

ENGINEERING DEPT	PRODUCT SPECIFICATION	SPECNo: GS-BF-EN-039
	FOR Micro USB Series CONNECTOR	REV:3 Page 1 of 5

1.0 SCOPE

This Product Specification covers the MINI/Micro USB Series connector.

2.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See sales drawings and other sections of this specification for the relevant reference documents.
In cases where the specification differs from the drawings, the drawings take precedence.

3.0 DESIGN AND CONSTRUCTION

Product shall be conformed the design, Construction and physical dimensions shown as the product drawing.

4.0 MATERIALS

Part	Material	Finish	Remark
Housing	High Temperature Thermoplastic	None	UL 94 V-0
Contacts	Copper alloy	Gold Plating over nickel	-----
Shell	Stainless steel or Copper alloy	Plating Tin or Nickel	-----
Other Part	See the part drawing	See the part drawing	-----

5.0 RATINGS

Current Rating	1.8A for Pin 1&5, 0.5A for pin 2&3,4
Voltage Rating	30V/AC (Rms)
Operating temperature	-40°C ~ +80°C
Storage temperature	0°C ~ +75°C

APPROVED BY: Haiyong luo **CHECKED BY:** Max **VERIFIED:** Cecil Zhou

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6. ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITIN	REQUIREMENT
6.1	Low Level Contact Resistance	Mate connectors with dry circuit(20mV,100mA Max) Spec: EIA-364-23B	Initial: 30mΩ max. Final: ΔR=10mΩ max.
6.2	Insulation Resistance	Supply 500V DC at sea level between adjacent contacts mated. Spec: EIA-364-21C	Shall be greater than 1000 MΩ.
6.3	Dielectric strength	Supply 250V AC for 1 minute at sea level between adjacent contacts mated. Spec: EIA-364-20	No breakdown or flashover.

7.MECHANICAL REQUIREMENT

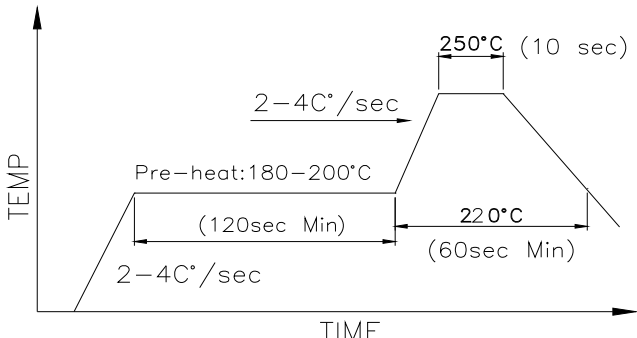
ITEM	DESCRIPTION	TEST CONDITIN	REQUIREMENT
7.1	Mating Force	Operation Speed: 12.5mm per minute. Measure the force required to insertion the mated connectors. Spec: EIA-364-13	35N(3.57Kgf) Max.
7.2	Un-mating Force	Operation Speed: 12.5mm per minute. Measure the force required to withdraw the mated connectors. Spec: EIA-364-13	8 N(0.82Kgf) Min.
7.3	Durability	Mating and un-mating specimens for 10000 cycles at rate of 500 cycles per hour if done automatically or 200 cycles if done manually. Spec: EIA-364-09	Initial: 30mΩ max. Final: ΔR=10mΩ max. No damage.
7.4	Peel Strength	Pull the soldered connector in the vertical direction (up, down). All the soldered pad must no damage when 100N.	100N Min. No pad damage
7.5	Wrenching Strength	Perpendicular force test: This test shall be performed using virgin parts. Perpendicular forces are applied to a plug when inserted at a distance of 12mm from the edge of the receptacle. These forces ars to four direction (left ,right, up, down).	0~20N: No receptacle or plug damage

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8. ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITIN	REQUIREMENT
8.1	Cold Resistance	Solder connectors on PCB ,expose to $-40\pm 3^{\circ}\text{C}$ for 48 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 of 2 hours, after which the specified measurements shall be performed.	No physical damage LLCR:30mΩ Max Insulation Resistance: 100MΩ Min
8.2	Thermal Shock	Samples shall be placed in the test chamber with the test condition for 10 cycles: Between -55°C and 85°C with 60 minutes each cycle. 1 cycle: $-55\pm 3^{\circ}\text{C}$ for 30 minutes; $+85\pm 3^{\circ}\text{C}$ for 30 minutes. Spec: EIA 364-32	No physical damage. The samples shall pass the requirements of specific electrical test item.
8.3	Humidity Life	The connectors shall be mated and exposed to the condition of $40\pm 2^{\circ}\text{C}$ with 90~95% Humidity for 168 hour; Recovery time 1~2 hours Spec: EIA-364-31 AIII	No physical damage. The samples shall pass the requirements of specific electrical test item.
8.4	Temperature Life (Heat Aging)	Subject mated specimens to $85\pm 2^{\circ}\text{C}$ without applied voltage for 500 hours. The test specimens shall be conditioned at ambient room conditions for 1 of 2 hours. Spec: EIA-364-17 4A.	No physical damage. The samples shall pass the requirements of specific electrical test item.

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ITEM	DESCRIPTION	TEST CONDITIN	REQUIREMENT
8.5	Salt Spray	Mated connector expose to 48 hours at 35±2°c and density 5% in weight. After the test, specimens shall be washed with running water and dried naturally. Spec: EIA-364-26B	Initial LLCR: 30mΩ Max.; Final LLCR: ΔR 10mΩ (Max.); Gold-plated Appearance: No corrosion
8.6	Solder ability	Immersed the contact of connector into the molten-Tin oven as below condition: Temperature of Tin Oven: 260+/-5°C; Time: 5+/-1 seconds. Spec: EIA 364-52	The contact solder tails shall pass 95% coverage.
8.7	Resistance to soldering heat	Leave the connector in the reflow oven follow below condition.  Spec: EIA 364-56C	There shall be no damage to the samples, such as looseness for Parts or deformation of insulator.
8.8	Mechanical shock	Mated specimens are subjected to 11 ms duration 30 Gs half-sine shock pulses. Three shocks per positive and negative directions for 18 shocks. Spec: EIA-364-27 H	No electrical discontinuity greater than 1 microsecond. No physical damage.
8.9	Random Vibration	Mated specimens are subjected to 5.35 GRMS. 15 minutes in each of three mutually perpendicular planes. Spec: EIA364-28 VA	No electrical discontinuity greater than 1 microsecond. No physical damage.

