

ENGINEERING DEPT.		PRODUCT SPECIFICATION For Mini USB Receptacle Connector	SPEC.NO.: SPCU005G
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1. SCOPE:

This specification covers performance, tests and quality requirements for Universal Serial Bus (USB) plug and receptacle connectors. These connectors are cable mounted plug and PC Board mounted receptacle connectors

2. APPLICABLE STANDARDS:

EIA - 364 Test methods for electrical connectors
MIL - STD - 202 Methods for test of connectors for electronic equipment

3. APPLICABLE SERIES NO.: CU04

4. SHAPE, CONSTRUCTION AND DIMENSIONS

See attached drawings

5. MATERIALS

See attached drawings

6. ACCOMMODATED P.C.BOARD

6.1 Thickness: 1.6 mm (.063")
6.2 P.C. Board Layout: See attached drawings



REVIEWED : Eisley APPROVED : Sun VERIFIED : Eric .



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7. ELECTRICAL PERFORMANCE:

	ITEM	TEST CONDITION	REQUIREMENT
7.1	Rated current and voltage		1A 30V AC (r.m.s.)
7.2	Contact resistance	EIA 364 - 23 Subject mated contacts assembled in housing to 20 mV max. open circuit at 100 mA max.	50 mΩ max.
7.3	Dielectric strength	EIA 364 - 20 Test between adjacent contacts of mated and unmated connector assemblies	100 VAC at sea level
7.4	Insulation resistance	EIA 364 - 21 Test between adjacent contacts of mated and unmated connector assemblies	100 MΩ min.
7.5	Capacitance	EIA 364 - 30 Test between adjacent circuits of unmated connectors at 1 KHz	2 pF max.

8. MECHANICAL PERFORMANCE:

	ITEM	TEST CONDITION	REQUIREMENT	
8.1	Contact retain force in insulator	Retention speed 25± 3 mm per minute from insulator	Plug: 0.5 Kgf min. Receptacle: 0.3 Kgf min.	
8.2	Mating force	EIA 364 - 13 Measure force necessary to mate corresponding connector assemblies at maximum rate of 12.5 mm per minute	3.57 Kgf (35N) max.	
8.3	Unmating force	EIA 364 - 13 Measure force necessary to unmate corresponding connector assemblies at maximum rate of 12.5 mm per minute	0.30 Kgf (3N) min.	
8.4	Durability	EIA 364 - 09 Mate and unmate up to 5000 cycles repeatedly at maximum rate of 200 cycles per hour.	Mating Force	1~5000 Cycles 35N (3.57kgf) maximum
			Un-Mating Force	1~5000 Cycle 3N(0.30kgf) minimum



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9. ENVIRONMENTAL PERFORMANCE:

	ITEM	TEST CONDITION	REQUIREMENT	
9.1	Vibration	EIA 364 - 28 Mate connectors and subject to the following vibration conditions (refer to 6 clause), for a period of 15 minutes in each of 3 mutually perpendicular axes, passing DC 100mA during the test.	Appearance	No Damage
			Contact Resistance	50 milliohms maximum
			Discontinuity	1.0 microsecond maximum
9.2	Shock	EIA 364 - 27 Mate connectors and subject to the following shock conditions. 3 shocks shall be applied along 3 mutually perpendicular axes, passing DC 100mA current during the test.(Total of 18 shocks) Test pulse: Half Sine Peak value: 294m/s(30G) Duration: 11ms	Appearance	No damage
			Contact Resistance	50 milliohms maximum
			Discontinuity	1.0 microsecond maximum
9.3	Solder ability	Tin-Lead Process Soldering time: 5 ± 0.5 second Soldering pot: 230 ± 5 °C Lead-Free Process Soldering time: 3 ± 0.5 second Soldering pot: 245 ± 5 °C	Minimum: 90% of immersed area	
9.4	Resistance to soldering heat	Tin-Lead Process Refer Reflow temperature profile(11.1) Lead-Free Process Refer Reflow temperature profile(11.2)	No damage	

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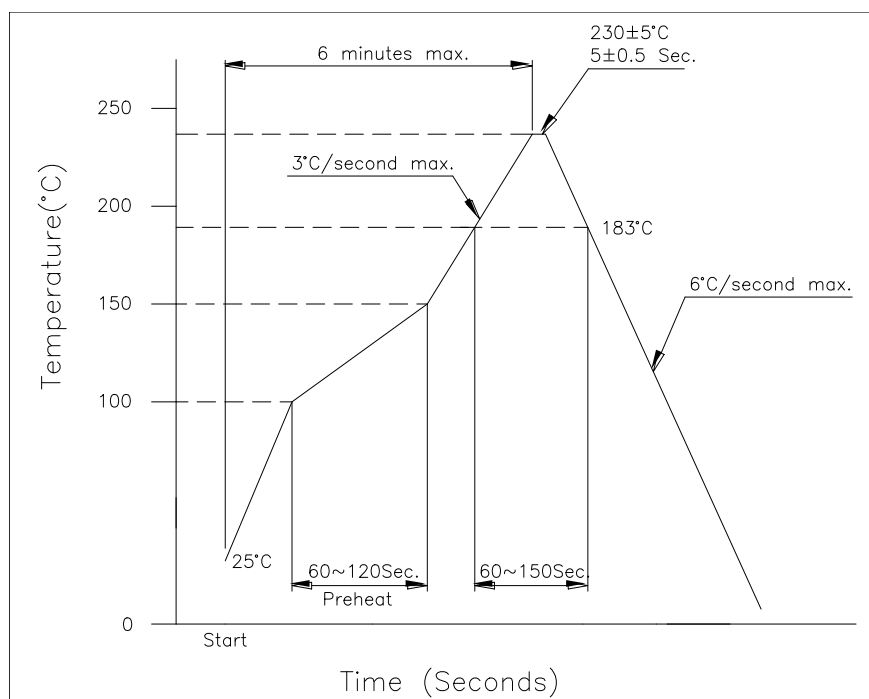
	ITEM	TEST CONDITION	REQUIREMENT	
9.5	Salt spray	Temperature: $35 \pm 3^{\circ}\text{C}$ Solution: $5 \pm 1\%$ Spray time: 48 ± 4 hours (Stamping before plated) Spray time: 24 ± 4 hours (Stamping after plated) Mate connectors and expose to the following salt mist conditions. Upon completion of the exposure period, salt deposits shall be removed by a gentle wash or dip in running water and dried naturally, after which the specified measurements shall be performed. The specimens shall be suspended from the top using waxed twine, string or nylon thread. The test only define the plating area, without plating area (as copper cross section) will not be defined. EIA 364-26B / MIL-STD-202 Method 101)	Appearance: No damage on function Contact resistance: Less than twice of initial	
9.6	Humidity	EIA 364 - 31 Method III Mate connectors and expose to humidity in 7 cycles at 7 clause. Upon completion of the 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.	Appearance	No Damage
			Contact Resistance	50 milliohms maximum
			Dielectric Strength	Must meet 7-3
			Insulation Resistance	Must meet 7-4

10. AMBIENT TEMPERATURE RANGE: -40°C to 60°C storage; 0°C to 40°C operating

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11. Recommended IR Reflow Temperature Profile:

11.1 Using Typical Solder Paste



11.2 Using Lead-Free Solder Paste

