



# PRODUCT SPECIFICATION

## (產品規格書)

### Ordering information

4573- 15 MT D1 T

Series No. of Pin Count MT: Matte Tin Plated D1:SMD Side Entry (Right Angle) D3:SMD Top Entry (Straight) U: Tube Package T: Tape & Reel Package

02~15

A2:SEP.04/2012. B3:DEC.14/2016(塑料連結)

B1:MAY.30/2013(產品轉無鹵變更塑料)

B2:JUN.13/2013(無鹵產品變更料號)

PRODUCT NAME (產品名稱)	DOCUMENT No.: (文件編號)	Rev. (版本)	OUPIIN
Wafer 1.25mm	4573spec-D	B3	(歐品)
SMD Type	Approved (核準)	Checked (審核)	Prepared (製作)
(RoHS)	Q.A. Section Chief	Joseph Yen	DEC.14/2016



# PRODUCT SPECIFICATION OF OUPIIN

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# 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 Wafer 1.25mm SMD Type, 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 Wafer 1.25mm SMD Type 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-202F	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 1.0A, rating voltage is 125V DC/AC RMS.

額定電流 1.0A，額定電壓 125V DC/AC RMS。

### 3.7 OPERATING TEMPERATURE 使用溫度

Temperature range: -40°C~+85°C, including terminal temperature rise for rating current.

溫度範圍：-40°C~+85°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)

#### INFRARED REFLOW (紅外線回流焊接)

Three cycles. Each cycle consisting of three consecutive phased.

(三個週期，每個週期包括三個連續的階段完成；)

#### 1. Preheat (預熱)

Increase in temperature not to exceed 4°C per second.

(溫度增加不超過 4°C /秒,)

#### 2. Soldering (焊接)

Maximum allowable time above reflow temperature of 150~200°C is 90~120 seconds. Maximum temperature in this interval is 250°C, not to exceed 5 seconds.

(回流焊溫度150~200°C時最長不超過90~120秒。最高溫度250°C時間不超過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。)

## 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 5 cycles 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5次，每組測試有5個樣品；)

**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 mΩ 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回路中測試：電流 100 mA，電壓 20 mV max.)
3. Insulation Resistance (絕緣阻抗)	100 MΩ 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±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±10%)
4. Dielectric Strength (耐電壓)	Connector must withstand test potential of 250 V AC for 1 minute. Current leakage must be 0.5 mA max. (樣品必須承受測試電壓 250V AC，時間一分鐘，漏電流不大於 0.5 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. (測試產品端子間以及端子與接地間的電壓，適用：MIL-STD-202，方法 301。)
5. Thermal shock (熱衝擊)	After testing, no damage, Contact Resistance 40 mΩ max.. Dielectric Strength should be OK, Insulation Resistance should be 100 MΩ min. (測試後,產品無損壞，接觸阻抗：40 mΩ 最大；耐電壓測試 OK，絕緣阻抗 100MΩ 最小;)	Temperature range from -40°C to +85°C .Start from -40°C, after 30 min. change to +85°C; change time is no more than 30 seconds. Total 5 cycles. MIL-STD-202, Method 107D, condition A. (溫度變化範圍： -40°C ~ +85°C；從 -40°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.適用：MIL-STD-202，方法 107D，條件 A.)



## PRODUCT SPECIFICATION OF OUPIIN

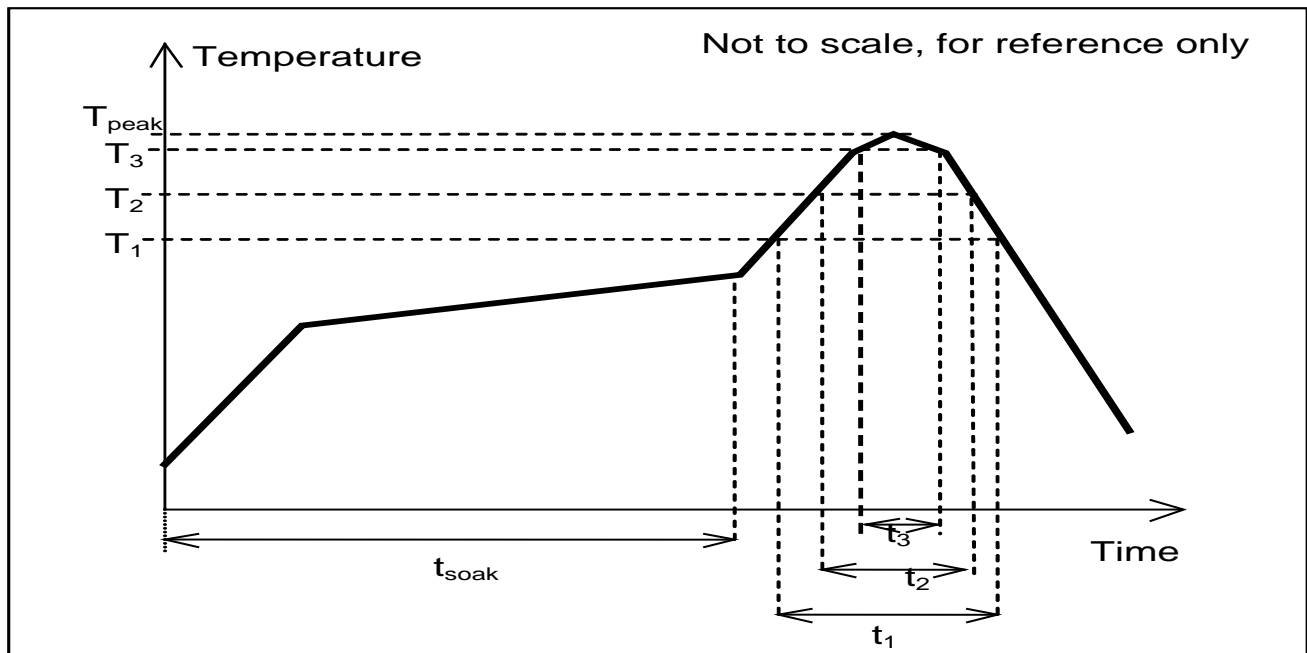
<p>6. Humidity (恆溫恆濕)</p>	<p>After testing, no damage, Contact Resistance 40mΩ max.. Dielectric Strength should be OK, Insulation Resistance should be 100MΩ min. (測試後,產品無損壞, 接觸阻抗: 40 mΩ 最大; 耐電壓測試 OK, 絕緣阻抗 100MΩ 最小;)</p>	<p>Temperature :85±2° C 96 hours. (溫度 : 85±2° C 96 小時) Relative Humidity : 90-95%; (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>7. 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) Peak Temperature: 245±5°C. (最高溫度 : 245±5°C.)</p>

**Table II: Reflow soldering profile**

(附錄二:回流焊接曲線圖)

**Pb-free reflow profile requirements: (無鉛回流焊接曲線)**

Parameter (參數)	Reference (參考)	Specification (規格)
Average Temperature Gradient in Preheating (平均預熱溫度)		2.5°C/s
Soak Time 25~150°C	$T_{soak}$	60 Seconds (max)
Time Above 150~200°C	$t_1$	120 Seconds (max)
Time Above 200~230°C	$t_2$	50 Seconds (max)
Time Above 230~245°C	$t_3$	5 Seconds (max)
Peak temperature in reflow (回流焊接中最高溫度)	$T_{peak}$	250°C (-5/+0°C)
Temperature Gradient in Cooling (冷卻時溫度幅度)		Max -5°C/s



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.

(這個曲線圖是評估原器件焊接抗熱的基本要求。應用在對流焊接中的熱傳遞方式是熱氣對流。達到特定曲線圖的實際溫度主要依賴於回流焊接設備。)





# PRODUCT SPECIFICATION OF OUPIIN

Material Housing : 037-2-PA6T

[SGS Test Report Click here](#)

[如需 SGS 測試報告請點選此處](#)

## Product Information

# DuPont™ Zytel® HTN

high performance polyamide resin

PRELIMINARY DATA

## Zytel® HTNFR52G30NH NC010

Zytel® HTNFR52G30NH NC010 is a 30% glass reinforced, flame retardant, lubricated high performance polyamide resin. It is also a PPA resin and is halogen-free.

Property	Test Method	Units	Value
			DAM
<b>Identification</b>			
Part Marking Code	ISO 11469		> PA6 I/66-GF30FR(40) <
Part Marking Code	SAE J1344		> PPA-GF30FR <
<b>Mechanical</b>			
Stress at Break	ISO 527	MPa (kpsi)	150 (22)
Strain at Break	ISO 527	%	2.2
Tensile Modulus	ISO 527	MPa (kpsi)	10500 (1520)
Flexural Modulus	ISO 178	MPa (kpsi)	9000 (1300)
Flexural Strength	ISO 178	MPa (kpsi)	230 (35)
Notched Charpy Impact Strength	ISO 1791eA	kJ/m <sup>2</sup>	8
<b>Thermal</b>			
Deflection Temperature 1.80MPa	ISO 75-1/-2	°C (°F)	282 (540)
Melting Temperature 10°C/min, First Heat	ISO 11357-1/-3	°C (°F)	310 (590)

Contact DuPont for Material Safety Data Sheet, general guide and/or additional information on translation, handling, purging, drying, etc.  
ISO Mechanical properties measured at 4.0mm, ISO Electrical properties measured at 2.0mm, and all ASTM properties measured at 3.2mm.  
Test temperatures are 23°C unless otherwise stated.

During molding, use proper protective equipment and adequate ventilation. Avoid exposure to fumes and limit the hold up time and temperature of the resin in the machine. Purge degraded resin carefully with HDPE.

The above data are preliminary and are subject to change as additional data are developed on subsequent lots.

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# PRODUCT SPECIFICATION OF OUPIIN

## Product Information

### Zytel® HTNFR52G30NH NC010

Property	Test Method	Units	Value
			DAM
<b>Electrical</b>			
Surface Resistivity	IEC 60093	ohm	> 1E15
Volume Resistivity	IEC 60093	ohm m	> 1E13
Electric Strength	IEC 60243-1	kV/mm (V/mil)	
2.0mm			26.0 (65.5)
<b>Dielectric Constant</b>			
1 GHz	AS 1M D 2520 B		3.7
10 GHz			3.8
<b>Dissipation Factor</b>			
1 GHz	AS 1M D 2520 B	E-4	110
10 GHz			100
C II	IEC 60112	V	600
<b>Flammability</b>			
<b>Flammability Classification</b>			
0.4mm	UL94		V-0
<b>Oxygen Index</b>			
	ISO 4589-1/-2	%	37
<b>Glow Wire Flammability Index</b>			
0.75mm	IEC 60695-2-12	°C	960
<b>Glow Wire Ignition Temperature</b>			
0.75mm	IEC 60695-2-13	°C	725
<b>Other</b>			
Density	ISO 1183	kg/m <sup>3</sup> (g/cm <sup>3</sup> )	1440 (1.44)
<b>Molding Shrinkage</b>			
Normal, 2.0mm	ISO 294-4	%	1.0
Parallel, 2.0mm			0.3

Contact DuPont for Material Safety Data Sheet, general guide, and/or additional information about installation, handling, purging, drying, etc.  
 ISO Mechanical properties measured at 1.0mm, ISO Electric properties measured at 2.0mm, and all AS 1M properties measured at 3.2mm.  
 Test temperature: at 23 °C unless otherwise noted.

**The above data are preliminary and are subject to change as additional data are developed on subsequent lots.**

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# PRODUCT SPECIFICATION OF OUPIIN

## Product Information

### Zytel® HTNFR52G30NH NC010

Property	Test Method	Units	Value
			DAM
<b>Processing</b>			
Melt Temperature Range		°C (°F)	320-330 (610-625)
Mold Temperature Range		°C (°F)	85-130 (185-265)
Drying Time, Dehumidified Dryer		h	6-8
Drying Temperature		°C (°F)	100 (210)
Air Dew Point		°C (°F)	<-20 (<-4)
Processing Moisture Content		%	<0.10

Contact DuPont for Material Safety Data Sheet, general guide and/or additional information about installation, handling, purging, drying, etc.  
 ISO Mechanical properties measured at 23°C, ISO Electrical properties measured at 23°C, and all AF TM properties measured at 23°C.  
 Test temperature: 23°C unless otherwise noted.

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# PRODUCT SPECIFICATION OF OUPIIN

## Material Housing :UL

2015/11/12

UL Certification

[iq.ul.com](http://iq.ul.com)

Component - Plastics [\[guide info\]](#)

E41938

**E I DUPONT DE NEMOURS & CO INC**

ENGINEERING POLYMERS, CHESTNUT RUN PLAZA, PO BOX 80713, WILMINGTON DE 19880-0713

### HTNFR52G30NH(r6)

Polyamide 6T/66 (PA6T/66), "Zytel", furnished as pellets

Color	Min Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
ALL	0.40	V-0	4	0	140	-	-
	0.75	V-0	0	0	140	115	125
	1.5	V-0	0	0	140	115	125
	3.0	V-0	0	0	140	120	130

Comparative Tracking Index (CTI): 0

Inclined Plane Tracking (IPT): -

Dielectric Strength (kV/mm): -

Volume Resistivity (10<sup>X</sup> ohm-cm): -

High-Voltage Arc Tracking Rate (HVTR): 0

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

Dimensional Stability (%): -

(r6) - Virgin and regrind up to 50% by weight inclusive have the same flammability characteristics in the natural, gray, white and black colors only.

NOTE - (1) Material designations that are color pigmented may be followed by suffix letters and numbers. (2) Material designations may be prefixed by "ZYT" for Zytel or "MIN" for Minlon or "DEL" for Delrin or "CRA" for Crastin or "RYN" for Rynite or "ETPV" for ETPV or "SOR" for Sorona grades.

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: 2015-04-22

Last Revised: 2015-08-31

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### IEC and ISO Test Methods

Test Name	Test Method	Units	Thk (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	0.40	V-0 (ALL)
			0.75	V-0 (ALL)
			1.5	V-0 (ALL)
			3.0	V-0 (ALL)
Glow-Wire Flammability (GWF)	IEC 60695-2-12	C	0.40	960
			0.75	960
			1.5	960
			3.0	960
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	C	0.40	700
			0.75	725
			1.5	725
			3.0	775
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>	-	-

<http://iq.ul.com/ul/oert.aspx?ULID=521871>

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# 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](#)

10 20 20 20 20 /

## REPORT OF MATERIAL TEST

磷青銅



DATE: 88P.16.2000

Customer: 鈺鑫興業有限公司	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(%)				
	Thickness (mm)	Width (mm)	Length (mm)							
	Standard									
				0.030 - 0.350	5.50 - 7.00	min. 99.50				
88C208A	0.300	21.000		0.125	5.794	99.959				
86C208A	0.300	24.000		0.125	5.794	99.959				

### 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			(-) 0.005 - (+) 0.005	(-) 0.05 - (+) 0.00	60 - 70	min. 8			
								191 - 198	-	-
88C208A	0.300	21.000		GOOD.	GOOD.	62.44	20.21	195.0 - 196.0	-	15.0
86C208A	0.300	24.000		GOOD.	GOOD.	62.44	20.21	195.0 - 196.0	-	15.0

**MINCHALI METAL INDUSTRY CO., LTD.**

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QC Supervisor

蔡建益

A980361



# PRODUCT SPECIFICATION OF OUPIIN

Material Solder Pad : Copper Alloy (Brass)

[SGS Test Report Click here](#)

[如需 SGS 測試報告請點選此處](#)



## REPORT OF MATERIAL TEST

DATE: MAY 07, 1997

Supplier: 弘銀企業股份有限公司

Commodity: C 2680 R BRASS STRIP ( H )



台正字第 3544 號

Applied Standard: CNS 4383 Brass Sheets, Plates and Strips

### Chemical Analysis Test

Work No.	Size of Product			Cu(%)	Fe(%)	Pb(%)	Zn(%)			
	Thickness (mm)	Width (mm)	Length (mm)							
	Standard									
				64.00 - 68.00	max. 0.050	max. 0.070	REM.			
62A095B	0.250	0.000		65.140	0.025	0.009	REM.			
62A095C	0.250	0.000		65.140	0.025	0.009	REM.			

### 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	42 - 55	-			
62A095B	0.250	0.000		GOOD.	GOOD.	47.34	21.86	149.0 - 152.0	-	25.0
62A095C	0.250	0.000		GOOD.	GOOD.	47.34	21.86	149.0 - 152.0	-	25.0

QC Supervisor: [Signature]

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