



## PRODUCT SPECIFICATION OF OUPIIN

# PRODUCT SPECIFICATION

## (產品規格書)

### Ordering information

2141-	1X	XX	G	00	S	A
Series	1: Single Row 2: Double Row	No. of Pin Count 2~40	G: Gold Plated	00:Gold Flash 10:10 μ” 15:15 μ” 30:30 μ”	S: Straight	A: Tray Package

PRODUCT NAME (產品名稱)	DOCUMENT No.: (文件編號)	Rev. (版本)	OUPIIN
P.C.B Socket  2.0mm x 2.0mm  (RoHS)	2141spec	C(I800)	(歐品)
	Approved (核準)	Checked (審核)	Prepared (製作)
	Q.A. Section Chief	Jack Hsing	2020.9.14



# PRODUCT SPECIFICATION OF OUPIIN

## 1. SCOPE (範圍)

This product specification defines the product performance and the test methods to ascertain the performance of the P.C.B Socket 2.0mm\*2.0mm, which is designed and manufactured by Oupiin Electronic Co.,Ltd.

(本產品規格書規定了由歐品電子有限公司生產的 P.C.B Socket 2.0mm\*2.0mm型連接器,產品的特性及測試方法.)

## 2. REFERENCE DOCUMENTS (參考文件)

MIL-STD-1344A 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)

## 3. FEATURE & DIMENSIONS (特徵及尺寸)

### 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考圖面.)

### 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 參考圖面.)

### 3.3. BILL OF MATERIAL (材料清單)

Harmful material control follow the requirement of RoHS. The bill of material and product number 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考附件.)

### 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。)



## PRODUCT SPECIFICATION OF OUPIIN

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

Rating current is 1.0 A, rating voltage is 150V DC/AC RMS.

額定電流 1.0 A，額定電壓 150V DC/AC RMS。

### 3.7. STORAGE AND OPERATING TEMPERATURE 儲存與使用溫度

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

溫度範圍：-55°C~+105°C，包含接觸端子的額定電流溫升。

## 4. ENVIRONMENTAL (環境要求)

### 4.1. SOLDERABILITY (可焊性)

Connectors meet solder ability to MIL-STD-202F. Finish shall be free of contaminants.

(產品可焊性符合 MIL-STD-202F 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)

#### WAVE SOLDERING (波峰接)

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)

The steady temperature of the preheat zone is 90~125°C.

(預熱區最終溫度控制在90~125°C)

#### 2. Soldering (焊接)

To avoid the secondary tin-melting, the temperature on PCB upper surface is 160°C Max. for products with lead, or 200°C Max. for lead-free products. The temperature of the PCB bottom surface shall not be exceed 100°C more than the temperature of the PCB upper surface. The peak temperature is during 220~245°C for products with lead, or 235~260°C for lead-free products. The tin dip time is duration for 3~5 seconds.

(有鉛產品板面溫度不得超過160°C，無鉛產品板面溫度不得超過200°C，以防止貼片零件二次熔錫。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220~245°C，無鉛產品控制在235~260°C。浸錫時間控制在3~5秒。)

#### 3. 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.)



## **PRODUCT SPECIFICATION OF OUPIIN**

### **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 10cycles of durability. Each group shall be containing 5 test samples.

(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，每組測試有5個樣品)



## **PRODUCT SPECIFICATION OF OUPIIN**

**Table I: Test Requirements and Procedures**

(附錄一:測試要求)

Items (項目)	Requirements (要求)	Test Methods (檢測方法)
1. Confirmation of Product (產品確認)	Product shall be conforming to the requirements of applicable product drawing. (產品必須滿足相關檔的規定)	Check the dimensions and functions per applicable product drawing in your eyes. (目視，尺寸及功能依產品圖面檢查)
2. Contact Resistance (接觸阻抗)	20 m $\Omega$ Max. initial (最大.初態)	Subject mated contacts assembled in housing to closed circuit of 100 mA max. at open circuit voltage of 20 mV max. (所述固定在外殼裏的端子連結到一個封閉迴路中測試：電流 100 mA，電壓 20 mV max.)
3. Insulation Resistance (絕緣阻抗)	1000 M $\Omega$ Min. (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 $\pm$ 10%). (測試產品端子間以及端子與接地間的電阻，適用：MIL-STD-202,方法 302，條件 B ) (500V DC $\pm$ 10%)
4. Dielectric Strength (耐電壓)	Connector must withstand test potential of 500 V AC for 1 minute. Current leakage must be 0.5 mA max. (樣品必須承受測試電壓 500V AC，時間一分鐘，漏電流不大於 0.5 mA.)	MIL-STD-202, Method 301. Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. (測試產品端子間以及端子與接地間的電壓。)
5. Durability (耐久性)	Contact Resistance: 30 m $\Omega$ Max. after testing. (測試後接觸阻抗最大 30m $\Omega$ )	The sample should be mounted the tester and fully mated and unmated 100 cycles specified at the rate of 10 cycles / min (重復進行配合產品 100 次插拔.)
6. Connector Mated / Unmated Force (產品插拔力)	Mated force : 1.0 N max. per contact Unmated force : 0.25 N min. per contact 插入力: 1.0 N 最大 拔出力: 0.25 N 最小	Measure force necessary to unmated between the counterparts connectors.. (軸向力以 25 $\pm$ 3mm/分的速度從塑膠本體對插後拔出)



## **PRODUCT SPECIFICATION OF OUPIIN**

<p>7. Thermal shock (熱衝擊)</p>	<p>After testing, no damage, Contact Resistance 30 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: 30 mΩ最大; 耐電壓測試 OK, 絕緣阻抗 1000MΩ最小)</p>	<p>MIL-STD-202, Method 107D, condition A. Temperature range from -55°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. (溫度變化範圍: -55°C ~ +85°C; 從 -55°C 開始, 30 分鐘後換到+85°C; 轉換時間不超過 30 秒; 共 5 個循環。)</p>
<p>8. Humidity (恆溫恆濕)</p>	<p>After testing, no damage, Contact Resistance 30mΩ max.. Dielectric Strength should be OK, Insulation Resistance should be 1000MΩ min. (測試後,產品無損壞, 接觸阻抗: 30 mΩ最大; 耐電壓測試 OK, 絕緣阻抗 1000MΩ最小)</p>	<p>Temperature :40±2°C 96 hours. (溫度: 40±2°C 96 小時) Relative Humidity : 90-95%; (相對濕度 : 90-95%; ) Duration :96 Hours. MIL-STD-202, Method 108, (時間: 96 小時; MIL-STD-202, 方法 108。)</p>
<p>9.High temperature (高溫)</p>	<p>After testing, no damage, Contact Resistance 30 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: 30 mΩ最大; 耐電壓測試 OK, 絕緣阻抗 1000MΩ最小)</p>	<p>Subject product to 105±2°C for 96 hours continuously. MIL-STD-202, Method 108. (產品置於 105±2°C 連續 96 小時, 適用 MIL-STD-202, 方法 108。)</p>
<p>10. Solder ability (可焊性)</p>	<p>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. (樣品在測試完成後, 在放大倍數為 10 倍的顯微鏡下, 檢查外觀損壞如: 小孔, 空焊, 外觀粗糙度)</p>	<p>Soldering time: 3 to 5 Seconds (焊接時間: 3~5 秒) Soldering Temperature: 255±5°C. (焊接溫度: 255±5°C.)</p>



# PRODUCT SPECIFICATION OF OUPIIN

Material Housing : 069-LCP (Black)

[SGS Test Report Click here](#)

[如需 SGS 測試報告請點選此處](#)

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 :  
LONGLITE TAIPEI  
TLX:22535 LONGLITE

No.301, SONGKIANG ROAD, 7<sup>TH</sup> FL.,  
TAIPEI, 10477 TAIWAN

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

## Technical Data

**LONGLITE®**

### Liquid Crystalline Polymer Compound LCP-270B3G/ LCP-270N3G

LCP-270B(N)3G is liquid crystalline polymer which contains glass fiber filler. LCP-270B(N)3G has advantages of high heat resistance, strength and good flowability.

#### Physical Properties :

Items	Unit	Test Method	LCP-270B3G* LCP-270N3G
Features	heat resistance/low warpage		
Filler	%	---	Glass Fiber
Filler Content		ASTM	30
Specific Gravity	---	D792	1.62
Water Absorption	%	D570	0.042
Shrinkage	MD	CCP method	0.20 0.40
	TD		
Tensile Strength(RT)	MPa	D638	130 2.0
Tensile Elongation(RT)	%		
Flexural Strength (RT)	MPa	D790	185 14.5
Flexural Modulus (RT)	GPa		
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

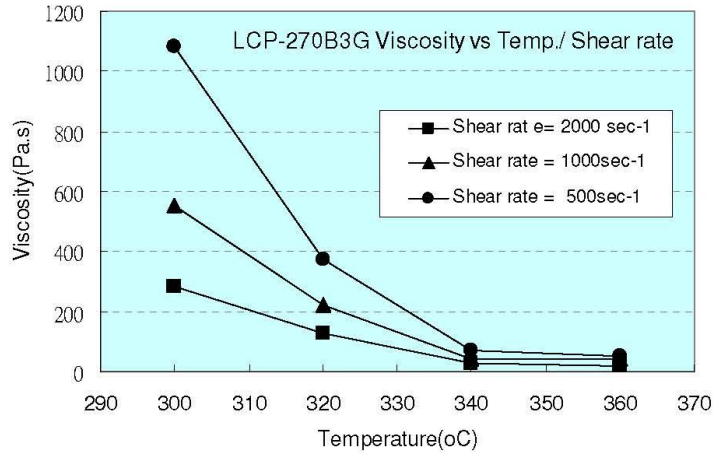
\* Typical data : Not to be constructed as specification

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



# PRODUCT SPECIFICATION OF OUPIIN

## Viscosity Property :



## Molding Condition :

To avoid the blister problem, Drying the LCP under 150°C x6~12hrs condition before molding.

Item	Unit	LCP-270B(N)3G
<b>Cylinder Temperature</b>		
Nozzle	°C	340±10
Front (Zone1)	°C	335±10
Middle (Zone2)	°C	320±10
Rear (Zone3)	°C	300±10
<b>Mold Temperature</b>		
Moving	°C	80 (60~120)
Fixed	°C	80 (60~120)
<b>Injection Condition</b>		
Injection Pressure	Kg/cm2	1000 (1000-1400)
2nd Injection Pressure	Kg/cm2	500 (300-700)
Screw Pressure	rpm	60 (40-120)

## Package

25KG net paper bag lined with aluminum foil.

## Storage

To avoid the wet and direct sun-light storage environment.





# 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 (10<sup>8</sup> 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

© 2013 UL LLC



### 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 <sup>2</sup>	-	-
ISO Izod Impact	ISO 180	kJ/m <sup>2</sup>	-	-
ISO Charpy Impact	ISO 179-2	kJ/m <sup>2</sup>	-	-

© 2013 UL LLC



# PRODUCT SPECIFICATION OF OUPIIN

Material Contact : Copper Alloy (Phosphor Bronze)

[SGS Test Report Click here](#)

[如需 SGS 測試報告請點選此處](#)



## REPORT OF MATERIAL TEST

DATE: FEB.15,2006

Customer: 歐品電子有限公司	Commodity: C 5191 R PHOSPHOR BRONZE STRIP ( H )	台正字第 3545 號
Applied Standard: CNS 9503 Phosphor Bronze Sheets, Plates and Strips		

Chemical Analysis Test										
Work No.	Size of Product			P(%)	Sn(%)	Cu+Sn+P(%)				P.O. NUMBER
	Thickness (mm)	Width (mm)	Length (mm)							
	Standard									
				0.030 - 0.350	5.50 - 7.00	min. 99.50				
4CC135A	0.200	305.000		0.164	5.829	99.962				
4CC135B	0.200	305.000		0.164	5.829	99.962				

Mechanical & Physical Test										
Work No.	Size of Product			Dimension Test		Tension Test		Hardness Test HV	Grain Size (mm)	Electric Conductivity (%)
	Thickness (mm)	Width (mm)	Length (mm)	Thickness (mm)	Width (mm)	Tensile Strength (kgf/mm <sup>2</sup> )	Elongation (%)			
	Standard			-	(-) 0.10 - (+) 0.00	min. 58	-			
								min. 170	-	-
4CC135A	0.200	305.000		6000.	6000.	60.13	26.54	192.0 - 193.0	0.010	14.1
4CC135B	0.200	305.000		6000.	6000.	60.13	26.54	192.0 - 193.0	0.010	14.1

QC Supervisor

鄭建益

**MINCHALI METAL INDUSTRY CO., LTD.**  
 11, Pei Yuan Road, Chung Li City, Taiwan, R. O. C.  
 Tel : (03)4526141-5 (03)4526017-0