECTRICAL REQUIREMENT

2	Contact Resistance	A. After mating, probe directly across both ends of power pins. B. After mating, probe directly across both ends of signal pins. (EIA-364-23)	5 mΩ Max(Power Pins) 10 mΩ Max(Signal Pins)
3	Insulation Resistance	After male and female mating, place probes directly on the solder cups of two adjacent power pins or two adjacent signal pins. (EIA-364-21)	Minimum initial resistance: 100 MΩ
4	Dielectric withstanding Voltage	Power Pins: Mated connectors with 2500±5% V AC for 1minute 2mA between adjacent contacts or ground. Signal Pins: Mated connectors with 1000±5% V AC for 1minute 2mA between adjacent contacts or ground. (EIA-364-20)	No Breakdown

MECHANICAL REQUIREMENT

5	Mating and Un-mating Force	Perform male-female mating and unmating at a rate of 10 cycles/min, and measure the insertion & extraction force every 500 cycles. (EIA -364-13)	3~12 kgf
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6	Durability	Operation Speed: 10 cycle/min. Durability Cycles: 5000 Cycles. (EIA-364-09)	Appearance: Nodamage
			Contact Resistance: 10 m Ω MAX
7	Air Tightness Test	Use an air tightness tester. Place the product into the fixture, power on the instrument and reset it first. Confirm the input pressure is 10–12 kPa, then activate the test with the two-hand button. The total test cycle lasts 20 s: 3 s for pressure filling, 5 s for pressure holding, 11 s for pressure decay judgment, and 1 s for pressure release.	Sample leakage value shall be less than 50 Pa to meet IP68 waterproof standard.

ENVIRONMENT PERFORMANCE AND OTHERS

8	Temperature Rise	Test conditions: DC 60 V, 45 A, temperature rise < 45 K. Mate two male and female connectors, connect wires ≥ 4 mm ² to power pins, then energize for 2 hours for testing.	1.Temperature rise < 45 K, complying with product requirements. 2.No electric spark occurs during the test. 3.No blackening or burning discoloration on pins.
9	Cold resistance	Put it in an environment with a temperature of -15 ± 2 °C for 48hours, then take it out and place it in normal humidity and room temperature for 1 to 2 hours and then test the contact impedance	Meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification Test Sequence

10	High Temperature Aging	Place the product in an oven and bake at 130 °C for 1 h. Inspect the product for cracks or fractures.	Contact impedance: Power pins < 10 mΩ; Signal pins < 30 mΩ.
11	Salt Spray	Tested as below: Temperature: (35±2)°C Humidity:(85±2)%(R.H.) PH: 6.5-7.2 Duration:72H;It shall be subjected to standard atmospheric condition 1 hour after removing the salt deposits. It should meet the contact resistance. Object non-contact area: Temperature:(35±2)°C Salt-solution (5±1)% . (EIA-364-26B)	Meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification Test Sequence