


NUMBER GS-12-1263	TYPE PRODUCT SPECIFICATION		
TITLE USB 3.0 Micro Connector Family		PAGE 1 of 5	REVISION A
		AUTHORIZED BY Kenny Tai	DATE 2015-02-09
		CLASSIFICATION UNRESTRICTED	

1. Scope

This specification covers the requirements for product performance, test methods and quality assurance provisions of USB 3.0 Micro connector family.

2. Reference 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.

EIA-364: The Test Sequence and Test Procedures for Electrical Connectors and Sockets.

UL Std-94: Test for Flammability of Plastic material for Parts in Devices and Appliances.

USB (Universal Series Bus) 3.0 Specification

3. Design and Construction

Product shall be of the design, construction and physical dimensions specified in the applicable product drawing.

4. Ratings


A. Voltage: 30Vrms

B. Current: 1.8A for VBUS contact & corresponding GND contact (pin 1 & 5 of USB 3.0 Micro connector family); 0.25A for all of other contacts

C. Operating Temperature: -30~+70°C

5. Examination of Product

Item	Property	Test Condition	Performance
5-1	Examination of Product	EIA 364-18 Shall be confirmed with eyes in accordance with each drawing. Shall be confirmed by using proper measuring instruments.	1. Outward appearance shall be good without such injurious problem 2. Structure shall be meet the design and dimensional requirements of drawing.


NUMBER GS-12-1263	TYPE PRODUCT SPECIFICATION		
USB 3.0 Micro Connector Family		PAGE 2 of 5	REVISION A
		AUTHORIZED BY Kenny Tai	DATE 2015-02-09
CLASSIFICATION UNRESTRICTED			

6. Electrical Characteristics

Item	Property	Test Condition	Performance
6-1	Low Level Contact Resistance	EIA 364-23 Mated plugs, measure by dry circuit, 20mV DC maximum, open circuit 100mA maximum. Except wire conductor resistance.	30 mΩ max.
6-2	Insulation Resistance	EIA 364-21 Mated plugs, apply 100V DC for 1 minute between adjacent terminal or ground.	1000 MΩ minimum
6-3	Dielectric Withstanding Voltage	EIA 364-20 Mated plugs, apply 100V AC (rms) at 60Hz for 1 minute between adjacent terminal or ground.	No breakdown.


7. Mechanical Characteristics

Item	Property	Test Condition	Performance
7-1	Durability	EIA 364-09 Mated / un-mated up to 10,000 cycles repeatedly at maximum rate of 500 cycles per hour. (When manually operated, mating speed should be below 200 cycles per hour.)	1. LLCR: delta R = 10 mΩ max. 2. Mating force: 35N max. 3. Unmating force: 8N min. 4. Appearance: No breakdown.
7-2	Mating and Unmating force (initial)	EIA 364-13 Mating / un-mating at a rate of 12.5mm per minute.	1. Mating force: 35N max. 2. Unmating force: 10N min.

NUMBER GS-12-1263	TYPE PRODUCT SPECIFICATION		
TITLE USB 3.0 Micro Connector Family		PAGE 3 of 5	REVISION A
		AUTHORIZED BY Kenny Tai	DATE 2015-02-09
CLASSIFICATION UNRESTRICTED			

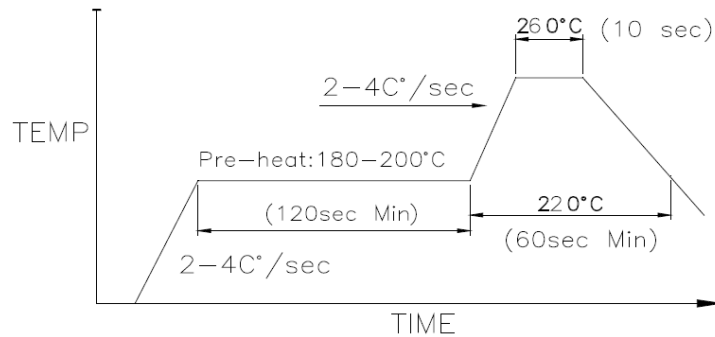
8. Environment Characteristics

Item	Description	Test Condition	Requirement
8-1	Thermal Shock	EIA 364-32, Test Condition I, (or MIL-202F, Method 107G Condition A.) Subject mated connectors to ten cycles between -25°C to +70°C. The object of this test is to determine the resistance of a USB connector to exposure at extremes of high and low temperatures and to the shock of alternate exposures to these extremes, simulating the worst case conditions for storage, transportation and application.	1. Shall meet visual requirement, show no physical damage. 2. Shall meet requirements of additional tests as specified in TEST SEQUENCE in Section 5
8-2	Humidity	EIA 364-31, Method III Test Condition A Subject mated connectors should be tested according to the condition listed below: Temperature: 25 ~ 65°C Humidity: 90 ~ 95% (R.H) Duration: 96 hours (7 complete cycles)	1. Shall meet visual requirement, show no physical damage. 2. Shall meet requirements of additional tests as specified in TEST SEQUENCE in Section 5
8-3	Salt Spray	MIL-STD-202F, Method 101D, Test Condition B Subject mated connectors to 24 hours at 35°C with 5%-Salt-solution concentration.	1. Shall meet visual requirement, show no physical damage. 2. Shall meet requirements of additional tests as specified in TEST SEQUENCE in Section 5
8-4	Temperature Life	EIA 364-17 Test Condition 3 Method A, Subject mated connectors to temperature life at 70°C for 96 hours	1. Shall meet visual requirement, show no physical damage. 2. Shall meet requirements of additional tests as specified in TEST SEQUENCE in Section 5
8-5	Solderability	EIA 364-52 After one hour steam aging. The object of test procedure is to detail a uniform test methods for determining USB connector solderability. The test procedure contained here utilizes the solder dip technique. It is not intended to test or evaluate solder cup, solder eyelet, other hand-soldered type or SMT type terminations.	The surface of the portion to be soldered shall at least 95% covered with new solder coating, as specified in Category 2.


NUMBER GS-12-1263	TYPE PRODUCT SPECIFICATION		
TITLE USB 3.0 Micro Connector Family		PAGE 4 of 5	REVISION A
		AUTHORIZED BY Kenny Tai	DATE 2015-02-09
CLASSIFICATION UNRESTRICTED			

8-6	Resistance to Soldering Heat	<p>1. Wave Soldering: MIL-STD-202F, Method 210A, Test Condition B. Pre-heat: 80°C, 60 Seconds, Temperature: 260 ± 5 °C Immersion duration: 5 ± 1 sec.</p> <p>2. Manual Soldering: MIL-STD-202F, Method 210A, Test Condition A. Pre-heat: No; Temperature: 350 ± 10°C Immersion duration: 3.5 ± 0.5 sec.</p> <p>3. Reflow Soldering: EIAJ RCX-0101/102. Pre-heat: 150 (min.)~200 (max.)°C, 60 ~180 sec. Temperature: 260 ± 5°C; Immersion duration: 10~40 sec.</p>	No mechanical defect on housing or other parts.
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9. Recommended Reflow Profile



Reflow Profile

NUMBER GS-12-1263	TYPE PRODUCT SPECIFICATION		
TITLE USB 3.0 Micro Connector Family		PAGE 5 of 5	REVISION A
		AUTHORIZED BY Kenny Tai	DATE 2015-02-09
		CLASSIFICATION UNRESTRICTED	

REVISION RECORD

<u>Rev</u>	<u>Page</u>	<u>Description</u>	<u>EC#</u>	<u>Date</u>
A	ALL	NEW RELEASE		2015-02-09