



PRODUCT SPECIFICATION OF Oupiin

PRODUCT SPECIFICATION

產品規格書

產品名稱 Description	產品料號 Part No.	圖號 Drawing No.
QSFP+ Connector 0.80mm(0.0315") and Cage	8953-38CxxPDT-x	8953-D0000-xxx
	8953-1x4PP010A	8953-D0000-004

PRODUCT NAME 產品名稱	DOCUMENT No.: 文件編號	Rev. 版本	OUPIIN
QSFP+ Connector 0.80mm(0.0315") and Cage	8953spec	B	歐品電子
	Approved 核准	Checked 審核	Prepared 制作
	QA. Chief	Joseph Yen	11.15/2017



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1. COPE 適用範圍

This product specification defines the product performance and the test methods to ascertain the performance of the **QSFP+ Connector 0.80mm (0.0315") and 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 **QSFP+ Connector 0.80mm (0.0315") and 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
EN/ISO5961	Determination of total lead & cadmium content 總鉛和總鎘含量測定
EN1122	Determination of total lead & cadmium content 總鉛和總鎘含量測定
EN13346	Determination of heavy metals content 重金屬含量測定
EPA3052	Determination of total lead & cadmium content 總鉛和總鎘含量測定

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。



PRODUCT SPECIFICATION OF Oupiin

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: 0.5A.

額定電流: 0.5A.

rating voltage: 30V AC/DC RMS.

額定電壓: 30V AC/DC RMS.

3.7 STORAGE AND OPERATING TEMPERATURE 存貯與使用溫度

Operating temperature range: $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$, including terminal temperature rise for rating current.

Nonoperating temperature range: $0^{\circ}\text{C} \sim +40^{\circ}\text{C}$, Humidity: 80%RH under

溫度範圍： $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$ ，包含接觸端子的額定電流溫升，

存貯範圍： $0^{\circ}\text{C} \sim +40^{\circ}\text{C}$ ，濕度：80%RH 以下。

4. Environmental 環境要求

4.1. SOLDERABILITY 可焊性

Connectors meet solder-ability to MIL-STD-202, and 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。

4.2.1. INFRARED REFLOW 紅外線回流焊接

Each cycle consists of three consecutive phases, as shown in **Table II**.

每個焊接週期包括三個連續的階段，見附表二。

4.2.2. Preheat 預熱

Increase in temperature not to exceed 3°C per second.

溫度增加速度不超過 3°C /秒。

4.2.3. Soldering 焊接

Maximum allowable time above reflow temperature of 150°C is 370 seconds. Maximum



PRODUCT SPECIFICATION OF Oupiin

temperature in this interval is 260°C, duration is 20~40 seconds.

回流焊溫度在 150°C 以上的時間最長不超過 370 秒。最高溫度 260°C 時間 20~40 秒。

4.2.4. Cool Down 冷卻

Cool down shall not exceed 6°C per second.

冷卻速度不超過 6°C/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為準。

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述的機械，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 20cycles 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 20 次，每組測試至少有 5 個樣品。



PRODUCT SPECIFICATION OF Oupiin

Table I: Test Requirements and Methods

附表一：測試要求與方法

Items 項目	Requirements 要求	Test Methods 測試方法
1. Confirmation of Product 產品確認	Product shall be conforming to the requirements of applicable product drawing. 產品必須符合相關產品圖面的要求。	Visually, dimensions and functionally inspected per applicable product drawing. 依相關產品圖面，檢查產品的外觀、尺寸及功能。
2. Contact Resistance 接觸阻抗	20 mΩ Max. initial. 初始狀態最大 20 mΩ	Subject mated contacts assembled in housing to closed circuit of 10mA max. EIA-364-6 所述固定在外殼裏的端子連結到一個封閉回路中測試，電流 10mA 最大。 適用：EIA-364-6
3. Insulation Resistance 絕緣阻抗	1000 mΩ Min. 最小 1000 mΩ。	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. EIA-364-21 Condition B (100V DC±10%). 測試產品相鄰端子間以及端子與接地間的電阻 適用：EIA-364-21 條件 B (100V DC±10%)。
4. Dielectric Withstanding Voltage 耐電壓	300 Volts DC applied between adjacent contacts for 1 minute, No breakdown or flashover 必須承受測試電壓 300V DC，時間 1 分鐘，不能有擊穿或者火花。	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. EIA 364-20。 對產品相鄰端子間以及端子與接地間加載電壓，並測試其漏電流。適用：EIA 364-20。
5. Test temperature rise for rating current 溫升測試	The temperature rise above ambient shall not exceed 30°C 溫度不能超過 30 °C°。 Ambient conditions - Still air 25°C 周圍環境溫度 25°C°。	Mate connectors: measure the temperature rise at the rated current after 96 hours (45 minutes ON and 15 minutes OFF per hour). Testing as required. 對配连接器：測量 96 小时后额定电流的温升（每小时 45 分钟开，每小时 15 分钟关）。按 要求测试
6. Differential Impedance 差分阻抗	No significant electrical change 没有明显的电性变化	Rise time of 70ps (20% to 80%) (EIA 364-108) 上升时间 70ps(20% 到 80%) (EIA 364-108)



PRODUCT SPECIFICATION OF Oupiin

<p>7. Durability 耐久性</p>	<p>Resistance: 40 mΩ Max. after testing. 測試後接觸阻抗最大 40 mΩ。</p>	<p>Repeat mate and unmated for connector 100 cycles, at a speed of 25.4mm per minute. EIA-364-09 重復進行配合產品 100 次插拔 · 速度每分鐘 25.4mm。適用：EIA-364-09</p>
<p>8. Mechanical Shock 機械沖擊</p>	<p>No electrical discontinuity greater than 1 μs shall occur, Contact Resistance: 40 mΩ Max. 不允許出現超過 1 μs 的瞬間斷開 · 接觸阻抗最大 40mΩ。</p>	<p>Accelerate Velocity:490m/s²; Waveform: Half-sine shock plus; Duration:11msec; 3drops each to normal and reversed directions of X,Y and Z axes; 速度 490m/s²; 半正弦波; 持續 11 毫秒; ±X, ±Y, ±Z, 方向各 3 次;</p>
<p>9. Mating /Un-mating Force 插入力/拔出力</p>	<p>Mating force 40N Max. Un-mating force:30N Max 插入力最大 40N。 拔出力最大 30N</p>	<p>At a speed of 25.4±3 mm/minute, apply axial insert the mating part into fully or pull out from the subject product. 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。</p>
<p>10. Vibration 振動</p>	<p>No electrical discontinuity greater than 1 μs shall occur, Contact Resistance: 40 mΩ Max. 不允許出現超過 1 μs 的瞬間斷開 · 接觸阻抗最大 40mΩ。</p>	<p>Mate samples subjected to 3.10G rms between 20 and 500 Hz for 15 minutes in each of 3 mutually perpendicular planes EIA 364-28, Test Condition: VII 將樣品放在測試條件為：20~500Hz · 3.10G rms 的測試條件下 · 3 個方向 · 每方向持續 15 分鐘。適用：EIA-364-28, 測試條件 VII。</p>
<p>11.Latch Strength 摺鎖力</p>	<p>1. 90N Minimum 2. No physical damage to the module or cage. 1. 最小 90N。 2. 模块或屏蔽殼没有物理损坏。</p>	<p>Mate connectors and place an axial load on the cable connector. 连接连接器并在电缆连接器上放置轴向负载。</p>
<p>12.Cage Press Fit Insertion & Withdrawal Force 屏蔽殼魚眼插入和拔出 PCB 板孔的力量</p>	<p>1. 550N Max. Insertion per press-fit section. 2. 114N Min. Extraction per press-fit section. 1. 單隻魚眼插入力最大 550N。 2. 單隻魚眼拔出力最小 114N。</p>	<p>Place axial load on the cage to measure the insertion and withdrawal force of the press-fit sections into and out of the PCB. 將轴向負荷放在屏蔽殼上 · 來測量魚眼插入和拔出 PCB 的插入力和拔出力。</p>



PRODUCT SPECIFICATION OF Oupiin

<p>13. Thermal Shock 熱衝擊</p>	<p>After testing, no damage, Contact Resistance 40 mΩ Max. Dielectric Strength should be OK, Insulation Resistance should be 1000 mΩ Min. 測試後產品無損壞·接觸阻抗最大 40 mΩ ; 耐電壓測試 OK·絕緣阻 抗 最小 1000 mΩ 。</p>	<p>Temperature range from $-55\pm 3^{\circ}\text{C}$ to $+85\pm 2^{\circ}\text{C}$. Start from -55°C, after 30 minutes, change to $+85\pm 2^{\circ}\text{C}$; change time is no more than 5 minutes, total 10 cycles. EIA 364-32C, condition I 溫度變化範圍：$-55\pm 3^{\circ}\text{C}\sim +85\pm 2^{\circ}\text{C}$。從 - 55°C 開始·30 分鐘後換到 $+85^{\circ}\text{C}$·轉換時間 不超過 5 分鐘·共 10 個循環。適用：EIA 364- 32C·條件 I。</p>
<p>14.High Temperature Life 高溫老化</p>	<p>After testing, no damage, Contact Resistance 40 mΩ Max. Dielectric Strength should be OK, Insulation Resistance should be 1000 mΩ Min. 測試後產品無損壞·接觸阻抗最大 40 mΩ ; 耐電壓測試 OK·絕緣阻 抗 最小 1000 mΩ 。</p>	<p>70°C, for 500 hours. EIA-364-17 Method A 產品置於 70°C 連續 500 小時。 適用：EIA-364-17。</p>
<p>15. Cyclic Temperature and Humidity 恆溫恆濕</p>	<p>After testing, no damage, Contact Resistance 40 mΩ Max. Dielectric Strength should be OK, Insulation Resistance should be 1000 mΩ Min. 測試後產品無損壞·接觸阻抗最大 40 mΩ ; 耐電壓測試 OK·絕緣阻 抗 最小 1000 mΩ 。</p>	<p>Subject product to $25\sim 65^{\circ}\text{C}$, 80-100%.R.H 10Cycles. EIA-364-31B 產品置於 $25\sim 65^{\circ}\text{C}$,相對濕度：90-95%,循環 10 次,適用：EIA-364-31B</p>
<p>16. Salt Spray 鹽霧</p>	<p>After testing, no damage, Contact Resistance 40 mΩ Max. Dielectric Strength should be OK, Insulation Resistance should be 1000 mΩ Min. 測試後產品無損壞·接觸阻抗最大 40 mΩ ; 耐電壓測試 OK·絕緣阻 抗 最小 1000 mΩ 。</p>	<p>$5\pm 1\%$ salt concentration(PH=7.0) ,48 hours $35\pm 2^{\circ}\text{C}$:MIL-STD-202, Method 101, condition B. 鹽水濃度 $5\pm 1\%$(PH=7.0),時間 48 小時·溫度 $35\pm 2^{\circ}\text{C}$。適用：MIL-STD-202·方法 101· 條件 B。</p>
<p>17. Solder-ability 可焊性</p>	<p>Solderable area shall have a minimum of 95% solder 焊錫區域至少應該有 95%的覆蓋面 積</p>	<p>Immerse in molten solder at 245°C at a rate of 25.4mm per second. Solder Duration: 4-6 seconds; EIA-364-52 將產品依 25.4mm/分鐘的速度放入 245°C的錫 液裡面·時間：4-6 秒 適用：EIA-364-52</p>



PRODUCT SPECIFICATION OF Oupiin

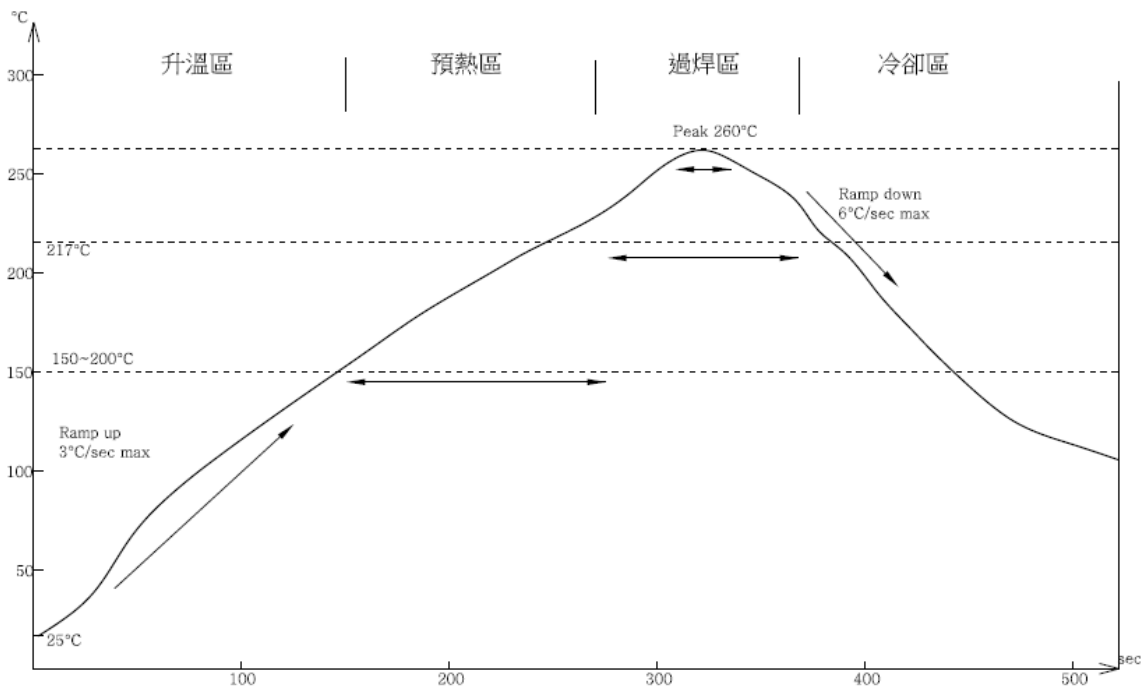
Table II: Reflow Soldering Profile

附表二：回流焊接曲線圖

Lead-free reflow profile requirements:

無鉛回流焊接曲線

Parameter 参数	Reference 参考	Specification 规格
Ramp-up 升溫區	25°C ~150°C	3°C/S Max
Pre-heating 預熱區	150°C ~200°C	60~180sec
Reflow 過焊區	217°C	60~150sec
Peak Temp(T_p)	260-/+5°C	20~40sec
Time 25°C to T_p	25°C ~ Peak Temp.	8 minutes maximum
Cooling 冷卻區	Peak Temp.~150°C	-6°C/S(Max)



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 largely dependent on the reflow equipment.

這個曲線圖是評估元件器件焊接抗熱的基本要求。應用在對焊接中的熱傳遞方式是熱氣對流。達到特定曲線圖地實際溫度主要依賴與回流焊接設備。



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Material Housing : 069-LCP(Black)

[SGS Test Report Click here](#)

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長春人造樹脂廠股份有限公司

台北市 10477 松江路三 0 一號七樓

CHANG CHUN PLASTICS CO.,LTD.

CABLE ADDRESS :
ONGLITE TAIPEI
TLX:22535 LONGLITE

No.301, SONGKIANG ROAD, 7TH FL.,
TAIPEI, 10477 TAIWAN

TEL: (02)2503-8131 (REP)
FAX: (02)2503-3378

Technical Data

Liquid Crystalline Polymer Compound

ONGLITE® LCP 270B3G / 270N3G

LCP-270B(N)3G is liquid crystalline polymer which contains 30% glass fiber.

LCP-270B(N)3G has advantages of high heat resistance, strength and good flowability.

Physical Properties :

Items	Unit	Test Method	270B3G* 270N3G
Features	heat resistance/low warpage		
Filler	%	---	Glass Fiber
Filler Content		ASTM	30
Specific Gravity	---	D792	1.62
Water Absorption	%	D570	0.04
Shrinkage	MD	CCP method	0.19
	TD		0.39
Tensile Strength(RT)	MPa	D638	122
Tensile Elongation(RT)	%		1.8
Flexural Strength (RT)	MPa	D790	190
Flexural Modulus (RT)	GPa		12.5
Izod Impact (3.0t/w notched)	J/m	D256	110
HDT (264 psi)	°C	D648	270
Dielectric Strength	KV/mm	D149	19
Arc Resistance	sec	D495	150
UL-94(NC, BK)	Rating	UL94	V-0
Tracking Resistance (CTI)	V	D257	125
Dielectric Constant / Dk	---	10 ⁶ Hz (1 MHz)	4.5
Dielectric Tangent / Df	---	10 ⁶ Hz (1 MHz)	0.036

* Typical data : Not to be constructed as specification

LCP-270B(N)3G B : Black N : Natural color



PRODUCT SPECIFICATION OF Oupiin

Material Housing :UL

UL iQ™ for Plastics

Page 1 of 1

Component - Plastics

E59481

CHANG CHUN PLASTICS CO LTD

7TH FL, 301 SONGKIANG RD, TAIPEI 104 TW

270(X1)3G

Liquid Crystal Polymer (LCP), "LONGLITE", furnished as pellets

Color	Min Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
BK	0.3	V-0	4	0	130	130	130
	1.0	V-0	2	0	130	130	130
	3.0	V-0	0	0	130	130	130

Comparative Tracking Index (CTI): **4**

Inclined Plane Tracking (IPT): -

Dielectric Strength (kV/mm): -

Volume Resistivity (10⁸ ohm-cm) : -

High-Voltage Arc Tracking Rate (HVTR): **2**

High Volt, Low Current Arc Resis (D495): **5**

Dimensional Stability (%): -

(X1) - Maybe replace by one letter N representing Natural color or B representing Black color

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:2013-07-12

Last Revised:2013-07-12

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IEC and ISO Test Methods

Test Name	Test Method	Units	Thickness Tested (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	0.3	V-0 (BK)
			1.0	V-0 (BK)
			3.0	V-0 (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	-	-

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Material Contact : Copper Alloy (C7025)

[SGS Test Report Click here](#)

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INSPECTION REPORT

鎧 蔚 企 業 有 限 公 司

METALEX ENTERPRISE CO., LTD

NO. 108-3 Sec. 1, Guangfu R.d., Sanchong City,

Taipei County 24158, Taiwan

TEL : +886-2-2278-1989 FAX : +886-2-2999-9687

客戶名稱 CUSTOMER	歐品電子有限公司
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品名 PRODUCT	C7025-TM03	母料號碼 LOT NO	A121120	日期 DATE	2012/11/20
規格 SIZE	0.2X11.5	重量 QUANTITY	297.7 KG	序號	121100019

化學成份 CHEMICAL COMPOSITION

成分符號 ELEMENT	Cu	FE	PB	MG	NI	ZN	MN	SI			
規格 SPEC (%)	MIN			0.05	2.2			0.25			
	MAX		0.2	0.05	0.3	4.2	1	0.1	1.2		
分析值 ANALYSIS VALUE	balance	0.0058	0.0025	0.075	2.544	0.0186	0.0021	0.516			

機械特性試驗 MECHANICAL TESTING

項目 ITEM	抗拉強度 Tensile Strength N/mm ²	屈服強度 Yield Strength N/mm ²	伸長率 Elongation %	導電率 Electrical Conductivity %IACS	硬度 Hardness (for reference only) HV
規格 SPEC	MIN	690	655	5	40
	MAX	800			260
實測值 MEASURED VALUE	743-761	701-718	11.0-11.3	45	237-245

尺寸量測 GEOMETRICAL DIMENSIONS

項目 ITEM	厚度 Thickness (mm)	寬度 Width (mm)	粗糙度 Ra um		
規格 SPEC	MIN	0.190	11.4		
	MAX	0.210	11.5	0.15	
實測值 MEASURED VALUE	0.201-0.202	11.44	0.09		

備註 REMARKS

	責任者	品質擔當者
	郭怡菁	Ricky 2012.12.25 康建邦



PRODUCT SPECIFICATION OF Oupiin

Material Spring : Copper Alloy (C7521)

[SGS Test Report Click here](#)

如需 SGS 測試報告請點選此處



GUO CHING PRECISION CO., LTD

試驗成績表

REPORT OF MATERIAL TEST

客戶: 弘振企業股份有限公司	國慶精密股份有限公司
Customer	桃園縣龜山鄉大崗村大湖路2-17號
品名: C7521-H	尺寸: 0.250x 66.0x C
Product	Size
料號: 960424013	日期: 96/10/31
Lot No	Date
	TEL: 03-2115391-8
	FAX: 03-2115399

化學成份

CHEMICAL COMPOSITION

元素 ELEMENT	Ni	Cu	Zn
規範 MAX	19.500	66.000	-
SPEC MIN	16.500	62.000	-
分析值 ANALYSIS VALUE	16.940	65.000	17.711

試驗

TEST RESULT

項目 ITEM	抗張 Tensile Strength kgf/mm2	伸長 Elongation %	硬度 Hardness Test o	結晶粒度 Grain Size µm	導電率 Electric Conductivity
規範 CONDITION		-	HV		
SPEC MAX	73.000	-	200.000	-	-
MIN	63.000	3.000	170.000	-	-
測驗值 MEASURE-MENT VALUE	63.329	7.400	196.000	-	-



Countermeasure for
Discoloration
變色對策品

檢驗合格

Approved by:



Checked by:





PRODUCT SPECIFICATION OF Oupiin

Material Terminal : Copper Alloy (Phosphor Bronze C5210)

[SGS Test Report Click here](#)

如需 SGS 測試報告請點選此處



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/mm ²)	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 METAL INDUSTRY CO., LTD.

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