PRODUCT SPECIFICATION

(產品規格書)

Ordering information

2114-	1*	40	G	00	D	A/L2/L3	B
Series	1：Single Row	No. of Pin Count	G：Gold Plated T：Tin Plated	00:Gold Flash	D：SMD Type	A：A Type B：B Type	B：Bulk Package

2114-	2*	40	G	00	D/L2/L3	B
Series	2：Double Row	No. of Pin Count	G：Gold Plated T：Tin Plated	00:Gold Flash	D：SMD Type	B：Bulk Package

L2：Mating Length
L3：Overall Length

PRODUCT NAME (產品名稱)	**DOCUMENT No.:** (文件編號)	**Rev.** (版本)	**OUPIIN** (歐品)
PIN HEADER 2.0 mm 2.0 mm*2.0 mm (RoHS)	2114spec-D	A2	
	Approved (核準)	**Checked** (審核)	**Prepared** (製作)
	Q.A. Section Chief	Amy Chiu	DEC.08/2010

1. SCOPE （範圍）

This product specification defines the product performance and the test methods to ascertain the performance of the PIN HEADER 2.0mm*2.0mm connector, 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 PIN HEADER 2.0mm*2.0mm connector 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）
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. Products required carrier tape should meet the proper specification per purchase order. Connector

container and the packaging specification is shown in package drawing.

(產品包裝可依客戶指定要求.本產品採用 Bulk Packag 包裝，具體見包裝圖面.)

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

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

額定電流 1.0A，額定電壓 150V DC/AC RMS。

3.7 STORAGE AND OPERATING TEMPERATURE *儲存與使用溫度*

Temperature range: -40°C~+105°C, including terminal temperature rise for rating current.

溫度範圍：-40°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）

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 260℃, 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260℃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爲准.)

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)	1000 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 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.)	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 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;)	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.)
6. Humidity	After testing, no damage, Contact	Temperature :85±2°C 96 hours.

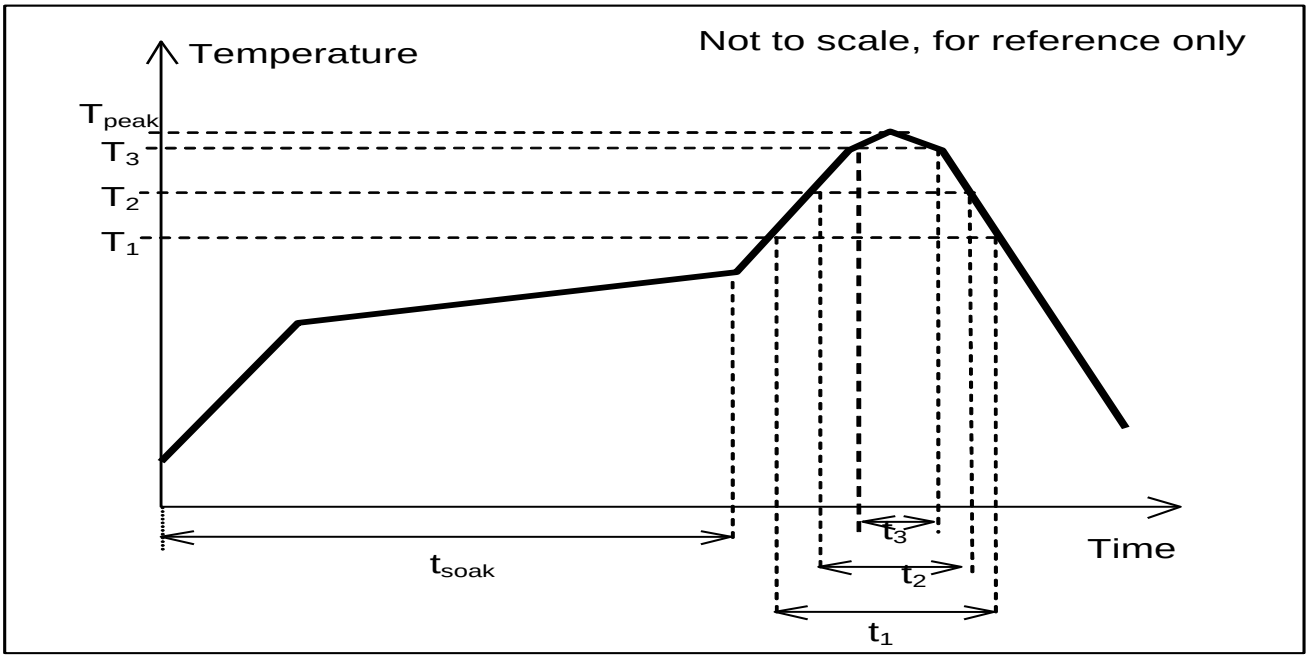
(恆溫恆濕)	Resistance 30 mΩ max.. Dielectric Strength should be OK, Insulation Resistance should be 1000 MΩ min. (測試後,產品無損壞，接觸阻抗：30 mΩ最大；耐電壓測試 OK, 絕緣阻抗 1000MΩ最小;)	(溫度：85±2˚C 96 小時) Relative Humidity : 90-95%; (相對濕度 ：90-95%；) Duration :96 Hours. MIL-STD-202, Method 108, (時間：96 小時；MIL-STD-202，方法 108。)
7.High temperature (高溫)	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;)	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。)
8.Resistance to soldering heat 耐焊接热	No damage 產品無損壞	Leave subject product in the 260±5°C chamber for 5 Seconds 產品置於 260±5°C 烘箱內 5 秒。

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 230~255°C	t_3	5 Seconds (max)
Peak temperature in reflow (回流焊接中最高溫度)	T_{peak}	260°C (+0/-5°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：058-PA9T

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Material properties of Genestar

	Unit	Test method	Genestar (flame-retardant grade)									Other products for reference				
Grade			G2330	G2330	GR2300	GN2330	GN2450	GT2330	GN2332	GW2458HF	GW2508	PA6T	PA46	PPS	LCP	LCP
Type		(ASTM)	9	12	1	1	1	2	1	1	1	Zytel	Stanyl	Fortron	Zenite	Vectora
			standard	standard	high weld strength	high weld strength	high weld strength	toughness	high flow	low warpage, high flow	low warpage, high strength	FR52G30L	TE250F8	1140A6	6130L	E130i
Glass fiber content	%	-	33	33	30	33	45	33	33	45	50	30	40	40	30	30
Physical properties																
Specific gravity	g/cm3	-	1.68	1.68	1.57	1.62	1.73	1.58	1.62	1.73	1.78	1.65	1.68	1.67	1.62	1.61
Water absorption (105F,40C/95%RH/96hrs)	%	-	0.9	0.9	1.1	1.0	0.7	1.0	1.0	0.8	0.7	2.6	3.6	0.06	[0.04]	[0.04]
Flammability	-	UL94	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0
Mechanical properties																
Tensile strength	MPa	D638	175	185	184	190	210	195	172	175	185	179	163	208	150	150
Tensile elongation	%	D638	2.8	3.1	2.7	3.2	2.6	3.2	2.6	2.5	2.5	2.7	2.8	2.5	2.7	2.4
Weld strength	MPa	D638	45	45	51	54	40	60	36	35	35	57	57	67	22	20
Weld elongation	%	D638	0.5	0.5	0.7	0.7	0.4	0.8	0.3	0.3	0.3	0.7	0.7	0.7	0.2	0.2
Flexural strength	MPa	D790	222	222	209	225	260	233	210	222	245	227	223	257	170	167
Flexural modulus	GPa	D790	11	11	9	11	14	10	10	15	16	10	12	13	12	11
Izod impact strength (notched)	J/m	D256	100	100	100	100	100	100	100	100	100	90	90	80	120	116
Bar-flow length (610F,320C/0.5mmt/750kgf)	mm	-	67	66	63	55	37	45	85	71	50	60	62 (590F)	31	85 (645F)	80 (645F)
Rockwell hardness	R scale	D785	125	125	125	125	125	125	125	125	125	125	125	123	-	-
Thermal properties																
Melting point	F/C	-	583/306	583/306	583/306	583/306	583/306	583/306	583/306	583/306	583/306	590/310	563/295	536/280	-	-
Glass transition	F/C	-	257/125	257/125	257/125	257/125	257/125	257/125	257/125	257/125	257/125	185/85	140/60	194/90	-	-
DTUL (1.82MPa)	F/C	D648	545/285	545/285	545/285	545/285	545/285	545/285	545/285	545/285	545/285	545/285	545/285	509/265	509/265	527/275
Electrical properties																
Dielectric strength	MV/m	D149	30	30	30	30	30	30	30	30	30	[28]	24	24	[30]	[30]
Volume resistivity	Ωcm	D257	10^{16}	10^{16}	10^{18}	10^{16}	10^{16}	10^{16}	10^{16}	10^{15}	10^{16}	[10^{15}]	10^{15}	10^{15}	[10^{16}]	[10^{16}]
Tracking resistance	V	IEC-CTI	550	550		400	400	400	400	>600	400	[400]	225	175	[175]	[175]
Dielectric constant (10GHz)	-	D150	3.7	3.4		3.4	[3.8]	[3.4]	3.5	3.8	3.9	[3.4]	4.1	3.8	[4.2]	[4.2]
Dielectric loss tangent (10GHz)	-	D150	0.012	0.0095		0.0097	[0.0097]	[0.0097]	0.0101	0.0098	0.0098	[0.009]	0.0123	0.0064	[0.018]	[0.018]
Dimensional characteristics																
Molding shrinkage :in direction of flow	%	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.03	0.02	0.1	0.1	0.04	0.1	0.1
(1mmt) :at right angles to flow	%	-	0.6	0.6	0.6	0.6	0.5	0.6	0.6	0.40	0.30	0.6	0.7	0.50	0.6	0.6

* Table shows typical values, which are not specified values.

Material Housing :UL

Online Certifications Directory

QMFZ2.E90350

Plastics - Component

Guide Information

KURARAY CO LTD E90350

HIGH PERFORMANCE MATERIALS DEV DEPT

1-12-39 UMEDA

KITA-KU

OSAKA 530-0001, JAPAN

									H	D	
		Min.		H	H	RTI			V	4	C
		Thk	Flame	W	A	Elec	Mech		T	9	T
Material Dsg	Color	mm	Class	I	I		Imp	Str	R	5	I
Polyamide 9T (PA 9T), furnished as pellets.											
GN2200#	NC, BK	0.75	V-0	—	—	65	65	65	—	—	—
GN2330#	ALL	0.75	V-0	0	0	105	85	105	—	—	—
		1.5	V-0	0	0	105	85	105	—	—	—
		3.0	V-0	0	0	105	85	120	3	5	1
GN2331	NC, BK	0.75	V-0	—	—	65	65	65	—	—	—

GN2332	ALL	0.75	V-0	0	0	65	65	65	—	—	—
		1.5	V-0	0	0	65	65	65	—	—	—
		3.0	V-0	0	0	65	65	65	4	5	1

#-Suffix optional.

Material Contact :Copper Alloy (SQUAREPIN-Au)

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國 晟 工 業 股 份 有 限 公 司

GWO CHERN INDUSTRIAL CO., LTD.
桃園縣蘆竹鄉海湖村海湖 16 鄰 186 之 28 號
No . 186 – 28 Hai Hu Village . Lu Chu
Hsiang Tao Yuan Hsien Taiwan

電腦分析儀化學成份(Chemical Compositions)測試報告

客戶名稱					
訂單號碼				出貨日期	96/10/24
國際標準	JIS 國際標準	試材品名	C2700W（SBS）	試材規格	1.08m/m ± 0.02
化學試驗	CHEMICAL TESTING				
儀器名稱	X 光電腦分析儀 (VACUUM X RAY SPECTROGRAPH)				
此份材質表僅供參考，不做其他證明使用。					

元素名稱	標準規範 %	實際含量 %	元素名稱	標準規範 %	實際含量 %
銅 (Cu)	63.2-63.8	63.485	鐵 (Fe)	≦ 0.02	0.0017
鋅 (Zn)	Remainder	36.4794	矽 (Si)	—	
鉛 (Pb)	≦ 0.010	≦ 0.01	錳 (Mn)	—	—
錫 (Sn)	Fe+Sn ≦ 0.02	≦ 0.02	銻 (Sb)	—	—
鎳 (Ni)	—	—	鋁 (Al)	≦ 0.005	0.0039
磷 (P)	—	—	其他(other)	—	—

導電率測試值	架橋式					
機械試驗	MECHANICAL TESTING					
試驗方法	油壓拉伸法					
儀器名稱	電腦萬能材料試驗機 (computer universal machine)					
物理性質	拉力(tesile strength)	降伏點(yield strength)	延伸率(elongation)	硬度(hardness)	CD 值 1	CP 值 2
標準要求	— kgf/m ㎡	— gf/m ㎡	15 % 以上	1/4 H	750 m/m 以下	50 m/m 以下
實際數值	36.9 kgf/m ㎡	18.12 kgf/m ㎡	37 %	1/4 H	550 m/m	<5 m/m
製造批號	101821 101822					
單位主管	張 景 松		分 析 員	何 三 吾		