

承 认 书

Approval Sheet

客户 (Customer): /

客户料号 (Cus .P/N): /

华联威料号 (HLW P/N): U448-0716-G61038

品名规格 (PronameSpec): MICRO 5P F B型牛角

送样日期 (Delivery Date):2021/12/23

承认日期 (Acknowledge Date):2021/12/23

| | | | |
|---|------------------|---------------------------|--------------------|
| Approved No: | | 客 户 Customer | |
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| | | | |
| 深 圳 市 华 联 威 电 子 科 技 有 限 公 司 SHEN ZHEN SHI HUA LIAN WEI ELECTRONICS TECHNOLOGY CO; LTD. | | | |
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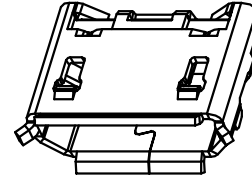
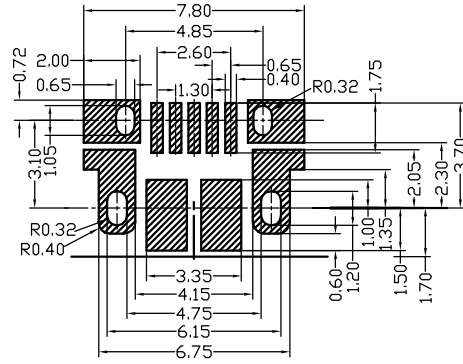
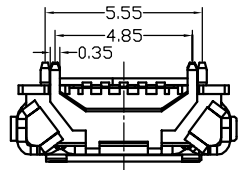
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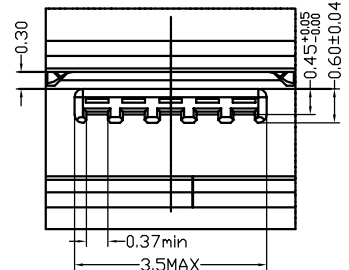
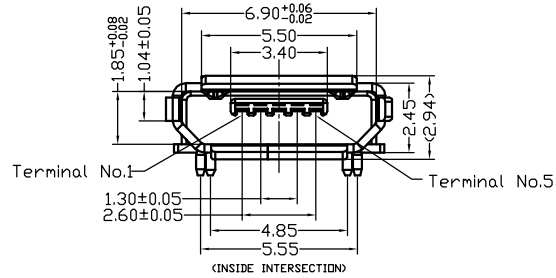
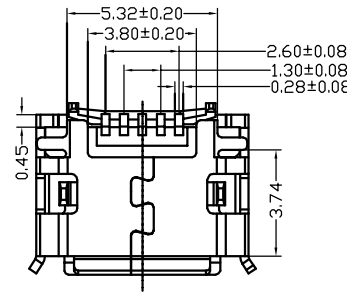
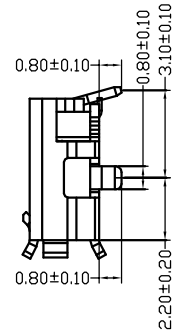
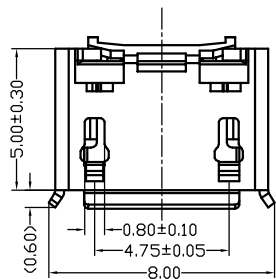
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| | | |
|------|---------|-------|
| REV. | ECN.NO. | APPD. |
| A0 | / | / |



RECOMMENDED PCB PATTERN
TOLERANCE: ±0.05



CONTACT AREA DETAIL VIEW

- NOTES:
- MATERIAL:
 - Housing: thermoplastic plastics,
 - terminals: Copper Alloy
Gold plated overall
 - Shell: Steel & Copper Alloy
Nickel/Tin Plated overall
 - ELECTRICAL CHARACTERISTICS:
 - Rating Current : 1.5 Ampere
 - Rating Voltage : 30 V Max
 - Contact Resistance: 50 Milli ohms
 - Insulation Resistance: 100 Mega ohms Min.
 - MECHANICAL CHARACTERISTICS:
 - Connector Mating force: 35N MAX
 - Connector Unmating force: 7N min
 - ENVIRONMENT CHARACTERISTICS:
 - Operating temperature: -0°C to +50°C
 - Storage temperature: -20°C to +60°C

U448-0716-G61038

6: 铜壳镀锡 3: 载带

G: 半金G/Fu" 1: 黑色

6: LCP

| | | | | | | |
|--------------------------------------|------------|---------------------------|----------------------|--|-------|------|
| TOLERANCE UNLESS OTHERWISE SPECIFIED | | HLW 深圳市华联威电子科技有限公司 | | | | |
| .XXX ±0.10 .XX ±0.20 .X ±0.30 | | X' ±3' .XX' ±2' | | HUA LIAN WEI TECHNOLOGY ELECTRONICS CO.;LTD. | | |
| APPROVED | | PART NAME: | MICRO 5P/F B型 牛角5.55 | | | |
| CHECKED | | PART No: | U448-0716-G61038 | | C | |
| DRAWN | chenyiting | PROJECTION: | UNIT: | SCALE | SHEET | REV. |
| DATE | 2023.03.25 | | mm | 1:1 | 10F1 | A0 |

MICRO USB系列产品SPEC

1. Scope (范围)

1.1 Contents(内容)

This specification covers the performance, tests and quality requirements for the Electronics MICRO USB Connector.
(此份产品规格适用于MICRO USB连接器的产品功能，测试方法及质量要求)

2. Requirements (要求):

2.1 Rating(额定条件)

A. Voltage rating(额定电压):30V AC

B. Current rating(额定电流):1.5A

C. Operation Temperature Range(操作温度范围):0°C to +50°C

3. Test Condition(测试条件):

3.1 Temperature range(温度范围):-+15°C to +35°C

3.2 Humidity range (湿度范围):25% to 85%

4. Test Methods and Requirements:(测试方法及要求)

4.1 Examination of product (产品外观)

| | | | |
|-------|--------------------------------|--------------|--|
| 4.1.1 | Examination of Product 产品外观 | Visual 目视 | No peeling off the plating deformation of the base or damage. 不得有电镀层剥落，塑料变形或破损 |
|-------|--------------------------------|--------------|--|

4.2. Electrical Performance(电气性能)

| | | | |
|-------|--|---|---|
| 4.2.1 | Contact Resistance 接触阻抗 | (EIA-364-06B) Mated connectors, Contact: measure by dry circuit, 30 m Volts maximum,20 mA 配对的连接器， 端子：测试端子在回路中施加直流最大30mV 20mA的电流再测端子的电阻值 | Initial Contact resistance Excluding conductor Resistance:50 mΩ max (Target design value) 接触电阻初始值最大不能超过30 mΩ (目标设计值) |
| 4.2.2 | Dielectric Withstanding Voltage (耐电压) | (EIA-364-20C) Unmated connectors, apply 100V AC (RMS.) for 1 minute between adjacent terminals of ground. 没有配对的连接器在相邻的端子或接地之间通上100V的交流电压1分钟 | 1. No Breakdown or flashover 2. Leakage current:0.5mA Max 1. 不能有损坏或跳火花 2. 漏电流<0.5mA |
| 4.2.3 | Insulation Resistance 绝缘阻抗 | (EIA-364-21C) Unmated connectors, apply 500V DC for 1 minute between adjacent terminals of ground. 没有配对的连接器在相邻的端子或接地之间通上500V的直流电压1分钟 | 1000MΩ min (unmated) 没有配对需大于1000 MΩ |

4.3 Mechanical Performance(机械性能)

| | | | |
|-------|---------------------------------------|--|---|
| 4.3.1 | Insertion/Withdrawal Force 插入力/拔出力 | (EIA-364-13) Insertion and withdrawal speed: 25mm/minute. 插入和拔出的速度为25mm/分 | Maximum insertion force 35N 插入力不超过35N(3.57kg) Withdrawal force 7N min 拔出力最小7N (0.70kg) EXTRACTION FORCE(AFTER TEST):5N MIN 拔出力(耐久测试后):5N最小 |
|-------|---------------------------------------|--|---|

| | | | |
|-------------------------------|----------------------------|---|---|
| 4.3.2 | Durability 寿命测试 | (EIA-364-09) Measure contact and shell resistance after the Following. Automatic cycling:10000 cycles at 100±5 Cycles per hour. 以每小时100±5插拔次数测试10000循环后测量端子和外壳的接触阻抗 | Contact Resistance 接触阻抗 Contact: Change from initial Value: 50 milliohms maximum. 端子: 从初始值开始变化量小于50 mΩ |
| 4.3.3 | Vibration 振动 | (EIA-364-28条件3) Amplitude:1.52mm P-P or 147m/s ² {15G} Sweep time: 50-2000-50Hz in 20 minutes. Duration: 12 times in each (total of 36 times) X, Y, Z, axes. Electrical load DC 100mA current shall be flowed during the test.(ANSI/EIA-364-28 Condition III) 在直流100毫安通电状态下测试, 在X,Y,Z垂直3方向上, 频率50-2000-50赫兹(加速度往复20分钟), 全振幅1.52mm P-P或147 m/s ² {15G}, 每轴12回计36回 | Appearance: No damage 外观: 无损坏 Contact Resistance 接触阻抗 Contact: Change from initial Value:50mΩ Max. 端子: 从初始值开始变化量小于50mΩ 间断性: 不超过1微秒 |
| 4.3.4 | Physical shock 冲击性 | (EIA-364-27条件A) Pulse width: 11msec Waveform: Half-sine 490m/s ² (50G) 3 strokes in each X, Y, Z axes. (ANSI/EIA-364-27 condition A) 周期: 11msec 冲击波形: 正弦半波490m/s ² (50G) 3 循环在X, Y, Z 轴 | Appearance: No damage 外观: 无损坏 Contact Resistance 接触阻抗 Contact: Change from initial Value 50mΩ Max 端子: 从初始值开始变化量小于50mΩ Discontinuity: 1μ sec Max. 间断性: 不超过1微秒 |
| 4.4 Environmental Performance | | | |
| 4.4..1 | Thermal shock test 冷热冲击 | EIA-364-32C条件1) 10 cycles of: a)-55±3°C for 30 minutes b) +85±3°C for 30 minutes 10个循环, a)-55±3°C 30 分钟 b) +85±3°C 30 分钟 | Appearance: No Damage. 外观: 没有损坏 Contact Resistance 接触阻抗 Contact: Change from initial Value 50mΩ Max 端子: 从初始值开始变化量小于50mΩ |
| 4.4..2 | Solder ability 焊锡性 | (EIA-364-52) To be sipped in the solder bath 245±5°C Coverage for 3 seconds. 将焊锡脚浸在245±5°C的锡炉中<3秒 | The inspected area of each lead must have 90% solder coverage minimum 表面粘锡面积不少于90% |
| 4.4..3 | Humidity 恒温恒湿 | (EIA-364-31B) (A) Mate connectors together and perform the test as follows 配对的连接器测试条件 Temperature: +25°C to +85°C(温度: +25°C到+85°C) Relative Humidity: 90% to 95%(相对湿度: 90%到95%) Duration:4 cycles(96 hours) (持续时间: 4个循环共96小时) Upon completion of the test, specimens shall be conditioned ambient room conditions for 24 hours, after which the specified measurements shall be performed. 试验完成后, 样品放置于室温条件中24小时后再进行测试 | Appearance: No Damage 外观, 没有损坏 Contact Resistance 接触阻抗 Contact: Change from initial Value 50mΩ Max 端子: 从初始值开始变化量小于50mΩ |

| | | | |
|--------|-------------------------------------|---|--|
| | | <p>(EIA-364-31B)</p> <p>(B) Unmated each connector and perform the test as follows. 没有配对的连接器测试条件 Temperature: +25°C to +85°C(温度: +25°C到+85°C) Relative Humidity: 90% to 95%(相对湿度: 90%到95%) Duration:4 cycles(96 hours) (持续时间: 4个循环共96小时)</p> <p>Upon completion of the test, specimens shall be conditioned ambient room conditions for 24 hours, after which the specified measurements shall be performed. 试验完成后, 样品放置于室温条件中24小时后再进行测试</p> | <p>Appearance: No Damage 外观, 没有损坏</p> <p>Conform to item of dielectric withstanding Voltage and Insulation Resistance. 符合耐电压及绝缘阻抗要求</p> |
| 4.4..4 | Salt Spray 盐水喷雾 | <p>EIA-364-26B)</p> <p>Temperature: 35±2°C 温度: 35±2°C Concentration for salt: 50% 盐水浓度: 50% (1)Duration: 24H 持续时间: 24小时 Condition(条件): Contact plated gold more than 15u" (include 15 u"),and the material of shell for copper alloy, or stainless. 端子镀金厚度大于等于15 u" 且壳体材质是铜合金或是不锈钢 (2) Duration: 12H 持续时间: 12小时 Condition(条件): Contact plated gold less than 15 u" ,and/or the material of shell for steel 端子镀金厚度小于15u" 且/或壳体材质是铁材</p> | <p>No detrimental corrosion(Terminal solder tail unrequested) 产品无氧化, 锈蚀(端子焊脚镀锡处不作要求)</p> <p>Contact Resistance 接触阻抗 Contact: Change from initial Value 50mΩ Max 端子: 从初始值开始变化量小于50mΩ</p> |
| 4.4..5 | Cold resistance (Unmated) 冷阻抗 | <p>(EIA-364-17B)</p> <p>Unmated connectors and expose to -25±3°C for 250 hours. 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. 没配对的连接器放置于-25±3°C温度中250小时, 当完成实验后, 样品放置一般环境中1到2小时后, 再进行测试</p> | <p>Appearance: No Damage. 外观: 没有损坏</p> <p>Contact Resistance 接触阻抗 Contact: Change from initial Value 30mΩ Max 端子: 从初始值开始变化量小于50mΩ</p> |
| 4.4..6 | Heat resistance (Unmated) 热阻抗 | <p>(EIA-364-17B)</p> <p>Mated connectors and expose to 85±2°C for 250 hours. 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. 配对的连接器放置于85±2°C温度中250小时, 当完成实验后, 样品放置一般环境中1到2小时后, 再进行测试</p> | <p>Appearance: No Damage. 外观: 没有损坏</p> <p>Contact Resistance 接触阻抗 Contact: Change from initial Value 50mΩ Max 端子: 从初始值开始变化量小于50mΩ</p> |

| | | | |
|--------|------------------------------|--|--|
| 4.4..7 | Thermal Aging 高温老化 | <p>(EIA-364-31B, Condition 4, Method A) Unmated connectors and expose to $+85\pm 2^{\circ}\text{C}$ for 250 hours. 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.</p> <p>没配对的连接器放置于$+85\pm 2^{\circ}\text{C}$温度中250小时，当完成实验后，样品放置一般环境中1到2小时后，在进行测试</p> | <p>Appearance: No Damage. 外观：没有损坏 Contact Resistance 接触阻抗 Contact: Change from initial Value 50mΩ Max 端子：从初始值开始变化量小于50mΩ</p> |
| 4.4.8 | Resistance to Soldering Heat | <p>for wave soldering : mil-std-202f,method 210 A,test condition B 波峰焊：mil-std-202f, method 210 A, 试验条件B Pre-heat : 80°C, 60 Seconds 预热:80°C, 60秒 Temperature : $260 \pm 5^{\circ}\text{C}$ 温度:$260\pm 5^{\circ}\text{C}$ Immersion duration : 10 ± 1 sec. 浸泡时间:10 ± 1秒。</p> <p>for manual soldering :手动焊接: mil-std-202f,method 210 A,test condition A Pre-heat : No 预热:没有 Temperature : $350 \pm 10^{\circ}\text{C}$ 温度:$350\pm 10^{\circ}\text{C}$ Immersion duration : 3.5 ± 0.5 sec. 浸泡时间:3.5 ± 0.5秒</p> <div data-bbox="379 1503 874 1962" data-label="Figure"> </div> | <p>No physical damage shall occur. 不可有损坏</p> |

Note 1: Shall meet visual requirements, show no physical damage, and meet requirement of additional tests as specified in the test sequence in Figures 2

说明1: 测试要求不能有物理损坏, 测试依据表格二的顺序进行

3.Product Qualification And Requalification Test:产品测试顺序表 Figure 2

| Test or Examination | Test Group | | | | | | | | | | | | | |
|---------------------------------------|------------|-----|-----|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|
| | A | B | C | D | E | F | G | H | I | J | K | L | M | N |
| Test Sequence | | | | | | | | | | | | | | |
| 4.1.1.Examination of Product 产品外观 | 1,9 | 1,3 | 1,5 | 1 | 1,5 | 1,5 | 1,5 | 1,3 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 1 |
| 4.2.1.Contact Resistance 接触阻抗 | 2,8 | | 2,4 | | 2,4 | 2,4 | 2,4 | | 2,4 | 2,4 | 2,4 | 2,4 | 2,4 | |
| 4.2.2.Dielectric Withstanding Voltage | 3,7 | | | | | | | | | | | | | |
| 4.2.3.Insulation Resistance 绝缘阻抗 | 4,6 | | | | | | | | | | | | | |
| 4.3.1.Insertion/Withdrawal force 插拔力 | | 2 | | | | | | | | | | | | |
| 4.3.2.Durability 寿命测试 | | | 3 | | | | | | | | | | | |
| 4.3.3.Vibration 振动性 | | | | | 3 | | | | | | | | | |
| 4.3.4.Physical shock 冲击性 | | | | | | 3 | | | | | | | | |
| 4.4.1.Thermal shock test 冷热冲击 | | | | | | | 3 | | | | | | | |
| 4.4.2.Solderability 焊锡性 | | | | | | | | 2 | | | | | | |
| 4.4.3.Humidity 恒温恒湿 | 5 | | | | | | | | 3 | | | | | |
| 4.4.4.Salt Spray 盐水喷雾 | | | | | | | | | | 3 | | | | |
| 4.4.5.Cold resistance 冷阻抗 | | | | | | | | | | | 3 | | | |
| 4.4.6.Heat resistance 热阻抗 | | | | | | | | | | | | 3 | | |
| 4.4.7.Thermal Aging 高温老化 | | | | | | | | | | | | | 3 | |
| 4.4.8.IR-reflow 回流焊测试 | | | | | | | | | | | | | | 2 |
| NO. of Test samples(Min.) 测试样 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |

NOTE 2: (a) Numbers indicate sequence in which tests are performed.

(b) Discontinuities shall not take place in this test group, during tests.

说明 2: (a)测试依照矩阵要求数量进行。

(b)在测试中, 群组测试不能间断

核准: 唐竹君

制作人: 覃裕华

測試報告

TEST REPORT

| 產品名稱 Part Name | MICRO 5P F B型牛角 | 測試日期 Date of Testing | 2021.12.22- 2021.12.23 | 報告編號 Report NO. | MD20211223-01 | | | | | | |
|------------------------------|----------------------|---|----------------------------|-------------------------|------------------------|--------------|-------------|-------------|-------------|----------|----|
| 產品型號 Part Name | U448-0716-G61038 | 樣品數量 Quantity | 5PCS | 測試環境 Date of Testing | 濕度 Temp:18~21C 相對濕度 | | | | | | |
| 一. 電性測試 ELECTRICAL TEST | | | | | | | | | | | |
| 序號 NO. | 測試項目 Testing Item | 測試條件 Testing Conditions | 測試設備 Testing Equipments | 規格 SPEC | 測試記錄 Testing Result | | | | | 判定 Judge | |
| | | | | | 1 | 2 | 3 | 4 | 5 | OK | NG |
| 1 | 接觸阻抗 | 2 mA | 直流低電阻 測試儀 | 50 mΩ Max | 19.36 mΩ | 18.0 5 mΩ | 18.62 mΩ | 19.55 mΩ | 18.53 mΩ | V | |
| 2 | 絕緣阻抗 | 500 VDC | 絕緣電阻測 試儀 | 100 mΩ Min. | Pass | Pass | Pass | Pass | Pass | V | |
| 3 | 耐壓測試 | 100V AC / 0.5 mA 1分钟 | 耐壓測試儀 | No damaged | OK | OK | OK | OK | OK | V | |
| 二. 机械特性測試 MECHANICAL TEST | | | | | | | | | | | |
| 序號 NO | 測試項目 Testing Item | 測試條件 Testing Conditions | 測試設備 Testing Equipments | 規格 SPEC | 測試記錄 Testing Result | | | | | 判定 Judge | |
| | | | | | 1 | 2 | 3 | 4 | 5 | OK | NG |
| 4 | 插入力 | 每分钟 25±3mm 的速度 | 插拔力計 | 35N Max. | 16N | 13N | 15N | 15N | 16N | V | |
| 5 | 拔出力 | 每分钟 25±3mm 的速度 | 插拔力計 | 7N Max | OK | OK | OK | OK | OK | V | |
| 6 | 锁口保持力 | 60N Min | 吊重测试机 | 不得发生 物 理损坏 | OK | OK | OK | OK | OK | V | |
| 7 | 耐久性 | 测试速度: 每分 钟 10 到 20 个 循 环, 测试次 | 插拔力計 | 不得发生 物 理损坏 | OK | OK | OK | OK | OK | V | |
| 三. 环境特性测试 ENVIRONMENTAL TEST | | | | | | | | | | | |
| 序號 NO | 測試項目 Testing Item | 測試條件 Testing Conditions | 測試設備 Testing Equipments | 規格 SPEC | 測試記錄 Testing Result | | | | | 判定 Judge | |
| | | | | | 1 | 2 | 3 | 4 | 5 | OK | NG |
| 9 | 冷热冲击 | 温度-55±3° C 温度 85±3C 持 续时间 10H | 高低温试验 箱 | 不得发生 物 理损坏 | OK | OK | OK | OK | OK | V | |
| 10 | 湿温循环 | 温度- 25±85C, 持续 时间: 4aw | 湿温循环机 | 最大接触 阻 抗 30m Ω | OK | OK | OK | OK | OK | V | |
| 11 | 盐雾试验 | 温度:35±2C 12 小时 | 盐雾试验箱 | 最大接触 阻 抗 50m Ω | OK | OK | OK | OK | OK | V | |
| 12 | 可焊性 | 焊锡温度: 245±5C | 熔锡炉 | 沾锡面积 达 95%以上 | OK | OK | OK | OK | OK | V | |
| 13 | 焊接耐热试验 | 260±5C 10 秒 | 工业烘烤箱 | 不得发生 物 理损坏 | OK | OK | OK | OK | OK | V | |
| 綜合判定 TEST JUDGMENT | | <input checked="" type="checkbox"/> 合格(Acceptable) <input type="checkbox"/> 不合格(Reject) | | | | | | | | | |



深圳市华联威电子科技有限公司

檢驗報告

首件檢驗
 入庫檢驗
 出貨檢驗
 客退檢驗
 退料檢驗
 其他
 2021年12月23日 版次:A1

| 料號 | U448-0716-G61038 | 制令單號 | / | | 送檢單位 | 工程部 | 首件製作者 | 裝配 | | | | | |
|------------------|------------------|--|---------|-----------|----------|-----------|-------|----------|----------|-----|-----|-----|----|
| 品名 | MICRO 5P F B型牛角 | 客戶代號 | / | | 批 量 | / | 送檢時間 | / | | | | | |
| | | | | | 數 量 | 5PCS | 確認時間 | / | | | | | |
| 抽樣標準 | | <input checked="" type="checkbox"/> 單次 <input type="checkbox"/> 雙次 | | | 抽樣數 | AQL | CRI:0 | MAJ:0.40 | MIN:0.65 | | | | |
| MIL-STD-105E(II) | | <input checked="" type="checkbox"/> 正常 <input type="checkbox"/> 加嚴 <input type="checkbox"/> 減量 | | | (5PCS) | ACC/REJ | 0 | / | / | | | | |
| 不良數: | | CRI (/) | | MAJ (/) | | MIN (/) | | 不良率(%) | / | | | | |
| NO. | 檢驗項目 單位:MM/G | 檢測 儀器 | 檢 驗 記 錄 | | | | | 品管判定 | | CRI | MAJ | MIN | 備注 |
| | | | 1 | 2 | 3 | 4 | 5 | AC | RE | | | | |
| 尺 寸 測 量 | 5.55±0.20 | D | 5.50 | 5.51 | 5.53 | 5.52 | 5.51 | √ | | | | | |
| | 4.85±0.20 | D | 4.85 | 4.81 | 4.82 | 4.83 | 4.86 | √ | | | | | |
| | 0.35±0.20 | D | 0.32 | 0.31 | 3.33 | 0.33 | 0.35 | √ | | | | | |
| | 5.00±0.30 | D | 5.01 | 5.02 | 5.05 | 5.03 | 5.01 | √ | | | | | |
| | 0.60±0.20 | D | 0.65 | 0.66 | 0.66 | 0.63 | 0.62 | √ | | | | | |
| | 8.00±0.20 | D | 8.11 | 8.10 | 8.10 | 8.12 | 8.15 | √ | | | | | |
| | 6.90+0.06/-0.02 | D | 6.88 | 6.88 | 6.89 | 6.89 | 6.89 | √ | | | | | |
| | 5.50±0.20 | D | 5.53 | 5.52 | 5.56 | 5.54 | 5.53 | √ | | | | | |
| | 1.85+0.08/-0.02 | D | 1.85 | 1.85 | 1.86 | 1.85 | 1.86 | √ | | | | | |
| | 1.30±0.05 | D | 1.31 | 1.33 | 1.32 | 1.31 | 1.32 | √ | | | | | |
| | 2.60±0.05 | D | 2.61 | 2.61 | 2.62 | 2.63 | 2.63 | √ | | | | | |
| | 4.85±0.20 | D | 4.81 | 4.86 | 4.82 | 4.87 | 4.83 | √ | | | | | |
| | 2.45±0.20 | D | 2.40 | 2.41 | 2.43 | 2.45 | 2.46 | √ | | | | | |
| | 2.94±0.20 | D | 2.90 | 2.90 | 2.93 | 0.95 | 2.93 | √ | | | | | |
| | 3.10±0.10 | D | 3.12 | 3.15 | 3.15 | 3.12 | 3.16 | √ | | | | | |
| | 2.20±0.20 | D | 2.25 | 2.23 | 2.25 | 2.26 | 2.21 | √ | | | | | |
| | 0.80±0.10 | D | 0.85 | 0.83 | 0.82 | 0.81 | 0.82 | √ | | | | | |
| | 5.32±0.20 | D | 5.31 | 5.30 | 5.32 | 5.31 | 5.30 | √ | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

檢驗依據: 《工程圖紙》
 《檢驗規範》
 《承認書》
 樣品
 其它

檢測儀器:A游標卡尺 B千分尺 C厚薄儀 D投影鏡 E放大鏡 F顯微鏡 G錫爐 H插拔力器 I間位尺 J其它

品保判定: 合格Accept
 退貨Reject
 特采Waive
 挑選Sort

核准: 欠必鋒

審核: 刘联英

檢驗員: 但芬

| | | | | | |
|-------------------------------|----------|---------|---------------|------------|----------|
| 品名: MICRO 5P F B型牛角(端子) | | | | | 版次:A.0 |
| 电镀规格:Ni40u", Sn100u", AuG/Fu" | | | 日期:2021-10-26 | 页次:1/1 | |
| 厂商:同华 | | | | | |
| 测试设备:CMI X-射线膜厚测试仪 | | | | | |
| 1、底层电镀测试(Ni) | | | | | |
| 数据 | 测试标准 | 实测值 | 判定 | 测试日期 | 测试时间 |
| 1 | 40u"MIN | 60.5u" | OK | 2021/10/26 | 14:15:03 |
| 2 | 40u"MIN | 58.3u" | OK | 2021/10/26 | 14:15:05 |
| 3 | 40u"MIN | 67.5u" | OK | 2021/10/26 | 14:15:07 |
| 4 | 40u"MIN | 62.4u" | OK | 2021/10/26 | 14:15:09 |
| 2、表层电镀测试(Sn) | | | | | |
| 数据 | 测试标准 | 实测值 | 判定 | 测试日期 | 测试时间 |
| 1 | 100u"MIN | 105.3u" | OK | 2021/10/26 | 14:20:12 |
| 2 | 100u"MIN | 112.7u" | OK | 2021/10/26 | 14:20:14 |
| 3 | 100u"MIN | 118.9u" | OK | 2021/10/26 | 14:20:16 |
| 4 | 100u"MIN | 114.3u" | OK | 2021/10/26 | 14:20:18 |
| 3、表层电镀测试(Au) | | | | | |
| 数据 | 测试标准 | 实测值 | 判定 | 测试日期 | 测试时间 |
| 1 | G/Fu"MIN | 1.25u" | OK | 2021/10/26 | 14:25:06 |
| 2 | G/Fu"MIN | 1.37u" | OK | 2021/10/26 | 14:25:08 |
| 3 | G/Fu"MIN | 1.23u" | OK | 2021/10/26 | 14:25:10 |
| 4 | G/Fu"MIN | 1.12u" | OK | 2021/10/26 | 14:25:12 |

核准: 欠必锋

审核: 刘联英

检验员: 但芬

HLWconn® 深圳市华联威电子科技有限公司
电镀报告表

| 品名: MICRO 5P F B型牛角 (外壳) | | 版次:A.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------------|---------|----|-----------|----------|----|------|------|---|----------|---------|----|-----------|----------|---|----------|---------|----|-----------|----------|---|----------|---------|----|-----------|----------|---|----------|---------|----|-----------|----------|
| 电镀规格:Ni:50u"min, Sn:100u"min | 日期:2021/11/01 | 页次:1/1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 厂商:金和源 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 测试设备:CMI X-射线膜厚测试仪 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1、底层电镀测试 (Ni) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"><thead><tr><th>数据</th><th>测试标准</th><th>实测值</th><th>判定</th><th>测试日期</th><th>测试时间</th></tr></thead><tbody><tr><td>1</td><td>50u"min</td><td>57.3u"</td><td>OK</td><td>2021/11/1</td><td>19:58:12</td></tr><tr><td>2</td><td>50u"min</td><td>55.6u"</td><td>OK</td><td>2021/11/1</td><td>19:59:04</td></tr><tr><td>3</td><td>50u"min</td><td>56.2u"</td><td>OK</td><td>2021/11/1</td><td>20:01:44</td></tr><tr><td>4</td><td>50u"min</td><td>58.3u"</td><td>OK</td><td>2021/11/1</td><td>20:02:36</td></tr></tbody></table> | | | 数据 | 测试标准 | 实测值 | 判定 | 测试日期 | 测试时间 | 1 | 50u"min | 57.3u" | OK | 2021/11/1 | 19:58:12 | 2 | 50u"min | 55.6u" | OK | 2021/11/1 | 19:59:04 | 3 | 50u"min | 56.2u" | OK | 2021/11/1 | 20:01:44 | 4 | 50u"min | 58.3u" | OK | 2021/11/1 | 20:02:36 |
| 数据 | 测试标准 | 实测值 | 判定 | 测试日期 | 测试时间 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 50u"min | 57.3u" | OK | 2021/11/1 | 19:58:12 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 50u"min | 55.6u" | OK | 2021/11/1 | 19:59:04 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 50u"min | 56.2u" | OK | 2021/11/1 | 20:01:44 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 50u"min | 58.3u" | OK | 2021/11/1 | 20:02:36 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2、表层电镀测试 (Sn) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"><thead><tr><th>数据</th><th>测试标准</th><th>实测值</th><th>判定</th><th>测试日期</th><th>测试时间</th></tr></thead><tbody><tr><td>1</td><td>100u"min</td><td>113.3u"</td><td>OK</td><td>2021/11/1</td><td>20:03:12</td></tr><tr><td>2</td><td>100u"min</td><td>108.6u"</td><td>OK</td><td>2021/11/1</td><td>20:04:04</td></tr><tr><td>3</td><td>100u"min</td><td>116.2u"</td><td>OK</td><td>2021/11/1</td><td>20:05:44</td></tr><tr><td>4</td><td>100u"min</td><td>118.3u"</td><td>OK</td><td>2021/11/1</td><td>20:06:36</td></tr></tbody></table> | | | 数据 | 测试标准 | 实测值 | 判定 | 测试日期 | 测试时间 | 1 | 100u"min | 113.3u" | OK | 2021/11/1 | 20:03:12 | 2 | 100u"min | 108.6u" | OK | 2021/11/1 | 20:04:04 | 3 | 100u"min | 116.2u" | OK | 2021/11/1 | 20:05:44 | 4 | 100u"min | 118.3u" | OK | 2021/11/1 | 20:06:36 |
| 数据 | 测试标准 | 实测值 | 判定 | 测试日期 | 测试时间 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 100u"min | 113.3u" | OK | 2021/11/1 | 20:03:12 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 100u"min | 108.6u" | OK | 2021/11/1 | 20:04:04 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 100u"min | 116.2u" | OK | 2021/11/1 | 20:05:44 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 100u"min | 118.3u" | OK | 2021/11/1 | 20:06:36 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

核准: 欠必锋

审核: 刘联英

检验员: 但芬

盐水喷雾实验报告

| | | | |
|--|----------------------------------|---------|---------------------|
| 试验方法 | 盐水喷雾腐蚀试验法 | 参考资料 | MIL-STD-1216 |
| METHOD | NEUTRL SALT SPRAY CORROSION TEST | REF | |
| 客户 | / | 试验起始日期 | 2021年12月22日20:00 时起 |
| | | DATE | 2021年12月23日08:00 时止 |
| 样品名称 | MICRO 5P F B型牛角 | 试验数量 | 5PCS |
| P/N | U448-0716-G61038 | QTY | |
| 试验条件 (TEST CONDITION) | | | |
| 1、盐水溶解 (SALT SOLUTION: 浓度 $50 \pm 10\text{g/L}$, PH值6.5-7.2. | | | |
| 2、试验室温度 (TEMP. IT THE SPRAY DHAMBR): $35 \pm 1^\circ\text{C}$. | | | |
| 3、盐水桶温度 (TEMP. OF SALE SOL' N TANK): $35 \pm 1^\circ\text{C}$. | | | |
| 4、压力桶温度 (TEMP. OF SAR SUPPLIERY): $47 \pm 1^\circ\text{C}$. | | | |
| 5、试验室相对湿度 (R.H IN THE CHAMBER) 85%. | | | |
| 6、压缩空气压力 (COMPRESSED AIR PRESSURE): $1.00 \pm 0.01\text{Kg/cm}^2$. | | | |
| 7、样品放置位置 (SPECIMEN SUPPORTED ANGLE): 尼龙绳吊挂 $70^\circ - 90^\circ$. | | | |
| 8、喷雾收集量 (COLLECT RATE OF SALT SOL' N) $1-2\text{mL}/(8\text{ cm}^2\text{hr})$. | | | |
| 9、盐雾测试时间: 12小时 (H) | | | |
| 判定方法 (ADFUSGD METHOD) | | | |
| 试验后以20倍放大镜检查、无蓝、绿色腐蚀物之现象 (不包含折弯处), 即判定合格. (Inspext the ecimen at 20 xmagnification no blue or green corrosion products are acceptable) | | | |
| 样品序号 | 试验后现象 | 判定 | |
| | PHENOMENON AFTER TEST | COMMENT | |
| 1 | 无蓝、绿色腐蚀物之现象 | OK | |
| 2 | 无蓝、绿色腐蚀物之现象 | OK | |
| 3 | 无蓝、绿色腐蚀物之现象 | OK | |
| 4 | 无蓝、绿色腐蚀物之现象 | OK | |
| 5 | 无蓝、绿色腐蚀物之现象 | OK | |
| | | | |
| | | | |
| | | | |

核准: 欠必锋

试验员: 但芬

Materials Information

PRODUCT NAME: LCP M-401 BK

COMPOSITION/INFORMATION OF LCP M-401 BK

SUBSTANCE/MIXTURE: Mixture

SYNONYM(S): Aromatic Liquid Crystal Polymer(LCP)

| 品名 | 比例 | 用途 |
|------------|-------|------------|
| 德众泰 LCP 树脂 | 0.565 | 构成材料主要成分 |
| 抗氧化剂 | 0.002 | 抗氧化 |
| 科莱恩热稳定剂 | 0.003 | 增加高温稳定性 |
| 黑色母 | 0.01 | 着色 |
| 滑石粉 | 0.2 | 增强剂, 增加流动性 |
| 玻纤 | 0.22 | 增强 |

NAME OF COMPANY: DZT Engineering Plastics Tech. Co.,Ltd

ADDRESS: Building 2 Zhichong Industrial Park, Hi-Tech Zone, Jiangmen City,
Guangdong Province, China

SECTION IN CHARGE: Quality Assurance Department

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EMERGENCY TEL: +86-750-3689708



鉅鼎銅材廠檢驗報告單

| | | | | | | | | | | |
|------------------------------|--------------------------|----------------------|--------------------------------|------------------------|-----------------------------------|-----------------------------|--------------------------------------|-----------------------|------|----|
| 公司名稱 Customer | 鉅鼎銅材廠檢驗報告單 | | | | 重量 Weight(kg) | 1078 | 出貨日期 Date | 2021/11/23 | | |
| 品名 Article | 標準 Standard No | | | | 尺寸 Dimension | | 狀態 Tenper | 銅卷編號 Coil No | | |
| C2680 | JISH3100:2017 | | | | 0.18*400 | | EH | 1021-C-08 | | |
| 化學成分Chemical Compositions(%) | | | | | | | | | | |
| 元素 Element | Cu % | Zn% | Pb% | Fe% | \ | \ | \ | \ | 化學成分 | 雜質 |
| 規範 Spec | 64.0-68.0 | 餘量 | <0.05 | <0.05 | \ | \ | \ | \ | 合格 | 合格 |
| 實測 Actual | 64.32 | 餘量 | 0.0036 | 0.0136 | \ | \ | \ | \ | 合格 | 合格 |
| 機械性質Mechanical Properties | | | | | | | | | | |
| 項目 Item | 結晶粒度 Grain Size Mm | 硬度 Hardness Hv | 抗拉強度 TensionStrength Mpa | 伸長度 Elongation % | 導電率 Electrical Conduc %IACS | 彎曲試驗 Bending Test 180 | 表面粗度 Surface Roughness Ra(u m) | 彎曲度 Camber mm/n | | |
| 規範MAX Spec | \ | 170-190 | 490-610 | \ | \ | \ | \ | \ | | |
| 實測 Actual | \ | 178 | 574 | 5 | \ | \ | \ | \ | | |

品質部

