Product specification

1. Scope

This Specification applies to USB 3.1 Series Type-C Connectors, and specifies the product's performance indicators, test methods and test requirements.

Applicable Product Model: FUS6 series Male plug with PCB.

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	MIL-STD-1344A	Test method for electrical connector
2.2	MIL-STD-202F	Test method for electrical components
2.3	EIA 364	Test method for electrical components
2.4	JIS C 0051	Test method for electrical components
2.5	MIL-G-45204C	Specification for gold plating
2.6	IEC-512-3	EC standard for current carrying capacity tests
2.7	QQ-N-290A	Specification for nickel plating
2.8	MIL-P-81728A	Specification for tin/lead plating
2.9	MIL-T-10727B	Specification for tin plating
2.10	UL498	UL standard for safety of attachment plug and receptacle
2.11	EN/ISO5961	Determination of total lead & cadmium content
2.12	EN1122	Determination of total lead & cadmium content
2.13	EN13346	Determination of heavy metals content
2.14	EPA3052	Determination of total lead & cadmium content

3. Parameter Range

See drawing for details.

4. Materials

See drawing for details.

5. Appearance and Dimensions

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

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

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	Insulation Resistance	Test between adjacent circuits Insulation Resistance of unmated and mated connectors. (EIA 364-21)	Insulation Resistance: 100 MΩ Min
3	Low level Contact resistance	The low level contact resistance measurement is made from the solder tail of the receptacle to the soldering point of the plug.when measured at 20mV Max. open circuit at 100mA. Mated test contacts must be in a connector housing. (EIA 364-23B)	1.40 mΩ (Max) initial for VBUS, GND and all other contacts. 2.Maximum change (delta) of +10 mΩ after environmental stresses.
4	Dielectric Strength	when 100 Volts AC (RMS) is applied between adjacent contacts of unmated and mated connectors.	No breakdown shall occur.
5	Contact current rating	1. A current of 5.0 A shall be applied collectively to VBUS pins (pins A4, A9, B4, and B9) 2.1.25 A applied to the VCONN pin (B5 of the plug connector) with the return path through the corresponding GND pins (pins A1, A12, B1, and B12). 3. A minimum current of 0.25 A shall also be applied individually to all the other contacts. (EIA -364-70 method B)	When the currents are applied to the contacts, the temperature rise shall not exceed 30 °C at any point on the USB Type-C mated plug and receptacle under test, when measured at an ambient temperature of 25 °C.
Mechanical Performance			

6	Insertion Force	Measure the force required to mate connector, At a maximum rate of 12.5mm(0.492") per minute. (EIA 364-13)	The initial connector insertion force shall be within the range from 5 N to 20 N。
7	Extraction Force	Measure the force required to mate connector, At a maximum rate of 12.5mm(0.492") per minute. (EIA 364-13)	The initial connector Extraction force shall be within the range from 8N to 20 N。
8	Durability or Insertion/extraction Cycles	The durability test shall be done at a maximum rate of 200 cycles per Hour and no physical damage to any part of the connector and cable assembly shall occur. (EIA 364-09)	The durability rating shall be 10000 cycles .
9	Physical Shock	No discontinuities of 1μs or Longer duration. when mated USB C type connectors are subjected to 11ms duration 30Gs half-sine shock pluses. Three shocks in each direction applied along three mutually perpendicular planes for a total of 18 shocks. (EIA 364-27 Test Condition H)	No breakdown shall occur.
Environmental Performance			
10	Humidity	Temperature: 25~65℃, Relative humidity: 90-95%, Duration: 96Hours. (EIA 364-31)	Appearance: no damage; contact resistance: 40 mΩ Max; insulation resistance:100 MΩ Min,Withstand Voltage ≥100V
11	Thermal shock	Temperature range from -55°C to +85°C .Start from -55°C. After 30 min. change to +85°C, change time is no more than 30 seconds. Total 5 cycles. (EIA 364-32)	

12	Salt Spray	Subject mated connectors to 35+/-2 ℃and 5+/-1% salt condition for48 hours. After test, rinse the sample with water and recondition the room temperature for 1 hour. (EIA-364-26B.)	Shall meet visual requirements, No detrimental corrosion allowed in contact area and base metal exposed.