

Products pecification

1. Scope

This productspecification defines the mechanical, electrical and environmental performance requirements and test methods for USB TYPE C connectors.

Applicable Product Models:FUS6201 series.

2. Product Description

Design and Construction Construction and physical dimensionsshall be specified on the applicable sales drawing.

3. Materials and Plating

- A. Housing : LCP (UL 94V-0),Black;
- B. Contacts : Copper Alloy/ Gold Plated on contact and Tin Plated on tail;
- C. Shell : Stainless steel/ Nickel Plated.

4. Applicable P.C.B. Layout

Refer to the drawing

5. Rating

- A.Voltage Rating: 5V AC/DC
- B.Current Rating: 5A AC/DC
- C.Operating temperaturure:-40°C ~ +85°C

6 Product Specifications

The connectors covered in this productspecifications are designed to meet the electrical, mechanical and environmental performance requirements as listed in Table Test procedures are indicated in each of the performance requirements.

7. Performance

Test Item	Requirement	Test Condition
Appearance of product	Meets requirements of Product drawing, NO Breakdown	Visual inspection.

Electrical Performance

Low Level Contact Resistance(LLCR)	40m Ω (Max)	Subject mated contacts assembled in housing to 20mV Max open circuit at 100mA Max. [EIA-364-23B]
Dielectric withstanding voltage	No creeping discharge norflash over Shall occur.	500V AC for 1 minute test between adjacent circuits of unmated and mated connectors. [EIA-364-20]
Insulation resistance	A minimum of 1000M Ω insulation resistance	100V DC Test between adjacent contacts of unmated and mated connectors. [EIA 364-21]

Mechanical Performance

Insertion Force	5N to 20N	Operation Speed:[12.5] mm/min Measure the force required to mate connector. [EIA-364-13]
Extraction Force	8N to 20N form 10000cycles 6N to 20N after 10000cycles	Operation Speed:[12.5] mm/min Measure the force required to unmate connector. [EIA-364-13] Within the range of 8N to 20N ,measured after a preconditioning of five insertion/extraction cycles(i.e., the sixth extraction).After an additional twenty-five insertion/extraction cycles, The extraction force shall be measured again(i.e., thirty-second extraction) and the extraction force shall be within: (a) 33% ofthe initial reading (b) within the range of 8N to 20N, The extraction force shall be within the range of 6N to 20N after10000 insertion/extraction cycles.
Durability	Appearance: No Solder Creack Contact Resistance: 50 mΩ Max Insulation Resistance:100M ΩMin Dielectric withstanding Voltage: No Breakdown Insertion Force: 5N~20N Extraction Force:6N~20N	Perform 2,468 plug/unplug cycles. Rotate the receptacle or plug 180° and perform 2,500 plug/unplug cycles. Rotate the receptacle or plug 180° and perform 2,500 plug/unplug cycles. Rotate the receptacle or plug 180° and perform 2,500 plug/unplug cycles. Cycle rate of 500 ± 50 cycles per hour (total of 10,000 plug/unplug cycles, flipping every 2,500 cycles).
Vibration	Appearance: No damage Discontinuity: 1 microsecond Max	Subject mated connectorsto 10-55-10HZ traversed in 1 minute at 1.52mm amplitude 15 minutes each of 3 mutually perpendicular planes. [EIA-364-28 Condition VII, Testletter D]
Mechanical Shock	Appearance: No Damage Discontinuity:1 μs Max	Acceleration: 50G; Sustainmenttime: 11ms; 3 times for each test in each direction [EIA 364-27]

Environmental & Other Performance

Heat Resistance	Appearance: No Damage Contact Resistance: 50 mΩMax Insulation Resistance:100M ΩMin Dielectric withstanding Voltage: No Breakdown	Temperature: 105 °C±2 °C Duration: 96h(Aftertest return to ambienttemp for 1~2H)
Cold Resistance	Appearance: No Damage Contact Resistance: 50 mΩMax Insulation Resistance:100M ΩMin Dielectric withstanding Voltage :No Breakdown	Temperature: -40 °C±2 °C Duration: 96h(Aftertest return to ambienttemp for 1~2H)
Thermal shock	Appearance: No Damage Contact Resistance:50 mΩ Max Insulation Resistance:100M ΩMin Dielectric withstanding Voltage: No Breakdown	Mated Connectors -55±3°C(30 Min), 85±2°C(30 min) Perform repeat 10 cycles [EIA-364-32]

Cyclic temperature and humidity	Appearance: No Damage Contact Resistance: 50 mΩ Max Insulation Resistance: 100M Ω Min Dielectric withstanding Voltage: No Breakdown	Temperature: 55℃; Relative Humidity: 85%; Duration: 96Hr (After test return to ambient temp for 1~2H) [EIA-364-31]
Solder Ability	The inspected area of each lead must have 95% solder coverage minimum	Solder pot temperature: 245℃±5℃, 5sec
Salt spray	There shall be no exposure of base metal of contact which is detrimental To contacting. Contact Resistance: 50m Ω max	Temperature: 35℃ Salt water density: 5% Duration: 24Hr (shell, Terminal contact area) ; 8Hr (Terminal solder pad) (After Test wash a connector, Return to Ambient temp for 1~2H)
Resistance to Reflow Soldering Heat	No physical damage shall occur (lead-free)	Pre Heat: 150~180℃, 90±30 Sec. Heat: 230℃ Min., 30±10 Sec. Peak Temp: 260+0/-5℃, 10 sec. Test spec: 109-201, Condition B, Fig 5)

8. Test Sequence

Test Item	Test Group									
	1	2	3	4	5	6	7	8	9	10
1. Appearance	1,8	1,4	1,4	1,4	1,4	1,4	1,4	1,3	1,4	1,3
2. Low level contact resistance	2,9	2,5	2,5	2,5	2,5	2,5	2,5		2,5	
3. Insulation Resistance	3,10									
4. Dielectric Withstanding Voltage	4,11									
5. Insertion Force	5,12									
6. Extraction Force	6,13									
7. Durability	7									
8. Vibration		3								
9. Mechanical Shock			3							
10. Heat Resistance				3						
11. Cold Resistance					3					
12. Thermal Shock						3				
13. Humidity							3			
11. Solder Ability								2		
12. Salt Spray									3	
13. Reflow										2