# PRODUCT SPECIFICATION

# 產品規格書

| 產品名稱 Description | 產品料號 Part No. | 圖號 Drawing No. |
|---|---|---|
| High Power Card Edge | 9302-2P02S12N113ACB30KA | 9302-D0000-041 |
| | | |
| | | |
| | | |

| PRODUCT NAME<br>產品名稱 | DOCUMENT No.:<br>文件編號 | Rev.<br>版本 | OUPIIN<br>歐品電子 |
|---|---|---|---|
| High Power Card Edge | Q9302-PSS-003 | A | |
| | Approved<br>核准 | Checked<br>審核 | Prepared<br>制作 |
| | Q.A. Section Chief | Joseph Yen | 04.26/2017 |

## 1. SCOPE 適用範圍

This product specification defines the product performance and the test methods to ascertain the performance of the High Power Card Edge connector , which is designed and manufactured by Oupiin Electronic Co., Ltd. This product specification is applicable but not only for those part numbers which be shown in the cover page.

本產品規格書規定了由歐品電子有限公司設計生產的 High Power Card Edge connector 型連接器產品的特性及測試方法。本產品規格書適用於但不局限於封面所顯示的產品料號。

## 2. REFERENCE DOCUMENTS 參考文件

| | |
|---|---|
| MIL-STD-1344 | Test method for electrical connector 電子連接器測試方法 |
| MIL-STD-202 | Test method for electrical components 電子零件測試方法 |
| EIA364 | Test method for electrical components 電子零件測試方法 |
| JIS C 0051 | Test method for electrical components 電子零件測試方法 |
| MIL-G-45204C | Specification for gold plating 鍍金規格 |
| IEC-512-3 | IEC standard for current carrying capacity tests IEC電流測試標準 |
| QQ-N-290A | Specification for nickel plating 鍍鎳規格 |
| MIL-P-81728A | Specification for tin/lead plating 鍍錫鉛規格 |
| MIL-T-10727B | Specification for tin plating 鍍錫規格 |
| UL1977 | UL standard for safety of attachment plug and receptacle UL安規要求標準 |

## 3. FEATURE & DIMENSIONS 特征及尺寸

### 3.1. PRODUCT DIMENSION 產品尺寸

These connectors shall have the dimensions as shown in drawing.

本產品的相關尺寸參見圖面。

### 3.2. PCB/PANEL LAYOUT 印刷電路板佈局

The recommended PCB layout is shown in drawing.

本產品適用的 PCB layout 參見圖面。

### 3.3. BILL OF MATERIAL 材料清單

Harmful material controlling follows the requirements of RoHS. The bill of material is described in drawing.

有害物質控制符合RoHS指令要求。本產品使用的材料參見圖面。

### 3.4. MECHANICAL & ELECTRICAL CHARACTERISTIC 機械及電氣特性

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

本產品的機械及電氣特性參見圖面。

### 3.5. PACKAGING 包裝

Products shall be packaged according to requirements specified in purchase order for safe delivery, connector container and the packaging method are shown in package specification.

產品可依客戶指定要求包裝，包裝材料與包裝方式參見產品包裝規範。

### 3.6 RATING CURRENT AND RATING VOLTAGE 額定電流與額定電壓

Rating current: Signal pin 1.5A Power pin12.5A (UL)
額定電流: Signal pin 1.5A Power pin12.5A (UL)
Rating voltage : Power pin 250V Signal pin 30V
額定電壓 Power pin 250V Signal pin 30V

### 3.7 STORAGE AND OPERATING TEMPERATURE 存貯與使用溫度

Temperature range: -55°C~+105°C, including terminal temperature rise for rating current.

Storage Temperature :0°C~+40°C, Humidity: 80%RH under，Time limit is 18 months the products are stored。

溫度範圍：-55°C~+105°C,包含接觸端子的額定電流溫升.

儲存溫度：0℃~+40℃，濕度：80%RH以下,產品限存時間爲18個月.

## 4. ENVIRONMENTAL（環境要求）

### *4.1. SOLDERABILITY （可焊性）*

Connectors meet solder ability to MIL-STD-202. Finish shall be free of contaminants.
(產品可焊性符合 MIL-STD-202 標準規定的相關要求，表面不得有污染物.)

### *4.2. RESISTANCE TO SOLDER HEAT （耐焊接熱）*

#### *INFRARED REFLOW（紅外線回流焊接）*

Each cycle consists of three consecutive phases..
(每個焊接週期包括三個連續的階段)

#### *1. Preheat （預熱）*

Increase in temperature not to exceed 4°C per second.
溫度增加速度不超過 4°C /秒。

#### *2. Soldering （焊接）*

Maximum allowable time above reflow temperature of 150°C is 120 seconds. Maximum temperature in this interval is 260°C, duration is 3~5 seconds.
回流焊溫度在150°C以上的時間最長不超過120秒。最高溫度260°C時間3~5秒。熔錫。板面溫度與板底的溫度溫差不得超過100°C。板下溫度峰值有鉛產品維持在220~250°C，無鉛產品控制在235~265°C。浸錫時間控制在3~10秒。)

***3. Cool Down （冷卻）***

Cool down shall not exceed 5℃ per second. (冷卻速度不超過5℃/秒.)

**Note:** （說明）

Device temperature measurements are referenced from the top-center of the package outer surface. (設備溫度量測時以從頂部中間位置測量爲準.)

## 5. PERFORMANCE AND TEST DESCRIPTION 性能及測試

### 5.1. REQUIREMENT 要求

Product is designed to meet electrical, mechanical, and environmental performance requirements specified in **Table I**.

本產品設計符合**附表一**所列的機械，電氣及環境要求。

### 5.2. TEST CONDITION 測試條件

Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

除非特別注明，所有測試在室溫條件下完成。

### 5.3. SAMPLE SELECTION 樣品選擇

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 at least.

測試樣品從現生產的產品中隨機抽取，所有測試過的樣品不得重複使用。樣品已預先插拔10次，每組測試至少有5個樣品。

# Table I: Test Requirements and Methods

附表一: 測試要求與方法

| Items<br>項目 | Requirements<br>要求 | Test Methods<br>測試方法 |
|---|---|---|
| 1. Confirmation of Product<br>產品確認 | Product shall be conforming to the requirements of applicable product drawing.<br>產品必須符合相關產品圖面的要求。 | Visually, dimensions and functionally inspected per applicable product drawing.<br>依相關產品圖面，檢查產品的外觀、尺寸及功能。 |
| 2. Contact Resistance<br>接觸阻抗 | Power pin:0.6 mΩ Max.initial.<br>Signal pin:25 mΩ Max.initial.<br>Contact resistance change△10 mΩ Max<br>Power pin 初始狀態 0.6mΩ Max,<br>Signal pin 初始狀態 25mΩ Max,<br>接觸電阻變化值 △10 mΩ Max | Subject mated contacts assembled in housing to closed circuit of 20 mA max. EIA 364 TP06<br>所述固定端子連結到一個封閉回路中測試,電流 20 mA max,電壓 20 mV max。適用:EIA 364 TP06 |
| 3. Insulation Resistance<br>絕緣阻抗 | Power pin: 5000 MΩ Min.<br>Signal pin: 500 MΩ Min.<br>Power pin 最小 5000 MΩ.<br>Signal pin 最小 500 MΩ. | Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector.<br>EIA 364 TP06 ,Condition B (500 V DC±10%).<br>測試產品相鄰端子間以及端子與接地間的電阻<br>適用：EIA 364 TP06,條件 B (500 V DC±10%)。 |
| 4. Dielectric Withstanding Voltage<br>耐電壓 | Power pin must withstand test potential of 1000 VAC RMS for 1 minute, current leakage must be 1.0mA Max.<br>Signal pin must withstand test potential of 500 VAC RMS for 1 minute, current leakage must be 1.0mA Max.<br>Power pin 必須承受測試電壓 1000 VAC RMS，時間 1 分鐘，漏電流不大於 1.0 mA。<br>Signal pin 必須承受測試電壓 500 VAC RMS，時間 1 分鐘，漏電流不大於 1.0 mA。 | Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. MIL-STD-202, Method 301.<br>對產品相鄰端子間以及端子與接地間加載電壓，測試其漏電流。適用：MIL-STD-202，方法 301。 |
| 5. Durability (Repeated Mating/Un-mating)<br>耐久性 | Contact Resistance: After testing, no damage, Dielectric Strength should be OK; Power contact resistance 0.6mΩ max and signal contact resistance change10 mΩ max. | Repeat mate and unmated for connector 200 cycles, at a speed of 25.4±3 mm per minute.<br>重復進行配合產品 200 次插拔，速度 25.4±3mm/分鐘。 |

| | | |
|---|---|---|
| | 測試後產品無損壞，電源針接觸阻抗最大 0.6mΩ，信號針接觸阻抗比初始值增大不超過 10 mΩ。 | |
| 6. Contact Retention Force<br>端子保持力 | Signal pin: 5N/Pin. Min.<br>Power pin: 32N /Pin. Min.<br>Signal pin 每支最小 5N<br>Power pin 每支最小 32N | Apply axial pull out force at a speed of 25.4±3 mm/minute on the contact assembled in the housing.<br>以 25.4±3mm/分鐘的速度施加軸向拉力從塑膠本體上拔出端子。 |
| 7. Mating /Un-mating Force<br>插入力/拔出力 | Power:Mating force: 0.90N/Pin Max.<br>Un-mating force:0.25N/pin Min.<br>Signal: Mating force:0.28N /pin pair Min<br>Un-mating force:0.06N/pin Min.<br>Power 插入力最大：0.90N/pin Max。<br>拔出力最小：0.25N/pin Min.<br>Signal 插入力最大:0.28N/pin Max。<br>拔出力最小：0.06N/pin Min. | At a speed of 25.4±3 mm/minute, apply axial insert the mating part into fully or pull out from the subject product.<br>以 25.4±3 mm/分鐘的速度，軸向完全插入對配插件到被測產品中或從被測產品中拔出。 |
| 8. Thermal Shock<br>溫度沖擊 | Contact Resistance: After testing, no damage,Dielectric Strength should be OK; Power contact resistance 0.6mΩ max and signal contact resistance change10 mΩ max.<br>測試後產品無損壞，電源針接觸阻抗最大 0.6mΩ，信號針接觸阻抗比初始值增大不超過 10 mΩ。 | Temperature range from -55±3°C to +85±2°C. Start from -55°C, after 30 minutes, change to +85±2°C; change time is no more than 5 minutes, total 5 cycles. MIL-STD-202, Method 107, condition A.<br>溫度變化範圍： -55±3°C~ +85°±2C。從 -55°C 開始，30 分鐘後換到+85°C，轉換時間不超過 5 分鐘，共 5 個循環。適用：MIL-STD-202，方法 107，條件 A。 |
| 9. Humidity-Temperature Cycle<br>溫濕度循環 | Contact Resistance: After testing, no damage,Dielectric Strength should be OK; Power contact resistance 0.6mΩ max and signal contact resistance change10 mΩ max.<br>測試後產品無損壞，電源針接觸阻抗最大 0.6mΩ，信號針接觸阻抗比初始值增大不超過 10 mΩ。 | Subject product to -25~65°C, 90-95%.R.H 10Cycles. EIA-364-31B<br>產品置於-25~65°C,相對濕度:90-95%,循環 10 次,適用：EIA-364-31B |
| 10. Salt Spray<br>鹽霧 | Contact Resistance: After testing, no damage,Dielectric Strength should be OK; Power contact resistance 0.6mΩ max and signal contact resistance change10 mΩ max.<br>測試後產品無損壞，電源針接觸阻抗最大 0.6mΩ，信號針接觸阻抗比初始值增大不超過 10 mΩ。 | 5±1% salt concentration 48 hours 35±2°C MIL-STD-202, Method 101, condition B.<br>鹽水濃度 5±1%，時間 48 小時，溫度 35±2°C。適用：MIL-STD-202，方法 101，條件 B。 |
| | | |

| | | |
|---|---|---|
| 11.High Temperature Life<br>高溫老化 | Contact Resistance: After testing, no damage,Dielectric Strength should be OK; Power contact resistance 0.6mΩ max and signal contact resistance change10 mΩ max.<br>測試後產品無損壞，電源針接觸阻抗最大 0.6mΩ，信號針接觸阻抗比初始值增大不超過 10 mΩ。 | Subject product to 105±2°C for 240 hours continuously. MIL-STD-202, Method 108, condition A.<br>產品置於 105±2°C 連續 240 小時。<br>適用：MIL-STD-202, 方法 108，條件 A。 |
| 12. Solderability<br>可焊性 | *There shall have a solder coverage of 95% minimum*。<br>*產品在測試完成後，焊接部位粘錫面積大於 95%*。 | Soldering time: 4 to 6 seconds.<br>Temperature: 260±5°C.<br>MIL-STD-202, Method 208.<br>焊接時間：4~6 秒。<br>溫度：260±5°C。<br>適用：MIL-STD-202，方法 208。1 |

Material Housing：068-LCP(Black)

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**Liquid Crystal Polymer**

# LAPEROS®

# GA130

(Glass Fiber 30% filled / Standard)

## 1. Typical properties

Typical properties of GA130 are shown in Table 2-1.

**Table 2-1 Typical properties**

| Item | Method | Unit | LAPEROS® GA130 |
|---|---|---|---|
| Density | ISO1183 | | 1.61 |
| Flexural Strength<br>Flexural Modulus<br>Flexural Elongation at Break | ISO178 | MPa<br>MPa<br>% | 195<br>15,000<br>1.8 |
| DTUL (1.8MPa) | ISO75/A | Deg.C | 280 |
| Flammability | UL94 | | 0.1mmt V-0 |

Values shown are based on limited testing. These provisional values are not intended for use in establishing maximum, minimum or ranges for specification purposes.

## 2. Typical Injection Molding Condition

LAPEROS® LCP is a kind of aromatic polyester. Drying before molding is necessary. The typical drying condition is 140～170deg.C at pellet temperature for 4～6 hours using dehumidified air at -40deg.C dew point.

Actual temperature of resin during molding is more important than setting value of the injection machine. It was shown the typical setting value in Table 2-2.

# Material Housing :UL

Component - Plastics E106764

**POLYPLASTICS CO LTD**

VECTRA DIVISON, 18-1 KONAN 2 CHOME, MINATO TOKYO 1088280 JP

## GA130

**Liquid Crystal Polymer (LCP), "LAPEROS", furnished as pellets**

| Color | Min Thk (mm) | Flame Class | HWI | HAI | RTI Elec | RTI Imp | RTI Str |
|---|---|---|---|---|---|---|---|
| NC, BK | 0.10 | V-0 | 4 | 1 | 130 | 130 | 130 |
| | 0.75 | V-0 | 3 | 1 | 130 | 130 | 130 |
| | 1.5 | V-0 | 2 | 1 | 130 | 130 | 130 |
| | 3.0 | V-0 | 1 | 1 | 130 | 130 | 130 |

Comparative Tracking Index (CTI): 4

Inclined Plane Tracking (IPT): -

Dielectric Strength (kV/mm): -

Volume Resistivity ($10^x$ ohm-cm) : -

High-Voltage Arc Tracking Rate (HVTR): 3

High Volt, Low Current Arc Resis (D495): 4

Dimensional Stability (%): -

ANSI/UL 94 small-scale test data does not pertain to building materials, furnishings and related contents. ANSI/UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances, where the acceptability of the combination is determined by UL.

Report Date:2013-07-31
Last Revised:2013-08-07



## IEC and ISO Test Methods

| Test Name | Test Method | Units | Thickness Tested (mm) | Value |
|---|---|---|---|---|
| Flammability | IEC 60695-11-10 | Class (color) | 0.10 | V-0 (NC, BK) |
| | | | 0.75 | V-0 (NC, BK) |
| | | | 1.5 | V-0 (NC, BK) |
| | | | 3.0 | V-0 (NC, BK) |
| Glow-Wire Flammability (GWFI) | IEC 60695-2-12 | C | - | - |
| Glow-Wire Ignition (GWIT) | IEC 60695-2-13 | C | - | - |
| IEC Comparative Tracking Index | IEC 60112 | Volts (Max) | - | - |
| IEC Ball Pressure | IEC 60695-10-2 | C | - | - |
| ISO Heat Deflection (1.80 MPa) | ISO 75-2 | C | - | - |
| ISO Tensile Strength | ISO 527-2 | MPa | - | - |
| ISO Flexural Strength | ISO 178 | MPa | - | - |
| ISO Tensile Impact | ISO 8256 | $kJ/m^2$ | - | - |
| ISO Izod Impact | ISO 180 | $kJ/m^2$ | - | - |
| ISO Charpy Impact | ISO 179-2 | $kJ/m^2$ | - | - |

# PRODUCT SPECIFICATION OF Oupiin

Material Signal Terminal : Copper Alloy (Phosphor Bronze C5210)

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## REPORT OF MATERIAL TEST
## 材料測試報告

ISO 9001
ISO/TS 16949
IECQ QC080000
ISO 14001
OHSAS 18001 & TOSHMS

No.: 251197 DATE: MAY.21,2013

Customer 顧客名稱： 名佳利金屬工業股份有限公司
Commodity 商品名稱： C5210R PHOSPHOR BRONZE FOR SPRING ( EH )
Applied Standard 引用標準： CNS 9503 Phosphor Bronze Sheets, Plates and Strips

| | | | |
|---|---|---|---|
| Manufacture No. | 銅捲製號 | | 24M007A |
| (Specification) | 產品規格 | Standard | |
| Thickness (mm) | 產品厚度 | | 0.300 |
| Width (mm) | 產品寬度 | | 622.000 |
| Length (mm) | 產品長度 | | |
| (Chemical Analysis Test) | 化性測試 | | |
| P(%) | 磷 | 0.030 - 0.350 | 0.128 |
| Sn(%) | 錫 | 7.000 - 9.000 | 7.938 |
| Cu+Sn+P(%) | 銅錫磷 | min. 99.700 | 99.942 |
| (Mechanical & Physical Test) | 物性測試 | | |
| Thickness Test (mm) | 厚度測試 | - | 0.292 |
| Width Test (mm) | 寬度測試 | -0.10 +0.00 | GOOD |
| Tensile Strength (kgf/mm2) | 抗拉強度 | min. 65.00 | 72.26 |
| Elongation (%) | 伸長率 | min. 10.00 | 23.54 |
| Hardness Test (Hv) | 硬度 | 200.0 - 230.0 | 224.0 - 226.0 |
| Grain Size (mm) | 結晶粒度 | - | 0.010 |
| Electric Conductivity (%) | 導電率 | - | 12.10 |
| (Other Information) | 其他資訊 | | |
| Delivery No. | 出貨單號 | | |

MINCHALI

QA Supervisor: 周建偉 A980301 S1800901ME

MINCHALI METAL INDUSTRY CO., LTD.
名佳利金屬工業股份有限公司
11,Pei Yuan Road, Chung Li City, Taiwan, R.O.C.
Tel : (03)4526141-5 (03)4526017-9
Fax : (03)4529112 (03)4629625

# PRODUCT SPECIFICATION OF Oupiin

Material Power Contact : High Conductivity Copper(C19210)

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昆山维迎达电子材料有限公司

KUNSHAN WEI YING DA ELECTRONIC MATERIAL CO., LTD.

## 产品质量证明书

CERTIFICATE OF QUALITY

| | | | |
|---|---|---|---|
| 客户名称 Customer | 欧品 | 生产日期 Date | 2016-04-23 |
| 品名 Commodity | C19210 | 状态 State | H |
| 执行标准 Excutive Standard: | | JISH3110-2012 | |

| 尺寸公差 Size & Tolerance （MM） | | |
|---|---|---|
| 规格 Specification | 厚度公差 Thickness Tolerance | 宽度公差 Width Tolerance |
| 0.50*25.50 | ±0.01 | +0~-0.1 |

| 化学成份 Chemical Composition （%） | | | | | | | |
|---|---|---|---|---|---|---|---|
| 元素 Element | 铜 Cu | 锡 Sn | 磷 P | 锌 Zn | 铁 Fe | 铅 Pb | 铜 Cu+锌 Zn+铁 Fe |
| CAS.NO | 7440-50-8 | 7440-31-5 | 7723-14-0 | 7440-66-6 | 7439-89-6 | 7439-92-1 | --- |
| 含量标准 Standard | ≥99.0 | / | 0.015~0.04 | / | 0.05-0.015 | / | ≥99.80 |
| 实测值 Value | 余量 | / | 0.0330 | / | 0.1152 | / | |

| 机械性能 Mechanical Properties | | | | | |
|---|---|---|---|---|---|
| 项目 Item | 抗拉强度 Tensile strength （Mpa） | 延伸率 Elongatin （%） | 硬度 Hardness （HV） | 粗糙度 Surface Roughness （μm） | 导电率 Electrical Conduc （%IACS） |
| 标准 Standard | ≥390 | ≥4 | 115-135 | --- | ≥85 |
| 实测值 Value | 430 | 7.00 | 126 | 0.09 | 89 |

审核：樊美娟

制表：郑素群