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1. SCOPE

This specification covers performance, methods and quality requirements for Mini Universal Serial Bus(USB)type plug and receptacle connectors. These connectors are cable mounted plug and printed circuit board mounted receptacle connectors.

2. REQUIREMENTS

2.1 Ratings

A.Voltage: 30V/AC(rms max)

B.Current: 1.0A per contact, not to exceed 30℃ temperature rise

C.Operating temperature: 0℃ to+50℃

D.Storage temperature: -20℃ to+65℃

E.Nominal Temperature Rating: +20℃

2.2 Test Requirements and Procedures Summary

Item	Test Description	Test Requirement	Test Procedure
2.2.1	Critical dimension	8 total measurement within tolerance	EIA 364-18
2.2.2	Low level contact resistance	50mΩ Subject mated contacts assembled in hc housing to 20m maximum open circuit at 100mA maximum.	EIA 364-23
2.2.3	Insulation resistance	100MΩ minimum	EIA 364-21 Test voltage 100±10V/DC between adjacent contacts of mated and unmated connector assemblies.
2.2.4	Dielectric withstanding voltage	No flashover&sparkover&excess leakage&breakdown	EIA 364-20 Test voltage 100V/AC between adjacent contacts of mated and unmated connector assemblies.
2.2.5	Vibration, random	No discontinuities of 1 μs or Longer duration. See Note .	EIA364-28A-83 Condition III Test Letter A. Subject mated connectors to 5.35 G's rms. 15 minutes in each of three mutually perpendicular planes.
2.2.6	Physical shock	No discontinuities of 1 μs or Longer duration. See Note.	EIA 364-27 Condition H. Subject mated connectors to 30 Gs half-sine shock' pulses of 11 ms duration. Three shocks in each direction applied along three mutually perpendicular planes, 18 total shocks.
2.2.7	Durability	1500cycles insertion/extaction at a maximum rate of 200cycles per hour.	EIA 364-09

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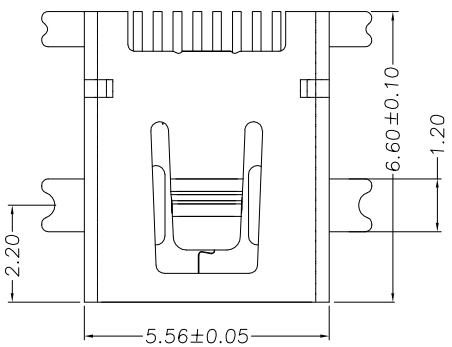
Item	Test Description	Test Requirement	Test Procedure	
2.2.8	Solderability	Mini USB contact solder tails sha pass 95% coverage after one hour steam aging as specified in category 2.	EIA364-52	
2.2.9	Cable pull-out	Applied a load of 40 Newtons for one minute.	EIA364-38 Test condition A	
2.2.10	Mating force	35Newtons maximum	EIA 364-13 Measure force necessary to mate connector Assemblies at maximumrate of 12.5 mm/mi	
2.2.11	Unmating force	7 Newtons minimum initial; 3 Newtons minimum after 1500 cycles mating and unmating.	EIA 364-13 Measure force necessary to unmate connector assemblies at maximum rate of 12.5 mm/min.	
2.2.12	Thermal shock	10Cycles -55℃ and+85℃, The USB connectors under test must be mated.	EIA 364-32 Test Condition I.	
2.2.13	Humidity life	168 Hours minimum (seven complete cycles).	The Mini USB 4P connectors under test be tested in accordance must EIA364 -31 Condition A. method III.	
2.2.14	Temperature life	See Note	EIA364-17A-87 Condition 2 Method A. Subject mated connectors to temperature Life 85℃ for 250 hours	
2.2.15	Mixed flowing gas	See Note	EIA364-65-92 Class II, Exposures (1)Unmated for 1 day (2)Mated for 10 day	
2.2.16	Flammability	Require its thermoplastic resin vendor to supply a detailed C of C with each resin shipment.The C of C shall clearly show the resin's UL listing number, lot number,date code,etc.	UL94 v-0	
2.2.17	Contact capacitance	2 pF maximum unmated per contact.	EIA 364-30 The object of this test is to detail a standard method to determine the capacitance between conductive elements of a Mini USB connector.	
2.2.18	Contact current rating	1.0A at 250V/AC minimum when measured at an ambient temperature of 25℃, with power applied to the contacts, the temperature change shall not exceed +30℃ at any point in the Mini USB connector under test.	EIA364-70---method B The object of this test procedure is to detail a standard method to assess the current carrying capacity of mated Mini USB connector contacts.	

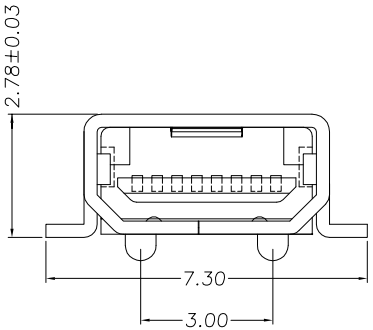
Item	Test Description	Test Requirement		Test Procedure
2.2.19	Differential impedance	90± 15%Ω (76.5～103.5Ω)		Connect the Time Domain Reflectometer (TDR).TDR is setup the differential mode.
2.2.20	Common mode impedance	30±30%Ω (21～39Ω)		Connect the Time Domain Reflectometer (TDR).TDR is setup the differential mode.
2.2.21	Propagation delay	18ns (maximum for Low speed cable)		Connect the Time Domain Reflectometer (TDR).TDR is setup the differential mode.
2.2.22	Propagation delay skew	400ps/cable (maximum for Low speed cable)		Connect the Time Domain Reflectometer (TDR).TDR is setup the differential mode.
2.2.23	Signal pair attenuation (Maximum)	0.064MHz	0.08dB/Cable	1.Connect the network analyzer output port(port) to the input connector on the attenuation test fixture(note). 2.Connect the series"A"plug of the cable to be tested to the test fixture, leaving the other end open-circuited. 3.Calibrate the network analyzer and fixture using the appropriate calibration standards over the desired frequency range.
		0.256MHz	0.11dB/Cable	
		0.512MHz	0.13dB/Cable	
		0.772MHz	0.15dB/Cable	
		1.000MHz	0.20dB/Cable	
		4.000MHz	0.39dB/Cable	
		8.000MHz	0.57dB/Cable	
		12.00MHz	0.67dB/Cable	
		24.00MHz	0.95dB/Cable	
		48.00MHz	1.35dB/Cable	
		96.00MHz	1.90dB/Cable	
Note: Shall meet visval requirement, show no physical damage, and shall meet requirement				

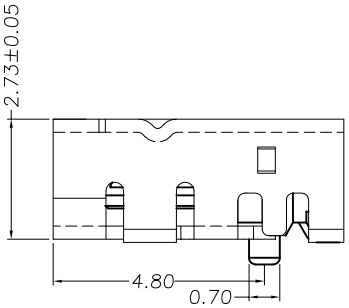
2.3 Product Qualification Test Sequence

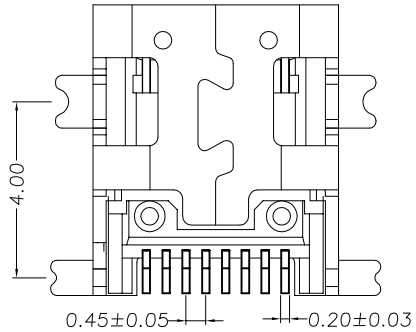
Test or Measurement Item		Test Group(a)		
		I	II	III
		Test Sequence(b)		
Examination		1,10	1,5	1,9
Low level contact resistance		3,7	2,4	
Capacitance				2
Insulation resistance				3,7
DWV				4,8
Vibration		5		
Physical shock		6		
Durability		4		
Mating force		2		
Unmating force		8		
Temperature life			3	
Thermal shock				5
Humidity life				6
Cable pull-out		9		
Number of Samples	Plugs	9pcs	9pcs	9pcs
	Sockets	9pcs	9pcs	9pcs

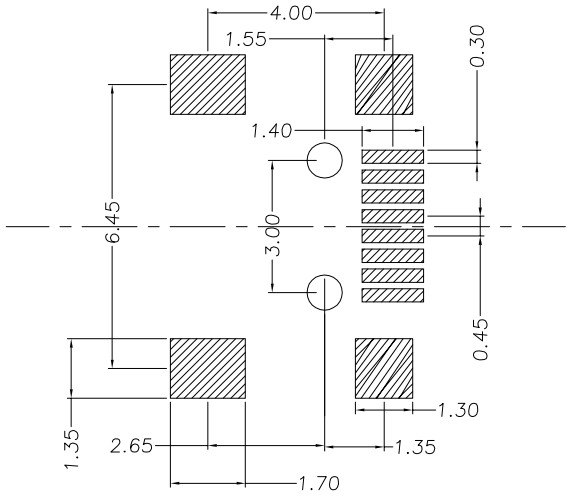
Note: The high frequency performance shall be measure especially with network analyzer and TDR.For example impedance,attenuation,propagation delay and skew etc.parameters.











特性:Specifications:

电器:Electrical:

接触阻抗:Contact Resistance
50 milliohms MAX

耐电压:Dielectric Withstanding Voltage:
100 V AC AT Sea LevoL

绝缘阻抗:Insulation Resistance:
100 MEGA ohms MIN

材料:Matorial:

塑胶:Housing:Hing Temperature Thermoplastics,
UL 94V-0 耐高温塑胶

端子:Contact: Copper Alloy 铜合金

铁壳:Shell: Copper Alloy 铜合金

电镀:Finish:

端子:Contact: Piated Gold in Mating Area;
Tin On Solder Talls
接触点镀金.脚镀锡

铁壳:Shell:
Nickel/ Plating 镀镍

Ordering Informating

X - 5 - XX — Contact plating
01-3u"Gold/ Tin
02-5u"Gold/ Tin
03-15u"Gold/ Tin
04-30u"Gold/Tin

X — Plastic Color
A=Black

成品图

品 名	MINI USB 8P 四脚 SMT 母座 (MOLDING双边倒角)	材 质	青 铜	单位	MM
图 号	A016-1D	图纸编号		比例	1:1
制 图		审 核		日期	2006.05.27

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