



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.
Box Header 2.0 mm*2.0mm	3112-xxG00DBT-P	3112D01006

PRODUCT NAME (產品名稱)	DOCUMENT No.: (文件編號)	Rev. (版本)	OUPIIN
Box Header 2.0 mm*2.0mm	3112spec-D	B(I535)	(歐品)
	Approved (核準)	Checked (審核)	Prepared (製作)
	Q.A. Section Chief	Joseph Yen	05.25/2018



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1. SCOPE (範圍)

This product specification defines the product performance and the test methods to ascertain the performance of the Box Header 2.0 mm, 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 Box Header 2.0 mm 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)
EIA364	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 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: $-40^{\circ}\text{C}\sim+105^{\circ}\text{C}$, including terminal temperature rise for rating current.

溫度範圍： $-40^{\circ}\text{C}\sim+105^{\circ}\text{C}$ ，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°C per second.

(溫度增加不超過 4°C /秒,)

2 Soldering (焊接)

Maximum allowable time above reflow temperature of $150\sim 200^{\circ}\text{C}$ is 90~120 seconds. Maximum temperature in this interval is 260°C , not to exceed 5 seconds.

(回流焊溫度 $150\sim 200^{\circ}\text{C}$ 時最長不超過90~120秒。最高溫度 260°C 時間不超過5秒.)

3 Cool Down (冷卻)

Cool down shall not exceed 5°C per second.

(冷卻速度不超過 5°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)	5000 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. Connector Pin Mating/Un-mating Force (單支端子插入力/拔出力)	Mating force: 0.3Kg/Pin Max. Un-mating force: 0.02Kg/Pin Min. 插入力最大 0.3Kg/Pin Max，拔出力最小 0.02Kg/Pin Min。	At a speed of 25±3 mm/minute, apply axial insert the mating part into fully or pull out from the subject product. 以 25±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。
6.Contact Retention Force (端子保持力)	0.8Kg/Pin Min. 最小 0.8Kg/Pin。	Apply axial pull out force at a speed of 25±3 mm/minute on the contact assembled in the housing. 以 25±3mm/分鐘的速度施加軸向拉力從塑膠本體上拔出端子。
7. Durability (耐久性)	After testing, no damage, Contact Resistance 20mΩ max.. Dielectric	Repeat mate and unmated for connector 300



PRODUCT SPECIFICATION OF OUPIIN

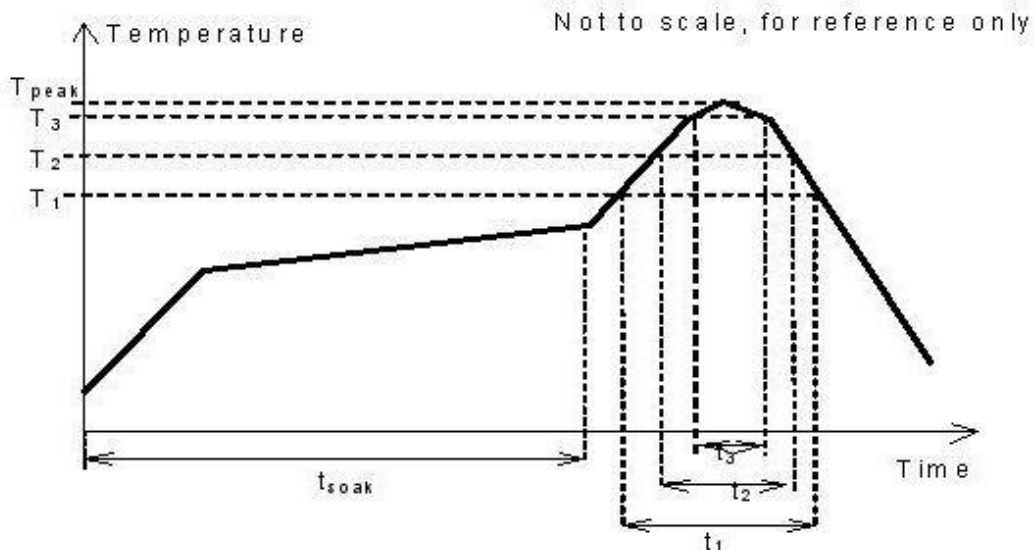
	Strength should be OK, Insulation Resistance should be 5000MΩ min. (測試後,產品無損壞, 接觸阻抗: 20 mΩ 最大; 耐電壓測試 OK, 絕緣阻抗 5000MΩ 最小;)	cycles, at a speed of 10 cycles per minute. 重復進行配合產品 300 次插拔速度每分鐘 10 次
8. Thermal shock (熱衝擊)	After testing, no damage, Contact Resistance 20 mΩ max.. Dielectric Strength should be OK, Insulation Resistance should be 5000 MΩ min. (測試後,產品無損壞, 接觸阻抗: 20 mΩ 最大; 耐電壓測試 OK, 絕緣阻抗 5000MΩ 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.)
9. Humidity (恆溫恆濕)	After testing, no damage, Contact Resistance 20mΩ max.. Dielectric Strength should be OK, Insulation Resistance should be 5000MΩ min. (測試後,產品無損壞, 接觸阻抗: 20 mΩ 最大; 耐電壓測試 OK, 絕緣阻抗 5000MΩ 最小;)	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。)
10.High temperature (高溫)	After testing, no damage, Contact Resistance 20 mΩ max.. Dielectric Strength should be OK, Insulation Resistance should be 5000 MΩ min. (測試後,產品無損壞, 接觸阻抗: 20 mΩ 最大; 耐電壓測試 OK, 絕緣阻抗 5000MΩ 最小;)	Subject product to 85±2°C for 96 hours continuously. MIL-STD-202, Method 108. (產品置於 85±2°C 連續 96 小時, 適用 MIL-STD-202, 方法 108。)
11. Solder ability (可焊性)	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;)	Soldering time: 3 to 5 Seconds (焊接時間: 3~5 秒) Peak Temperature: 260°C (-5/+0°C) (最高溫度: 260°C (-5/+0°C).)
12. Resistance to soldering heat (耐焊接熱)	After testing, no damage, Contact Resistance 20 mΩ max.. Dielectric Strength should be OK, Insulation Resistance should be 5000 MΩ min. (測試後,產品無損壞, 接觸阻抗: 20 mΩ 最大; 耐電壓測試 OK, 絕緣阻抗 5000MΩ 最小;)	Soldering time: 3 to 5 Seconds (焊接時間: 3~5 秒) Peak Temperature: 260°C (-5/+0°C) (最高溫度: 260°C (-5/+0°C).)

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}	260°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。)



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Material Housing : 038-PA6T

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ARLEN¹⁾ 的各種規格及物性

Mitsui Chemicals, Inc.

Properties	Units	A315	A335	A350	AE4200	AE4200N	AE2230	C230	C240	C215N	C230N	C240N	CE230N	CH245NK	C430N	C630N	C645NK	E430N	E430NS	E430N(T)	E440NK
玻璃含量	%	15	35	50	0	0	30	30	40	15	30	40	30	45	30	30	45	30	30	30	40
比重	—	1.3	1.48	1.63	1.1	1.4	1.37	1.42	1.53	1.62	1.72	1.75	1.63	1.77	1.66	1.66	1.79	1.66	1.66	1.66	1.75
機械特性 (乾燥狀態)																					
引伸強度	Mpa	120	240	300	80 ²⁾	70 ²⁾	200	170	210	110	170	180	160	160	170	170	150	180	180	190	150
引伸破壞長度	%	3	3	3	50 ²⁾	4 ²⁾	4	3	3	3	3	3	4	3	3	3	3	4	4	4	3
曲折強度	Mpa	190	360	430	110	120	270	260	300	180	260	280	240	250	250	250	240	260	260	290	280
彈性係數	Mpa	6,000	12,000	17,000	2,400	3,000	9,000	10,000	13,000	6,000	12,000	13,000	11,000	14,000	11,400	11,000	14,000	11,800	11,800	11,800	14,000
耐衝擊強度 (IZOD)	(10 J)	50	130	150	200	70	100	80	85	40	70	75	80	90	85	85	90	85	85	85	90
洛氏硬度	M-scale	105	110	110	65(R110)	80	95	110	110	105	110	110	95	95	95	95	95	100	100	100	100
溫度特性																					
熔點 (TM)	°C	330	330	330	330	330	330	310	310	310	310	310	310	310	310	310	310	320	320	320	320
玻璃轉化溫度	°C	125	125	125	125	125	125	85	85	85	85	85	85	85	85	85	85	95	95	95	95
熱變型溫度 (有荷重)	1.82kPa °C	290	310	310	310	145	300	300	300	280	295	295	290	290	293	293	290	305	305	305	300
收缩係數 機械方向	MD 10 ⁻³ °C	3.4	2	1.8	1.8	6.5	2.6	1.8	1.8	2.7	2.5	1.7	1.5	1.2	1.2	1.2	0.8	2.2	2.2	2.2	1.8
收缩係數 垂直方向	TD	5.5	4.5	4.2	4.2	6.7	6.0	10.0	8.0	8.8	7.4	7	8.9	8	9.2	9.1	7.8	7.3	7.3	7.3	6.9
電氣特性 (乾燥狀態)																					
體積電阻	cm	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁵
介電係數	10 ³ Hz	4.2	4.5	4.5	3.3	3.3	3.7	4.5	4.5	3.5	3.9	4.0	4.0	4.3	4.0	4	4.3	3.6	3.6	3.5	4.1
介電消散因數	10 ³ Hz	0.02	0.018	0.018	0.018	0.014	0.018	0.018	0.018	0.015	0.015	0.011	0.013	0.011	0.013	0.012	0.011	0.012	0.012	0.011	0.011
介電破壞電壓	kV/mm	35	27	29	23	31	27	28	30	17	17	22	25	22	26	22	19	24	24	24	24
其它特性																					
收缩率 (2mm厚) 機械方向	MD %	0.5	0.3	0.2	0.9	0.8	0.4	0.5	0.4	0.4	0.4	0.3	0.4	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.2
收缩率 (2mm厚) 垂直方向	TD %	0.6	0.6	0.6	0.9	1.0	0.7	0.8	0.8	0.8	0.8	0.7	0.8	0.7	0.7	0.7	0.4	0.9	0.9	0.7	0.6
吸水率 (2mm厚水中泡24小時)	23°C %	0.4	0.3	0.2	0.4	0.3	0.2	3.6	—	0.4	0.4	0.2	2.2	0.2	2	1.9	1.6	0.3	0.3	0.3	0.2
	100°C %	2.5	1.8	1.2	2.6	2.0	1.7	—	—	3.8	3.8	2.8	—	2.8	—	—	—	0.9	0.9	0.9	0.7
防火等級	UL94	—	HB	HB	HBequiv	HB	V-0	HBequiv	HB	HB	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0
滑動長度 ²⁾	0.5mm mm	—	—	—	—	—	—	—	—	—	33	30	40	36	53	70	48	56	65	56	52
Peak Temperature under reflux oil during test	Minis Method °C	—	—	—	—	—	—	250 ²⁾	—	—	—	—	—	240 ²⁾	—	240 ²⁾	240 ²⁾	235 ²⁾	250 ²⁾	250	250

2004-7-30

1) The above figures are just representative values but not specification values.

2) Width: 10mm, Cylinder temp.: 320°C, mold temp.: 130°C, injection pressure: 100MPa



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Material Housing :UL

MITSUBI CHEMICALS INC PERFORMANCE POLYMERS DIV SHIODOME CITY CENTER,#1-5-2,HIGASHI-SHINBASHI MINATO-KU, TOKYO 105-7117, JAPAN											UL Underwriters Laboratories Inc	
											E52579	
Material Dsg	Color	Min. Thk mm	Flame Class	H		RTI			H	D		
				W	A	Elec	Mech		V	4	C	
				1	1		Imp	Str	T	9	T	
				0	0				R	5	0	
A3(d)(e)	ALL	0.75	HB	—	—	65	65	65				
A315(e)	ALL	0.75	HB	—	—	65	65	65				
A335	NC	0.75	HB	—	—	65	65	65	0	5	0	
		3.00	HB	0	0	65	65	65				
A340(e)	ALL	0.75	HB	—	—	65	65	65				
		1.50	HB	—	—	105	105	105				
		3.00	HB	—	—	115	115	115				
A340N(e)	ALL	0.75	V-0	0	1	65	65	65	1	6	1	
		1.50	V-0	0	1	120	120	120				
		3.00	V-0	0	0	120	120	120				
AE4200n(e)	ALL	0.75	V-0	—	—	65	65	65				
C18(s)#	ALL	0.86	HB	—	—	65	65	65				
C1800#	ALL	0.86	HB	—	—	65	65	65				
C1850#	ALL	0.86	HB	—	—	65	65	65				
C2(d)(e)	ALL	0.75	HB	—	—	65	65	65				
C215(e)	ALL	0.75	HB	—	—	65	65	65				
C215N(e)	ALL	0.75	V-0	—	—	65	65	65			2	
C230(e)®	ALL	0.86	HB	—	—	65	65	65				
C230N(e)	ALL	0.75	V-0	—	—	65	65	65			2	
C240(e)	ALL	0.75	HB	—	—	65	65	65				
		1.50	HB	—	—	115	95	115				
		3.00	HB	—	—	115	105	115				
C240N(e)	ALL	0.75	V-0	0	0	65	65	65	1	6	1	
		1.50	V-0	0	0	120	105	115				
		3.00	V-0	0	0	120	115	125				
C240NK(r1)	ALL	.075	V-0	0	0	65	65	65	1	6	1	
		1.50	V-0	0	0	120	105	115				
		3.00	V-0	0	0	120	115	125				
C430N(e)	ALL	0.85	V-0	0	0	140	65	65			1	
		1.50	V-0	0	0	140	65	65				
		3.00	V-0	0	0	140	65	65				
C430N(e)(r)	ALL	0.85	V-0	—	—	65	65	65			1	
C630N(e)(r2)	ALL	0.75	V-0	—	—	140	65	65			1	
		3.00	V-0	—	—	140	65	65				
C645N(e)	ALL	0.75	V-0	—	—	65	65	65				
		3.00	V-0	—	—	65	65	65				
C645NK(r1)	NC	0.75	V-0	—	—	65	65	65				
C645NK(r1)	NC	0.80	V-0	—	—	65	65	65				
		3.00	V-0	—	—	65	65	65				
C830NK#	BK	0.75	V-0	—	—	65	65	65				
CE2200NK	BK	0.86	V-0	—	—	65	65	65				
CH230N(e)	ALL	0.75	V-0	0	0	130	90	125			1	
		1.50	V-0	0	0	130	120	125				
		3.00	V-0	0	0	130	120	125				
CH230N(e)(r)	ALL	0.85	V-0	—	—	65	65	65			1	
CH245N(e)	ALL	0.75	V-0	—	—	130	120	125				
		3.00	V-0	—	—	130	120	125				
CH245NK(r1)	NC	0.75	V-0	—	—	65	65	65				
CH245NK(r1)	NC	0.80	V-0	—	—	65	65	65				
		3.00	V-0	—	—	65	65	65				
★E430NT5(r)	ALL	0.80	V-0	—	—	65	65	65				
E440NK	ALL	0.80	V-0	—	—	65	65	65				
GB4200N(e)	ALL	0.87	V-0	—	—	65	65	65				

(r)-Virgin and regrind up to 50% by weight inclusive have the same flammability properties only
 (r1)-Virgin and regrind from 26%to50% by weight inclusive have the same flammability and TI properties only
 (r1)-Virgin and regrind from 26%to50% by weight inclusive have the same flammability,HDT, and TS properties only



PRODUCT SPECIFICATION OF OUPIIN

Material Contact :Copper Alloy (SQUAREPIN-Au)

[SGS Test Report Click here](#)

[如需 SGS 測試報告請點選此處](#)

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 ²	— gf/m ²	15 % 以上	1/4 H	750 m/m 以下	50 m/m 以下
實際數值	36.9 kgf/m ²	18.12 kgf/m ²	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		