1. **Scope**

USB3.1 Type C series

This specification covers the performance, tests and quality requirements for the Type C plug and socket connector.

2. **Ordering information**

Refer to the drawing.

3. **Connector dimensions**

Refer to the drawing.

4. **Material**

Housing: Thermoplastic (UL 94V-0)

Color: Black

Terminal: Copper alloy

Plating: Gold plated

Shell: Stainless steel

Plating: Nickel plated

5. **Accommodated P.C.B layout**

Refer to the drawing.

6. **Rating**

Operating voltage(Max.)	30V DC/AC (RMS. Max)
Current rating(Max.)	5 Amps Max for total Vbus pins (Pin A9,B9,A12,B12); GND pin 1.25 Amps Max; 0.25 Amps Min. for all other contact.
Temperature range-operating	-30°C -- +85°C

7. **Performance**

Test item	Requirement	Procedure
Electrical Performance		
Contact Resistance	50mΩ Max for shield (initial) 40mΩ Max for other (initial) 10mΩ Max change for post test	Subject mated contacts assembled in housing to 20mV Max open circuit at 100mA Max. (EIA-364-23B)
Insulation Resistance	Initial:1,000 MΩ Min. Final(post test) 100 MΩ Min.	Test voltage 100±10V DC between adjacent contacts of mated and unmated connector assemblies interval of shield case and contacts too in the same way. (EIA-364-21C)
Dielectric Strength	No flashover& spark over & excess leakage & breakdown	Test voltage 100V AC between adjacent contacts of mated and unmated connector assemblies for one minute. Interval of shield case and contacts too, in the same way. (EIA-364-20B)
Mechanical Performance		
Insertion Force	0.5~2.0kgf.	Measure force necessary to mate connector assemblies at maximum rate of 30cycles/Min. (EIA-364-13)
Withdrawal Force	0.8~2.0kgf.	Measure force necessary to mate connector assemblies at maximum rate of 30cycles/Min. (EIA-364-13)

Test item	Requirement		Procedure
Durability	Insertion force: 0.5~2Kgf Withdrawal force: 0.8~2Kgf Contact resistance: 10mΩ max change for post test Appearance: No breakdown		Mate and unmated connector assemblies for 10,000 cycles at. Cycle rate of 500 cycles per hour if done (EIA-364-09)
Environmental Performance and others			
Shock	Contact resistance	10mΩ Max. Change for post test	Mated connector -55±3°C(30minutes), +85±2°C(30minutes) Perform this 1 cycle, repeat 10 cycles (EIA-364-32C condition 1)
Humidity	Appearance	No Damage	Mated connector 25~65°C, 90~95% RH, 1 cycle:24 hours, 4cycles (EIA-364-31B)
	Contact Resistance	10mΩ Max. change for post test	
	Dielectric Strength	No Breakdown	
	Insulation Resistance	100MΩ Min.	
Temperature Cycling	Appearance	No Damage	Mated connector to 105±2°C for 120 hours upon completion of the exposure period, test 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. (EIA-364-17B)
	Contact Resistance	10mΩ Max. change for post test	
	Dielectric Strength	No Breakdown	
	Insulation Resistance	100MΩ Min.	
Salt Spray	Appearance	No Damage	Subject mated connectors to 35±2°C and 5±1% salt condition for 24 hours. After test, rinse the sample with water and recondition the room temperature for 1 hour. (EIA-364-26B)
	Contact Resistance	10mΩ Max. change for post test	
Solderability	Solder tails shall pass 95% Min coverage		Solder temperature:265±5°C Duration:15±0.5sec. (EIA-364-52)
Resistance to Soldering Heat	No physical damage shall occur		Pre heat:150~180°C,90±30sec. Heat:230°C Min. , 35±5sec Peak temp.: 265°C Max. Duration:2 cycles

8. **Test sequence**

Test Item	Test Group							
	A	B	C	D	E	F	G	H
Appearance	1,8	1,9	1,9	1,9	1,9	1,5	1,3	1,3
Low level contact resistance	2,5	2,8	2,6	2,6	2,6	2,4		
Dielectric withstanding voltage	4,7		4,8	4,8	4,8			
Insulation resistance	3,6		3,7	3,7	3,7			
Insertion force		3,6						
Withdrawal force		4,7						
Durability		5						
Solder ability							2	
Resistance to soldering heat								2
Thermal shock				5				
Humidity			5					
Temperature cycling					5			
Salt spray						3		