PRODUCT SPECIFICATION

(產品規格書)

產品名稱 Description	產品料號 Part No.	圖號 Drawing No.
SMD R/A &Vertical Type 1.0mm	4472-1XxxMTDxT-P	4472D01001
	4472-1X20MTD3T-P	4472D01006

PRODUCT NAME (產品名稱)	**DOCUMENT No.:** (文件編號)	**Rev.** (版本)	**OUPIIN** (歐品)
SMD R/A &Vertical Type 1.0mm	4472spec-1W	B(I704)	
	Approved (核準)	**Checked** (審核)	**Prepared** (製作)
	Q.A. Section Chief	Joseph Yen	06.07/2018

1. SCOPE （範圍）

This product specification defines the product performance and the test methods to ascertain the performance of the SMD R/A &Vertical Type 1.0mm , 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 SMD R/A &Vertical Type 1.0mm 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）
EIA 364	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。)

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 50V DC/AC RMS.
額定電流 1.0 A，額定電壓 50V DC/AC RMS。

3.7 OPERATING TEMPERATURE *使用溫度*

Temperature range: -25°C~+85°C, including terminal temperature rise for rating current.
溫度範圍：-25°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-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）

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℃ per second.
(溫度增加不超過 4℃ /秒,)

2. Soldering （焊接）

Maximum allowable time above reflow temperature of 150~200℃ is 90~120 seconds. Maximum temperature in this interval is 250℃, not to exceed 5 seconds.
(回流焊溫度150~200℃時最長不超過90~120秒. 最高溫度250℃時間不超過5秒.)

3. Cool Down （冷卻）

Cool down shall not exceed 6℃ per second.
(冷卻速度不超過6℃/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准.)

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.
(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；)

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 (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 (100 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) (100V 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 -25°C to +85°C .Start from -25°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： -25°C ~ +85°C；從 -25°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.)
6. Humidity (恆溫恆濕)	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	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。)

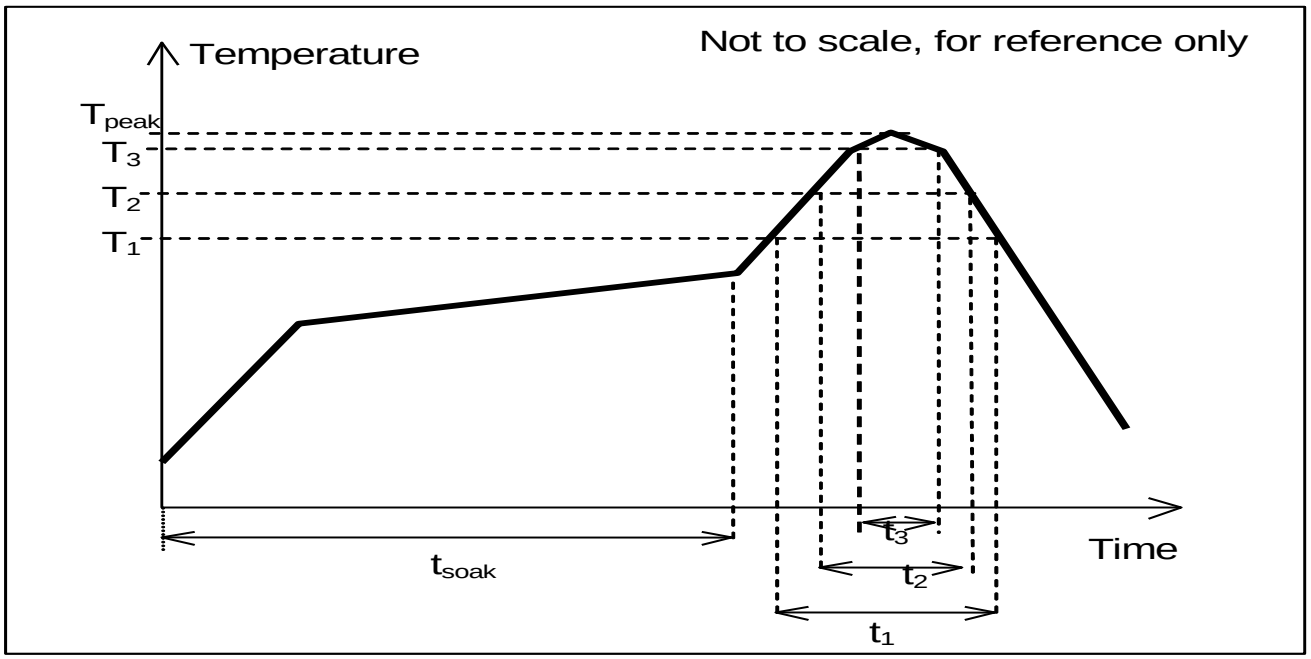
	100MΩ最小;)	

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	60 Seconds (max)
Time Above 230~245°C	t_3	10~15 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.)

Material Housing-4472-1W: PA6T(FR52G30NHNC)(Color Nature)

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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
Identification			
Part Marking Code	ISO 11469		>PA6 I/66-GF30FR(40)<
Part Marking Code	SAE J1344		>PPA-GF30FR<
Mechanical			
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 179/1eA	kJ/m²	8
Thermal			
Deflection Temperature	ISO 75-1/-2	°C (°F)	
1.80MPa			282 (540)
Melting Temperature	ISO 11357-1/-3	°C (°F)	
10°C/min, First Heat			310 (590)

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, 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 Information

Zytel® HTNFR52G30NH NC010

Property	Test Method	Units	Value DAM
Electrical			
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 (655)
Dielectric Constant	ASTM D 2520 B		
1 GHz			3.7
10 GHz			3.8
Dissipation Factor	ASTM D 2520 B	E-4	
1 GHz			110
10 GHz			100
CTI	IEC 60112	V	600
Flammability			
Flammability Classification	UL94		
0.4mm			V-0
Oxygen Index	ISO 4589-1/-2	%	37
Glow Wire Flammability Index	IEC 60695-2-12	°C	
0.75mm			960
Glow Wire Ignition Temperature	IEC 60695-2-13	°C	
0.75mm			725
Other			
Density	ISO 1183	kg/m³ (g/cm³)	1440 (1.44)
Molding Shrinkage	ISO 294-4	%	
Normal, 2.0mm			1.0
Parallel, 2.0mm			0.3

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, 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 temperature: 23 °C unless otherwise stated.

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

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Material Housing :UL

Component - Plastics E41938

E I DUPONT DE NEMOURS & CO INC

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

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	-	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

High-Voltage Arc Tracking Rate (HVTR): 0

Dielectric Strength (kV/mm): -

Dimensional Stability (%): -

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

Volume Resistivity (10^X ohm-cm) : -

(r6) - Virgin and regrind up to 50% by weight inclusive have the same flammability characteristics in the natural 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" or "MIN" or "ZEN" or "DEL" or "CRA" or "RYN".

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:1996-08-22
Last Revised:2008-08-11

Underwriters Laboratories Inc®

IEC and ISO Test Methods

Test Name	Test Method	Units	Thickness Tested (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 (GWFI)	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^2	-	-
ISO Izod Impact	ISO 180	kJ/m^2	-	-
ISO Charpy Impact	ISO 179-2	kJ/m^2	-	-

Underwriters Laboratories Inc®

Material Contact : Copper Alloy (Phosphor Bronze)

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GUO CHING PRECISION CO., LTD

試 驗 成 績 表
REPORT OF MATERIAL TEST

客戶： 歐品電子有限公司 Customer

國慶精密股份有限公司
桃園縣龜山鄉大崗村大湖路2-17號
TEL： 03-2115391~8
FAX： 03-2115399

品名： C5191-H Product　　尺寸： 0.200x 29.5x C Size

料號： 1020109011 Lot No　　日期： 102/01/29 Date

化 學 成 份
CHEMAICAL COMPOSITION

元素 ELEMENT		Cu	P	Sn	
規範 SPEC	MAX	-	0.350	7.000	
	MIN	93.400	0.030	5.500	
分析值 ANALYSIS VALUE		93.975	0.130	5.868	

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 Conductirity
規範 SPEC	CONDITION	-	-	HV	-	-
	MAX	70.000	-	200.000	-	-
	MIN	58.000	8.000	180.000	-	-
測驗值 MEASURE-MENT VALUE		61.430	23.000	195.000	-	14.500

國慶精密 股份有限公司 TEL:(03)2115391-8

Approved by: 品保章 102.1.29　　Checked by: 製單 102.1.29

Material Solder Pad : Copper Alloy (Phosphor Bronze)

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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.: 370879 DATE: JUL.11,2014

Customer 顧客名稱 : 歐品電子有限公司
Commodity 商品名稱 : C 5191 R PHOSPHOR BRONZE STRIP (H)
Applied Standard 引用標準 : JIS H 3110 Phosphor bronze sheets, plates and strips

Manufacture No.	鋼卷號號		35C011A
(Specification)	產品規格	Standard	
Thickness (mm)	產品厚度		0.300
Width (mm)	產品寬度		34.500
Length (mm)	產品長度		
(Chemical Analysis Test)	化性測試		
P(%)	磷	0.030 - 0.350	0.147
Sn(%)	錫	5.500 - 7.000	6.282
Cu+Sn+P(%)	銅錫磷	min. 99.500	99.954
(Mechanical & Physical Test)	物性測試		
Thickness Test (mm)	厚度測試	-	0.301
Width Test (mm)	寬度測試	-0.10 +0.00	GOOD
Tensile Strength (kgf/mm2)	抗拉強度	58.00 - 65.00	64.31
Elongation (%)	伸長率	min. 10.00	22.92
Hardness Test (Hv)	硬度	180.0 - 210.0	198.0 - 199.0
Grain Size (mm)	結晶粒度	-	0.010
Electric Conductivity (%)	導電率	-	14.60
(Other Information)	其他資訊		
Delivery No.	出貨單號		37A038
Customer Purchase Order	採購單號		PO.B02A14051301

MINCHALI

QA Supervisor: 周建偉 A890701 G3500317CH

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