CHINVAY

APPROVAL SHEET

CUSTOMER :

ITME : 10PIN MINI USB 连接器

MODEL : MUC-AB10D5

DATE : 08/08/2007

APPROVED BY:

深 圳 市 创 宇 伟 业 科 技 有 限 公 司

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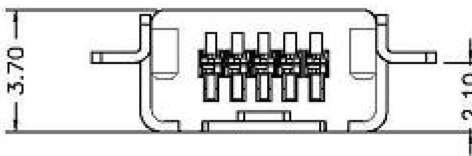
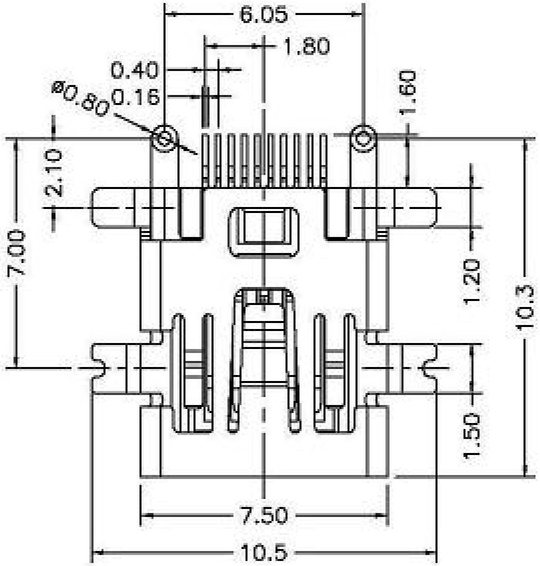
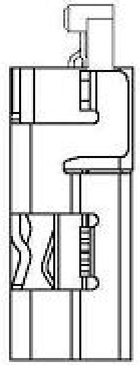
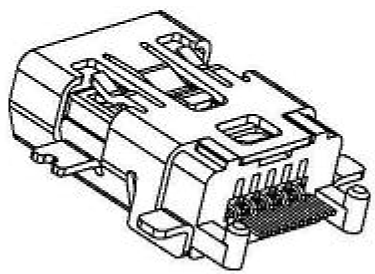
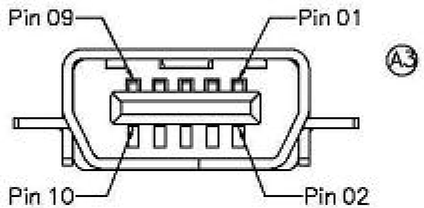
REV.	SPECIFICATION	ECN NO.	APPD.











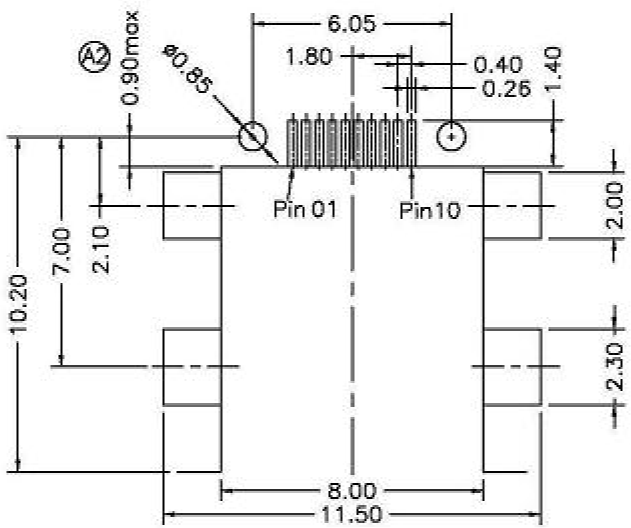
Material:

Housing: High Temperature Plastic UL94V-0.
Terminal: Phosphor Bronze
Shield Case: Brass,Nickel Plated
Plating: Selective Gold plated .

Electrical Characteristics:

Current Rating: 1 AMP.
Dielectric Withstanding Voltage: AC 100V For 1 minute
Insulator Resistance: 100MΩmin. at DC 250V.
Contact Resistance: 50mΩmax. at DC 100mA.
Operating Temperature: $-20^{\circ}C \sim +85^{\circ}C$.

***RoHS Compliant**



P.C. Board Layout
(Tolerance:±0.05)

ordering information

MUC- AB 10 D 5

- MUC-: MINI USB CONNECTOR
- AB: AB Type
- 10: Position
- D: Surface Mount
- 5: Type5

DIM	TOL	DIM	TOL
.X	±0.15	.X	
.X	±0.10	.X	
.XX	±0.05	.XX	

CHINVAY	深圳市创宇伟业科技有限公司			
	FILE NO.		DATE	TITLE: MINI USB I/O CONNECTOR
DRAW NO	DESIGN:			P/N: MUC-AB10D5
	CHECK:			SHEET: 1/1
REV. V0.0				

PRODUCT SPECIFICATION

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1. SCOPE（范围）

This product specification defines the product performance and the test methods to ascertain the performance of the **Mini USB AB Type 10P Female**

本产品规格书规定了 **Mini USB AB Type 10P Female** 产品的特性及测试方法.

2. REFERENCE DOCUMENTS（参考文件）

MIL-STD-1344A	Test method for electrical connector（电子连接器测试方法）
MIL-STD-202F	Test method for electrical components（电子零件测试方法）
EIA364	Test method for electrical components（电子零件测试方法）
JIS C 0051	Test method for electrical components（电子零件测试方法）
MIL-G-45204C	Specification for gold plating （镀金规格）
IEC-512-3	IEC standard for current carrying capacity tests（IEC电流测试标准）
QQ-N-290A	Specification for nickel plating（镀镍规格）
MIL-P-81728A	Specification for tin/lead plating（镀锡铅规格）
MIL-T-10727B	Specification for tin plating（镀锡规格）
UL498	UL standard for safety of attachment plug and receptacle（UL 安规要求标准）
EN/ISO5961	Determination of total lead & cadmium content (总铅和总镉含量测定)
EN1122	Determination of total lead & cadmium content (总铅和总镉含量测定)
EN13346	Determination of heavy metals content (重金属含量测定)
EPA3052	Determination of total lead & cadmium content (总铅和总镉含量测定)

3. FEATURE & DIMENSIONS（特征及尺寸）

3.1. PRODUCT DIMENSION（产品尺寸）

These connectors shall have the dimensions as shown in drawing

本产品的相关尺寸参见图面

3.2. PCB/PANEL LAYOUT（印刷电路板布局）

The recommended PCB layout is shown in drawing

本产品适用的 PCB layout 参见图面

3.3. BILL OF MATERIAL（材料清单）

Harmful material control follow the requirement of RoHS. The bill of material and product number is described in drawing

有害物质控制符合RoHS指令要求，本产品使用的材料参见图面：

3.4. MECHANICAL & ELECTRICAL CHARACTERISTIC（机械及电气特性）

The connector shall have the mechanical and electrical performance as described in drawing.

本产品的机械及电气特性见图面：

3.5. PACKAGING（包装）

Products shall be packaged according to requirements specified in purchase order for safe delivery. Products required tray or carrier tape should meet the proper specification per purchase order. Connector container and the packaging specification is shown in package drawing

产品包装可依客户指定要求。本产品采用T/R包装，具体见包裝图面

3.6. MARKING（标识）

Manufacturer`s name, industry recognized logo, or customer approved marks.
标示制造商的名称，标识或客户认可的相关标志。

3.7 STORAGE（存贮）

Temperature: -20℃~+85℃

4. Environmental（环境要求）

4.2.1. INFRARED REFLOW（红外线回流焊）

Three cycles. Each cycle consisting of three consecutive phased.
三个周期，每个周期包括三个连续的阶段完成；

4.2.1.1. Preheat（预热）

Increase in temperature not to exceed 4℃ per second.
温度增加不超过 4℃ /秒，

4.2.1.2. Soldering（焊接）

Maximum allowable time above reflow temperature of 183℃ is 90 seconds. Maximum temperature in this interval is 255℃, not to exceed 10 seconds.
回流焊温度183℃ 以上的时最长不超过 90秒. 最高温度255℃时间不超过10秒.

4.2.1.3. Cool Down（冷却）

Cool down shall not exceed 6℃ per second.
冷却速度不超过6℃/秒.

Note:（注）

Device temperature measurements are referenced from the top-center of the package outer surface.
设备温度量测时以从顶部中间位置测量为准.

4.2.1.3. Cool Down（冷却）

Cool down shall not exceed 6℃ per second.

冷却速度不超过6℃/秒.

Note:（注）

Device temperature measurements are referenced from the top-center of the package outer surface.
设备温度量测时以从顶部中间位置测量为准.

5. PERFORMANCE AND TEST DESCRIPTION（性能及测试）

5.1. REQUIREMENT（要求）

Product is designed to meet electrical, mechanical, and environmental performance requirements specified in **Table I**.
本产品设计符合附表一所列的机械，电气及环境要求.

5.2. TEST CONDITION（测试条件）

Unless otherwise specified, all tests shall be performed at ambient environmental conditions.
除非特别注明，所有测试在室温条件下完成：

5.3. SAMPLE SELECTION（样品选择）

Test samples shall be selected at random from current production. No test samples shall be reused. Samples are pre-conditioned with 10cycles of durability. Each group shall be containing 5 test samples.
测试样品从现生产的产品中随机抽取，所有测试过的样品不得重复使用. 样品已预先插拔10次，每组测试有5个样品；

5.4. TEST SEQUENCE（测试顺序）

Products qualification test sequence as shown in **Table II.**
产品品质测试顺序见附表二

Table I: Performance Requirements

Items	Requirements	Test Methods
1. Confirmation of Product 产品确认	Product shall be conforming to the requirements of applicable product drawing. 产品必须满足相关文件的规定	Visually, dimensions and functionally inspected per applicable product drawing. 目视，尺寸及功能依产品图面检查.
2. Contact Resistance (Low Level) 接触阻抗	50 mΩ Max. initial 50 mΩ 最大.初态	Subject mated contacts assembled in housing to closed circuit of 0.5 mA max. at open circuit voltage of 200 mV max. 所述固定在外壳里的端子连结到一个封闭回路中测试：电流 0.5mA，电压 200 mV max.

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3. Insulation Resistance 绝缘阻抗	100 MΩ Min. 100 MΩ 最小	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. MIL-STD-202, Method 302, Condition B (500 V DC±10%). 测试产品端子间以及端子与接地间的电阻，适用：MIL-STD-202,方法 302，条件 B (500V DC±10%)
4. Dielectric Strength 耐电压	Connector must withstand test potential of 250 V AC for 1 minute. Current leakage must be 1 AMP max . 样品必须承受测试电 250V AC，时间一分钟，漏电流不大于 1 AMP	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. MIL-STD-202, Method 301. 测试产品端子间以及端子与接地间的电压，适用：MIL-STD-202，方法 301。
5. Connector mated / Unmated force	Mated force: 35N max. Unmated force:7N min.	Measure force necessary to unmated between the counterparts connectors.
6. Contact Retention force (Min.) 端子保持力	3N min./Pin. 3N/Pin. 最小	Apply axial pull out force at a speed of 25±3 mm/minute on the contact assembled in the housing. 轴向力以 25±3mm/每分的速度从塑胶本体上拔出端子.
7. Vibration Sinusoidal Low Frequency 低频正弦振动	No electrical discontinuity greater than 1 μsec (s) shall occur. Contact resistance:**50** mΩ max. 不允许出现超过 1 μsec (s) 的瞬间断开，接触阻抗：50 mΩ最大：	Subject mated connector to 10-55-10 Hz traversed in 1 minute at 1.5 mm amplitude 2 hours each of 3 mutually perpendicular plane, 10 mA applied MIL-STD-202, Method 201. 对测试样品，在频率变化每分钟从 10-55-10 Hz, 振幅 1.5 mm 条件下，在互相垂直的三个面上，每个面 2 小时下测量，电流 10 mA；适用：MIL-STD-202，方法 201。
8. Shock 冲击	No electrical discontinuity greater than 1 μsec. shall occur. No damage to product. 不允许出现超过 1 μsec (s) 的瞬间断开，产品无损坏.	Applying an appropriate holder is allowed in vibration test and shock test. MIL-STD-202, Method 213,490m/s^2, 3 axes. 使用合适的固定方式，适用方法. MIL-STD-202，方法 213，加速度 490m/s2，三个轴上均做测试.
9. Thermal shock 热冲击	No damage, Contact Resistance (Low Level) (Final) **50** mΩ max. 产品无损坏，接触阻抗：50 mΩ最大	Temperature range from -40°C to +85°C .Start from -55°C, after 30 min. change to +85°C; change time is no more than 30 seconds. Total 5 cycles. MIL-STD-202, Method 107D, condition A. 温度变化范围： -40°C~ +85°C；从 -40°C 开始，30 分钟后换到+85°C；转换时间不超过 30 秒；共 5 个循环。适用：MIL-STD-202，方法 107D，条

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		件 A。
10. Humidity 恒温恒湿	No damage, Contact Resistance (Low Level) (Final) **50** mΩ max.. Dielectric Strength should be OK, Insulation Resistance should be 100 MΩ min. 产品无损坏，接触阻抗：50 mΩ最大；耐电压测试 OK, 绝缘阻抗 100MΩ 最小；	Temperature :40±2˚C 96 hours. Relative Humidity : 90-95%; Duration :96 Hours. MIL-STD-202, Method 103, 温度：40±2˚C 96 小时； 相对湿度 ：90-95%；时间：96 小时；MIL-STD-202，方法 103。
11. Solderability 可焊性	Appearance of the specimen shall be inspected after the test with the assistance of a magnifier capable of giving a magnification of 10 X for any damage such as pinholes, void or rough surface. 样品在测试完成后，用放大倍数为 10 倍的显微镜，检查外观损坏如：小孔，空焊，外观粗糙度；	Soldering time: 5 to 10 Seconds Temperature: 260±5°C. 焊接时间：5~10 秒， 温度：255±5°C。
12. Resistance to soldering heat 耐焊接热	No damage 产品无损坏	Leave subject product in the 255±5°C chamber for 2 minutes. 产品置于 255±5°C 烘箱内 2 分钟。
13. Salt Spray 盐雾	Contact Resistance (Low Level) (Final) **50** mΩmax. 接触阻抗(末态) 50 mΩmax.	5±1% salt concentration 48±4 hours 35±2°C MIL-STD-202, Method 101 Condition B. 盐水浓度（重量比）5±1%，时间 48 小时，温度 35±2°C； MIL-STD-202， 方法 101，条件 B.
14. High temperature 高温	Contact resistance: **50** mΩ max. 接触阻抗 50 mΩ max.	Subject product to 85±2°C for 96 hours continuously. MIL-STD-202, Method 108. 产品置于 85±2°C 连续 96 小时，适用 MIL-STD-202, 方法 108。

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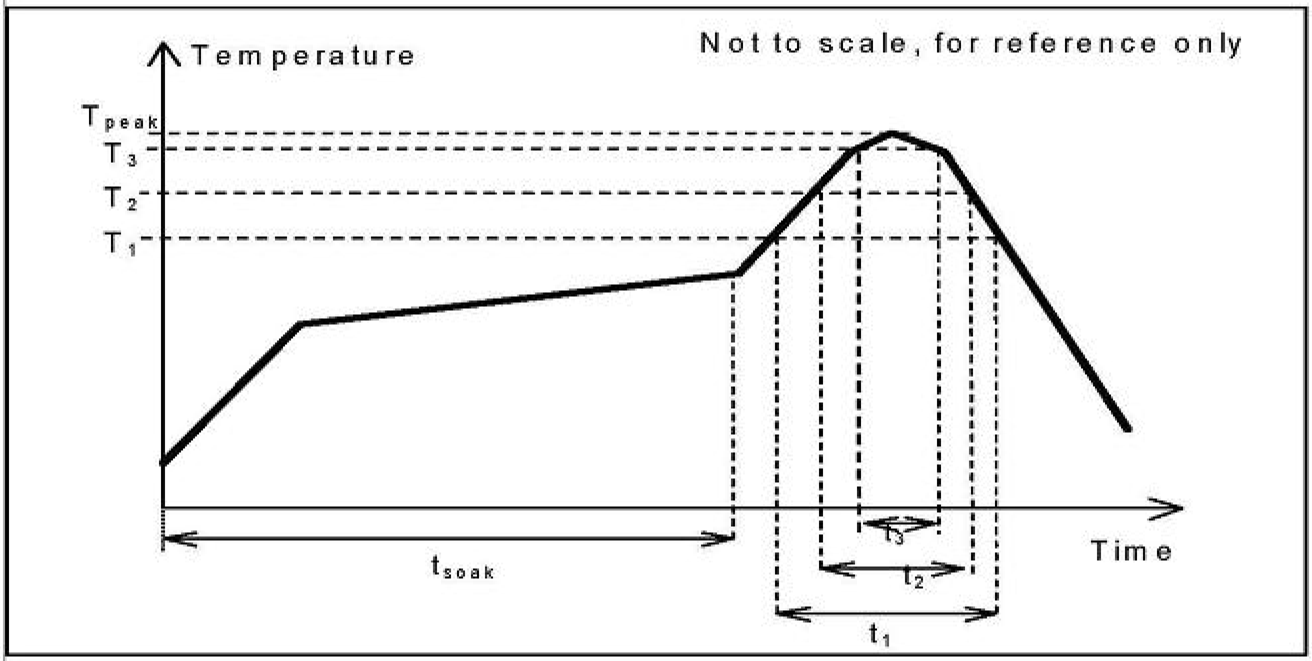
Table II: Product Qualification Test Sequence

Test Description	Test Group							
	A	B	C	E	F	G	H	I
1. Examination of Product 外观	1,8	1	1,8	1,10	1	1	1,7	1,7
2. Contact Resistance (Low Level) 接触阻抗	2,7		2,7	2,6,8			2,6	2,5
3. Insulation Resistance 绝缘阻抗	3		3	3,9			3	3,6
4. Dielectric Strength 耐电压	4		4	4			4	
5. Connector mating/ unmating force	5							
6.Contact retention force (Min.) 端子保持力		2						
7.Vibration Sinusoidal Low Frequency 低频正弦振动			5					
8. Shock 冲击			6					
9. Thermal shock 热冲击				5				
10. Humidity 恒温恒湿				7				
11. Solder ability 可焊性					2			
12. Resistance to soldering heat 耐焊接热						2		
13. Salt Spray 盐雾							5	
14.High temperature 高温								4

Table III: Reflow soldering profile

Pb-free reflow profile requirements:

Parameter	Reference	Specification
Average temperature gradient in preheating		2.5°C/s
Soak time	t_{soak}	2-3 minutes
Time above 217°C	t_1	60 s
Time above 230°C	t_2	50 s
Time above 250°C	t_3	5 s
Peak temperature in reflow	T_{peak}	260°C (–0/+5°C)
Temperature gradient in cooling		Max -5°C/s



This profile is the minimum requirement for evaluating soldering heat resistance of components. Heat transfer method used for reflow soldering is hot air convection. The actual air temperatures used to achieve the specified profile is higher and largely dependent on the reflow equipment.