1.0 DESCRIPTION

1.1 SCOPE

The specification contains data about mechanical, electrical and climatic parameters from a USB A to C type cable.

1.2 AREA OF APPLICATION

This product use for the standard cable of charging and data transmission.

2.0 TECHNICAL DATA

2.1 General Characteristics

General Characteristics	VALUE
USB-C TYPE	USB 2.0 C type plug
USB-A TYPE	USB 2.0 Standard A type plug
CABLE LENGTH	0.5m/1.0 m/1.27m

2.2 Materials and Plating

Materials and Plating	Value
USB A Conn housing	PBT
USB A Conn terminal	Brass, contact area: G/F
USB A Conn shell	SPCC, Nickel plating
TYPE-C Conn housing	High temperature plastic
TYPE-C Conn terminal	Copper, contact area: G/F,80U"MIN
TYPE-C Conn shell	Steel, Nickel 50u'' min
TYPE-C Conn PCB	RF4
Raw cable	No UL 30AWG*1P+24AWG*2C+AL OD3.5MM TPE

2.3 Climatic Characteristics

Climatic Characteristics	Value
Operating temperature	5℃~40℃

2.4 Electrical Characteristics

2.4.1 Wire

Electrical Characteristics	Standard	Value
Wire resistance		VBUS / GND≤95mΩ/M
Impedance(AC)		95±13.5Ω

2.4.2 Connector

Electrical Characteristics	Standard	Value
USB-A plug resistance	EIA 364-23B	30 mΩ maximum when measured at 20 mV maximum open circuit at 100 mA.
Type-C plug resistance	EIA 364-23B	40 mΩ maximum when measured at 20 mV maximum open circuit at 100 mA.
USB-A plug insulation resistance	EIA 364-21	100 MΩ minimum.
Type-C plug insulation resistance	EIA 364-21	100 MΩ minimum.
USB-A dielectric withstand voltage	EIA 364-20	Not exceeding 0.5mA, under a test voltage of 500VAC for a 1-minute duration at sea level
Type-C dielectric withstand voltage	EIA 364-20	Not exceeding 0.5mA, under a test voltage of 100VAC(RMS) for a 1-minute duration at sea level

2.4.3 Cable assembly

Electrical Characteristics	Standard	Value
Cable assembly electrical test	1. 100% open, short & intermitance test 2. insulation resistance: 10MΩ Min. 3. Hi-port: DC 300V/10ms	Electrical test OK
Cable assembly voltage drop	1.5A rated VBUS current of the cable assembly shall be used. The measurement includes representative receptacles at both ends of the cable assembly,mounted on test fixtures. Figure2.4.3 illustrates what parameters contribute to the IR drop and where it shall be measured.	250 mV max for GND and 500 mV max for VBUS.

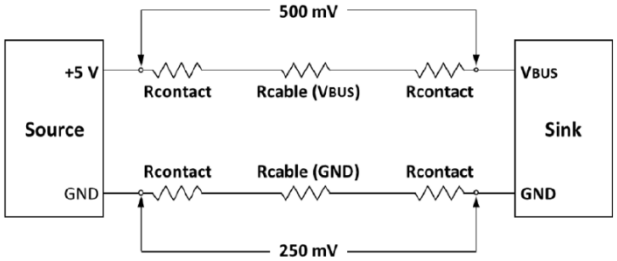

Figure 2.4.3

2.5 Mechanical Characteristics

Mechanical Characteristics	Standard	Value
Durability for USB-A plug	EIA 364-09 The object of this test procedure is to detail a uniform test method for determining the effects caused by subjecting a USB connector to the conditioning action of insertion and extraction, simulating the expected life of the connectors. Durability cycling with a gauge is intended only to produce mechanical stress. Durability performed with mating components is intended to produce both mechanical and wear stress.	1,5000 insertion/extraction cycles at a maximum rate of 200 cycles per hour. Contact resistance not exceed 10mΩ
Durability 1 for USB Type-C plug	EIA 364-09 Perform 4 unplug/plug cycles, followed by an unplug.	No evidence of physical damage.
LLCR	EIA-364-23B. Subject mated contacts assembled in housing to 20mV Max open circuit at 100mA Max.	40 mΩ Max(Initial) for VBUS,GND
Insertion Force 1 for USB Type-C plug	EIA 364-13 Perform the measurement at a maximum speed of 12.5 mm (0.492”) per minute.	Within the range of 5 N to 20 N.
Extraction Force 1 for USB Type-C plug	EIA 364-13 Perform the measurement at a maximum speed of 12.5mm (0.492") per minute.	Within the range of 8 N to 20 N. Initial reading
Durability 2 for USB Type-C plug	EIA 364-09 Perform 2,468 plug/unplug cycles. Rotate the receptacle or plug 180^0 and perform 2,500 plug/unplug cycles. Rotate the receptacle or plug 180^0 and perform 2,500 plug/unplug cycles. Rotate the receptacle or plug 180^0 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).	No evidence of physical damage
Insertion Force 2 for USB Type-C plug	EIA 364-13 Perform the measurement at a maximum speed of 12.5 mm (0.492”) per minute.	Within the range of 5 N to 20 N.
Extraction force 2 for USB Type-C plug	EIA 364-13 Perform the measurement at a maximum speed of 12.5mm (0.492") per minute	8 N to 20 N.
LLCR	EIA-364-23B. Subject mated contacts assembled in housing to 20mV Max open circuit at 100mA Max.	50 mΩ Max for VBUS,GND

2.6 Environment Characteristics

Environment Characteristics	Standard	Value
Humidity Life test	Connector 25～65℃,90～95% RH , 1 Cycle:24 hours,7 Cycles	No damage
Environment Characteristics	**Standard**	**Value**
Type A Salt Spray Test	EIA-364-26B.Subject mated connectors to 35+/-2 ℃ and 5+/-1% salt condition for 24hours. After test, rinse the sample with water and recondition the room temperature for 1 hour.	Any corrosion must less than 5% of the exposed metal surface.
Type C Salt Spray Test	EIA-364-26B.Subject mated connectors to 35+/-2 ℃ and 5+/-1% salt condition for 48hours. After test, rinse the sample with water and recondition the room temperature for 1 hour.	Any corrosion must less than 5% of the exposed metal surface.

REV	PAGES	DESCRIPTION	EC #	DATE
1	4	Initial Release		11/05/20