



深圳市兆达鑫科技有限公司
Shenzhen Zhao Xin Technology Co., Ltd.

SPECIFICATION



客 户
customer

品 名
model

连接器系列
Connector series

型 号
ProductName

MICRO5PIN母座

料 号
Item No

设计人	设计日期	审核人	批准人
DESIGNED BY	DESIGN DATE	CHECKED BY	APPROVED BY
	2017.05.15		
设计单位	ISO9001 认证标志	客户承认	
DESIGN DEPARTMENT	CERTIFICATION OF ISO9001	CUSTOMER APPROVED	
			

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MICROUSB5PIN

Product Specification

Approved by	Kevin	Reported by	Pengbo
Report No.	S101001	REV.	SS5
PAGE	11		
ISSUD DATE	15.2.201		
REVISED DATE	15.2.201		

1. 適用範圍

1. Scope

该标准涵盖深圳市兆达鑫科技有限公司生产的USB C TYPE连接器之功能要求及测试方法。

This standard covers the functional requirements and test methods of USB C type connector produced by Shenzhen zhaodaxin Technology Co., Ltd.

2. 規格

- (1)最大額定電壓：3.3V/ 5V (AC/DC)
- (2)最大額定電流：2.5A
- (3)使用溫度範圍：-25~+85°C.

2. Rating

- (1)Maximum rating voltage：3.3V/ 5V (AC/DC)
- (2)Maximum rating current：2.5A
- (3)Temperature range：-25~+85°C.

3. 性能

除其它特別要求外,所有測試需依以下條件執行.

常溫：15~35°C.

常濕：50~85% RH.

3. Environmental condition

All performance test, unless otherwise specified, is taken as per following environmental condition.

Ambient temperature：15~35°C.

Ambient humidity：50~85% RH.

4. 形狀、尺寸及材質

構造、尺寸、產品主要的材質、表面處理等參考所附產品圖面.

4.Configurations dimensions and materials

See the product drawing attached.

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5. 評定標準

5. RATINGS

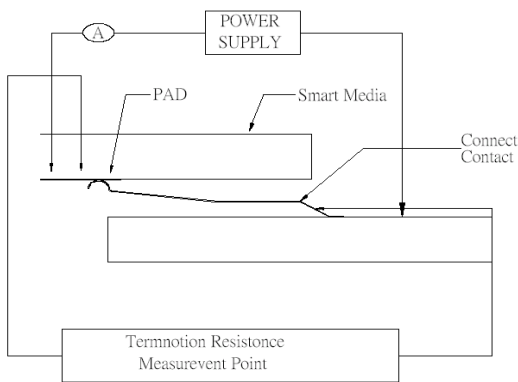
ITEM 項目	RATINGS 評定標準
Rated current 額定電流	2.5 A per contact(各觸點 2.5A)
Dielectric withstanding voltage 耐電壓	AC 500V r.m.s (1 minute 分)
Insulation Resistance 絕緣阻抗	1000 M Ω Min.
Contact Resistance MICRO5PIN USB2.0 接觸阻抗（電阻）	30 m Ω Max.
Operating Temperature MICRO5PIN USB2.0 運行溫度	-25°C ~ +85°C
Storage Temperature MICRO5PIN USB2.0 儲存溫度	-40°C ~ +85°C
Humidity 濕度	95% RH MAX.
Flammability 可燃性	Insulator Material UL94V-0 絕緣材料 UL94V-0

6. 特性

6-1. 電氣的性能

6. Performance

6-1. Electronics performance

No	Items/項目	Test Conditions / 測試條件	Specifications/規格
1	Contact Resistance (接觸阻抗)	1-1. MICRO5PIN USB2.0 : It shall be measured by the dry electric circuit specified as follow: 1mA,20mV, 1kHz,frequenc. Measured in accordance with IEC 512-2-2A. (在 1mA,20mV,1kHz 頻率的驅動電路下測試評估.)  Fig 1 Measuring Point Of Contact Resistance	1 MICRO5PIN USB2.0 : Initial(測試前) : $\leq 30\text{m}\Omega$ After each test(測試後) : $\leq 30\text{m}\Omega$
2	Dielectric Withstanding Voltage (耐電壓)	2-1. MICRO5PIN USB2.0 : It shall be measured when AC 500 V shall be applied for one minute to between next terminals. Measured in accordance with IEC 512-2-4A / MIL-STD-202 method 301. (相鄰兩端使用 500 V 交流電測試 1 分鐘)	Should not have any changes (無任何變化)

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3	Insulation Resistance (絕緣阻抗)	3-1. MICRO5PIN USB2.0 : It shall be measured when 500 V DC is applied for one minute to between next terminals. (相鄰兩端使用 500 V 直流電做 1 分鐘測試評估) Measured in accordance with IEC 512-2-3A / MIL-STD-202 method302.	Initial(測試前) : $\geq 1000M\Omega$ After each test(測試後) : $\geq 1000M\Omega$
4	Appearance (外觀)	Visual. (目視)	Should not have any flaw Scratch discoloration and crushed (無任何裂痕、刮傷、污染和變形)

6-2. 機械特性

6-2. Functional performance

No	Items/項目	Test Conditions / 測試條件	Specifications/規格
1	Insertion / Extraction force (插入力/拔出力)	1-1. MICRO5PIN USB2.0 The contact and card shall be mated and unmated and measured the insertion and extraction force. (測試連接器與卡的插入力、拔出力.) Measured in accordance with USB2.0Standard (Volume 3) Physical specification Section 8.1. (EIA-364-B Class1.1) / DIN IEC 512 Part 7.	(1) MICRO5PIN USB2.0 Insertion(插入力) : 3.5kgMax Extraction(拔出力) : 0.7kg-2.7kg
2	Life Test (壽命測試)	2-1. MICRO5PIN USB2.0 The contact and card shall be mated and mated total 5000times and measured the contact resistance after the test. (連接器與 MICRO5PIN USB2.0 的插入、拔出共 1500 次後,測試其接觸阻抗.) Measured in accordance with MICRO5PIN USB2.0 Test Standard.	(1) MICRO5PIN USB2.0 Insertion(插入力) : Max3.5kg Extraction(拔出力) : 0.7kg-2.7kg Contact Resistance : $\leq 30\ m\Omega$

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3	Vibration test 震動測試	3-1. MICRO5PIN USB2.0 : Vibration Wave : Sine wave.(震動波形：正弦波) Mechanical frequency range(機械頻率範圍) : 10...2000 Hz. Acceleration(加速度) : 2 g. Measured in accordance with IEC 512 part 2 and 4.	(a) Function and performance shall be as specified. Not to change for Physical appearance. (功能和外觀須正常,不得有任何損壞) (b) After the test, Contact Resistance (測試後,接觸阻抗) : MICRO5PIN USB2.0 : $\leq 30m\Omega$ Discontinuity(間斷性) : $\leq 1\mu s$

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No	Items/項目	Test Conditions / 測試條件	Specifications/規格
4	Shock test 衝擊測試	4-1. MICRO5PIN USB2.0 : Acceleration (加速度) : 5 g. Standard holding time(標準時長) : 11 ms, Shock Wave(衝擊波) : Semi-sine wave.(半正弦波) Impact frequency : Apply impact three times on each surface along the three axes (a total of 18 times) (衝擊頻率 : X,Y,Z 三個軸,各軸上、下各做一次衝擊共 3 回,總計 18 次.) Measured in accordance with MICRO5PIN USB2.0 Multi Media Card Test Standard / IEC 512 - 4-6C.	(a) Function and performance shall be as specified. Not to change for physical appearance. (功能和外觀須正常,不得有任何損壞) (b) After the test, Contact Resistance (測試後,接觸阻抗) : MICRO5PIN USB2.0 : $\leq 30m\Omega$ Discontinuity(間斷性) : $\leq 1\mu s$

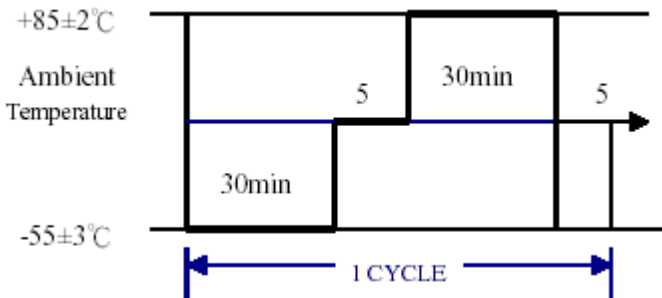
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6-3. 環境特性

6-3. Environmental performance

No	Items/項目	Test Conditions / 測試條件	Specifications/規格
1	Heat resistance 熱阻抗	1-1. MICRO5PIN USB2.0 : The contact and card is exposed in the heat chamber 85°C for 500 hours. (在 85°C,測試 USB2.0 一起放置 500 小時.) Measured in accordance with Multi Media Card test Standard.	(a) Function and performance shall be as specified. Not to change for physical appearance. (功能和外觀須正常,不得有任何損壞) (b) After the test, Contact Resistance (測試後,接觸阻抗) : MICRO5PIN USB2.0 : $\leq 30m\Omega$
2	Cold resistance 冷阻抗	2-1. MICRO5PIN USB2.0 : The contact and card is exposed in the cold chamber -40°C for 168 hours. (在-40°C,測試 USB2.0 與連接器一起放置 168 小時.) Measured in accordance with Multi Media Card test Standard.	(a) Function and performance shall be as specified. Not to change for physical appearance. (功能和外觀須正常,不得有任何損壞) (b) After the test, Contact Resistance (測試後,接觸阻抗) : MICRO5PIN USB2.0 : $\leq 30m\Omega$

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No	Items/項目	Test Conditions / 測試條件	Specifications/規格
3	Thermal shock test 熱衝擊測試	3-1. MICRO5PIN USB2.0 -55°C to +85°C. 5 cycles (1 cycles=1 hour) with connectors engaged. (測試卡與連接器測試 5 次,1 次=1 小時) Measured in accordance with IEC-512-6-11D.  The diagram illustrates the thermal shock test profile. It shows a temperature cycle between +85±2°C and -55±3°C. Each cycle consists of a 30-minute dwell at the high temperature, followed by a 5-minute dwell at the low temperature. The cycle is repeated 5 times. The total duration is 1 hour.	(a) Function and performance shall be as specified. Not to change for physical appearance. (功能和外觀須正常,不得有任何損壞) (b) After the test, Contact Resistance (測試後,接觸阻抗) : MICRO5PIN USB2.0 : $\leq 30m\Omega$

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4	moisture resistance (cycles) 濕度循環測試	4-1. MICRO5PIN USB2.0 : 1.The contact move of standard flexing is exposed 10cycles in the following conditions. 連接器在下述條件下暴露放置測試 10 個循環。 2.It shall be measured the contact resistance after the test. 測試完成后量測其接觸阻抗。 Measured in accordance with IEC 512-6-1Im.			(a). MICRO5PIN USB2.0 : $\leq 30m\Omega$ (b). Function and performance shall be as specified. Not to change for physical appearance. (功能和外觀須正常,不得有任何損壞)
No	Items/項目	Test Conditions / 測試條件			Specifications/規格
5	Humidity 環境濕度	6-1. MICRO5PIN USB2.0 : The contact and card is exposed in the humidity chamber 40°C,93%RH for 500 hours 。 連接器暴露放置在 40°C ,93%RH 測試 500 小時。 It shall be measured the contact resistance after the Test 上述實驗完成后均須作接觸阻抗測試。 IEC 512-6-1IC			(a) MICRO5PIN USB2.0 : $\leq 30m\Omega$ (b). Function and performance shall be as specified. Not to change for physical appearance. (功能和外觀須正常,不得有任何損壞)

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6	Salty spray test 鹽霧實驗	7-1. MICRO5PIN USB2.0 : 1.The contact and card is exposed in the salt spray chamber $35\pm2^{\circ}\text{C}$, 3% salt density for 24hours . 2.It shall be measured the contact resistance after the Test. 3.MIL-STD 883 METHOD 1009. 連接器放置在 $35\pm2^{\circ}\text{C}$, 3% 鹽霧實驗箱內測試 24 小時，測試后量測其接觸阻抗。	(a). MICRO5PIN USB2.0 : $\leq 30\text{m}\Omega$ (b). Function and performance shall be as specified. Not to change for physical appearance. (功能和外觀須正常,不得有任何損壞)
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No	Items/項目	Test Conditions / 測試條件	Specifications/規格
7	Drop test 跌落實驗	8-1 Take a carton of MICRO5PIN USB2.0 CONN on the drop test equipment to do the drop test, the test high is 76 cm, and the test method is “one corner three edge and six surface ”	Function , performance, electric and Co- planarity shall be as specified. No change for physical appearance and electric and Co- planarity out SPEC . 功能,外觀,電性和共面度須合符規範,不得有任何外觀、

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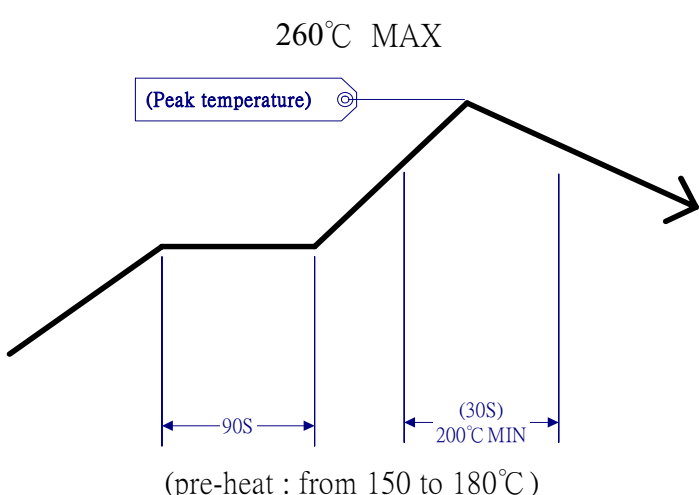
		CONN 完整出貨包裝 1 箱，置於跌落測試機， 跌落高度為 76cm，作 “一角三稜六面” 跌落實驗。 Test method is according with CNS12919 。	結構損壞，電性和共面度不良產生.																		
8	Vibration test with a carton of products 整箱包裝振動測試	9-1 According the specification of products packing. Take a carton of products on the vibration test meter ,the test condition as: 依產品包裝规范要求，將一完整包裝箱置於振動測試機台，作整箱包裝振動測試，測試條件為： 1 .Acceleration of weight(重力加速度)：2.09Grms. 2. Vibration Wave：equivalent sine wave(隨機正弦波). 3. Test frequency and Power spectrum: <table><tr><td>Fr</td><td>S</td><td>MICROMICROSD</td></tr><tr><td>-1 H</td><td></td><td>. 1² H</td></tr><tr><td>1 -13 H</td><td>- dB OCT</td><td></td></tr><tr><td>13 -3 H</td><td></td><td>.² H</td></tr><tr><td>3 - H</td><td>- dB OCT</td><td></td></tr><tr><td>H</td><td></td><td>. 3² H</td></tr></table> 4.Test axis:：X，Y，Z three axis 5.Test times：10 min of each axis	Fr	S	MICROMICROSD	-1 H		. 1 ² H	1 -13 H	- dB OCT		13 -3 H		. ² H	3 - H	- dB OCT		H		. 3 ² H	After test, the function , performance, electric of each product shall be as specified. No change for physical appearance and electric out of SPEC . 功能,外觀,電性須符合規範,不得有任何外觀、結構損壞，電性不良產生.
Fr	S	MICROMICROSD																			
-1 H		. 1 ² H																			
1 -13 H	- dB OCT																				
13 -3 H		. ² H																			
3 - H	- dB OCT																				
H		. 3 ² H																			

6-4. 其他特性

6-4. Other performance

No	Items/項目	Test Conditions / 測試條件	Specifications/規格
1	Solder ability 沾錫性	The contact of terminal shall be put into the flux and dipped solder bath $240\pm 2^{\circ}\text{C}$, 3 ± 0.5 sec. (端子浸入錫爐($240\pm 2^{\circ}\text{C}$, 3 ± 0.5 sec)沾錫.) Measured in accordance with MIL-STD-202.	Solder shall be covered 95% or more of the area that is dipped into the solder bath (沾錫面積須在 95%(含)以上.)

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2	Resistance to soldering heat 焊錫耐熱性	The contact of terminal shall be tested resistance to soldering heat in the following conditions. 端子應在下列條件下做耐吃錫性試驗. In case of solder iron (2 time) Temperature: +350°C +/- 5°C Time: 5s +/- 1s 電烙鐵(兩次) 溫度: +350°C +/- 10°C 時間: 5s +/- 1s The temperature shall be measured on the surface of the PCB. (量測 PCB 表面溫度)	Should not have any flaw scratch and crack. (無任何裂痕、刮傷和破裂)
3.	In IR-reflow (焊錫回流焊耐熱性)	In IR-reflow :  260°C MAX (Peak temperature) © 90S (pre-heat : from 150 to 180°C) (30S) 200°C MIN	(1) Should not have any flaw scratch and crack (無任何裂痕、刮傷和破裂) (2) No visual damage to insulator. (絕緣體不得有嚴重變形)