PRODUCT SPECIFICATION

(產品規格書)

產品名稱 Description	產品料號 Part No.	圖號 Drawing No.
FFC/FPC Connector 0.50 mm ZIF Type	2345-CxxTDxT	2345D02021

PRODUCT NAME (產品名稱)	**DOCUMENT No.:** (文件編號)	**Rev.** (版本)	**OUPIIN** (歐品)
FFC/FPC Connector 0.50 mm ZIF Type	2345-Cspec	C (I570)	
	Approved (核準)	**Checked** (審核)	**Prepared** 製作)
	Q.A. Section Chief	Jack Hsing	2020.06.18

1. SCOPE （範圍）

This product specification defines the product performance and the test methods to ascertain the performance of the FFC/FPC Connector 0.50 mm ZIF 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 FFC/FPC Connector 0.50 mm ZIF 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-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 0.4 A, rating voltage is 50V DC/AC RMS.

額定電流 0.4 A，額定電壓 50V DC/AC RMS。

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

Temperature range: -45°C~+85°C, including terminal temperature rise for rating current.

溫度範圍：-45°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 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 10 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 10 mA，電壓 20 mV max.)
3. Insulation Resistance (絕緣阻抗)	500 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 200 V AC for 1 minute. Current leakage must be 0.5 mA max. (樣品必須承受測試電壓 200V 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. Durability (Repeated Mating/Unmated) (耐久性)	Contact Resistance: 30 mΩ Max. after testing. (測試後接觸阻抗最大 30mΩ)	The sample should be mounted the tester and fully mated and unmated 20 cycles specified at the rate of 25mm/min (重復進行配合產品 20 次插拔.)
6. FFC/FPC Retention Force (排線保持力)	Pin.* 1.5N / Pin Min. (最小.)	Apply axial pull out force at a speed of 25±3 mm/minute on the FFC/FPC assembled in the housing. (軸向力以 25±3mm/分的速度從塑膠本體上拔出排線.)

7. Thermal shock (熱衝擊)	After testing, no damage, Contact Resistance 30 mΩ max.. (測試後,產品無損壞，接觸阻抗：30 mΩ最大;)	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.)
8. Humidity (恆溫恆濕)	After testing, no damage, Contact Resistance 30mΩ max.. (測試後,產品無損壞， 接觸阻抗：30 mΩ最大)	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。)
9. Salt Spray (鹽霧)	After testing, no damage, Contact Resistance 30 mΩ max.. (測試後,產品無損壞， 接觸阻抗：30 mΩ最大)	5±1% salt concentration 8±1 hours 35±2°C MIL-STD-202, Method 101 Condition B. (鹽水濃度（重量比）5±1%，時間 24±4 小時，溫度 35±2°C；MIL-STD-202， 方法 101 條件 B.) IEC-364-26A
10. Solderability (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 max. (最高溫度：260 °C max.)
11.Resistance to soldering heat (耐焊接熱)	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。

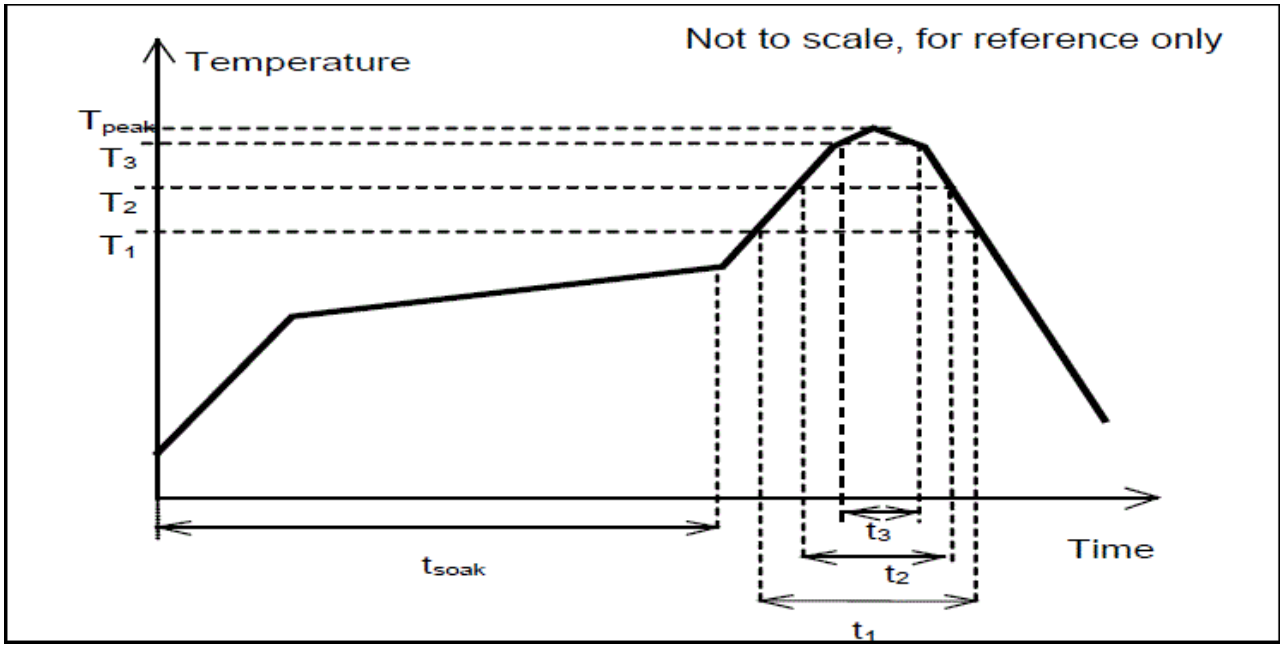
Table II: Reflow Soldering Profile

附表二：回流焊接曲線圖

Lead-free reflow profile requirements I:

無鉛回流焊接曲線 I

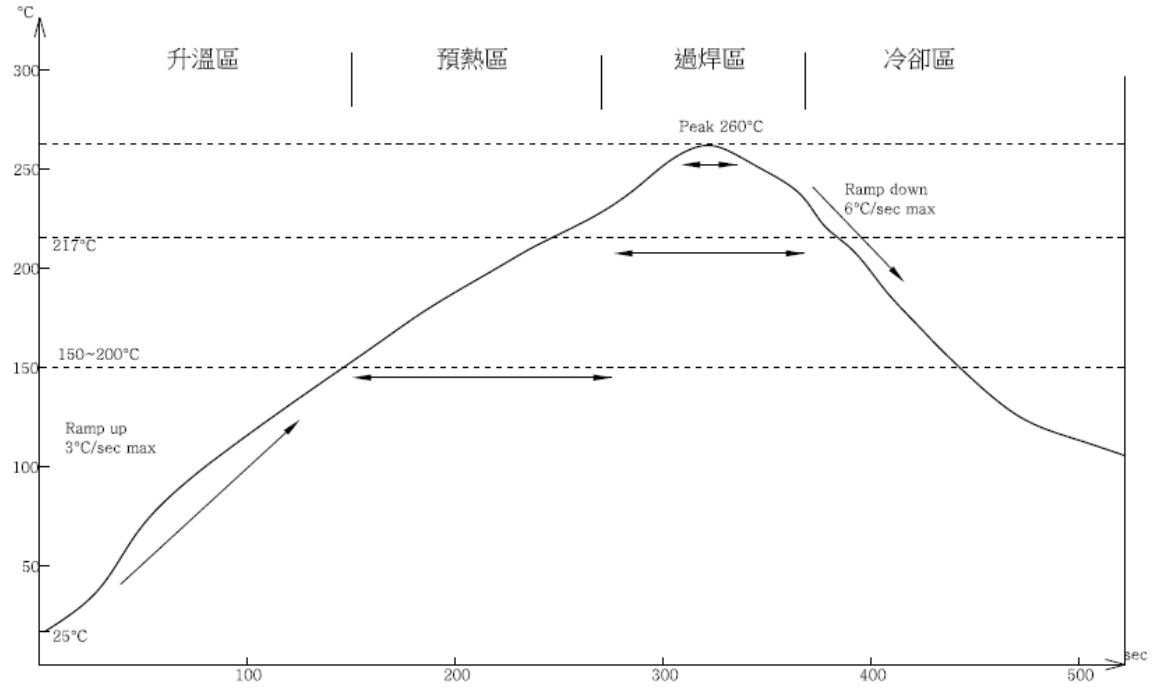
Parameter 參數	Reference 參考	Specification 規格
Average temperature gradient in preheating 平均預熱速度		2.5°C/S
Soak time 25~150°C	t_{soak}	60 Seconds(Max)
Time above 150°C	t_1	120 Seconds(Max)
Time above 200°C	t_2	50 Seconds(Max)
Time above 230°C	t_3	10 Seconds(Max)
Peak temperature in reflow 回流焊接中最高溫度	T_{peak}	**255**°C(-0/+5°C)
Temperature gradient in cooling 冷卻時溫度幅度		**-5**°C/S



Lead-free reflow profile requirements Ⅱ :

無鉛回流焊接曲線 Ⅱ

Parameter 参数	**Reference** 参考	**Specificat ion**
升溫區 Ramp-up	**25℃ ~150℃**	3℃/S Max
預熱區 Pre-heatimg	**150℃ ~200℃**	60~180sec
過旱區 Reflow	**217℃**	60~150sec
Peak Temp(T_p)	**255-/+5℃**	20~40sec
Time 25°C to T_p	**25℃ ~ Peak Temp.**	8 minutes maximum
冷卻區 Cooling	**Peak Temp.~150℃**	-6℃/S(Max)



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.
這個曲線圖是評估元件器件焊接抗熱的基本要求。應用在對焊接中的熱傳遞方式是熱氣對流。達到特定曲線圖地實際溫度主要依賴與回流焊接設備。

PRODUCT SPECIFICATION OF OUPIIN

Material Housing : I570- LCP E6808I(White)

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Material Actuator(蓋子) : I570- LCP E6808I(BK)

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测定项目		测定方法	单位	E6008	E6006L	E6007LHF	E6807LHF	E6808LHF	E6808UHF	E6810LHF	E7006L	E7008
充填材料				玻璃纤维	玻璃纤维	玻璃纤维	玻璃纤维/无机	玻璃纤维/无机	玻璃纤维/无机	玻璃纤维/无机	玻璃纤维	玻璃纤维
标准成型温度			℃	350	350	350	350	350	350	350	320	320
比重		ASTM D792		1.7	1.61	1.65	1.67	1.7	1.72	1.82	1.64	1.71
吸水率		ASTM D570	%	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
成型收缩率	MD	住化法	%	0.18	0.19	0.2	0.11	0.17	0.22	0.13	0.14	0.17
	TD		%	1.16	0.74	0.6	0.63	0.4	1.02	0.38	0.79	1.05
拉伸强度		ASTM D638	MPa	147	164	157	134	130	100	105	133	127
拉伸伸长率			%	5.2	5	5.1	4.5	4.5	5	4	4.5	4.2
弯曲强度	23℃	ASTM D790	MPa	143	153	158	145	140	120	133	140	138
	200℃		MPa	33	34	-	29		-	-	21	24
弯曲弹性率	23℃	ASTM D790	MPa	12300	11300	11800	12100	12500	9400	12600	11200	11300
	200℃		MPa	4900	5100	-	4500		-	-	3140	3230
Izod 冲击强度	6.4t V型凹槽(有)	ASTM D256	J/m	108	137	-	118	96	-	-	78	56
	6.4t V型凹槽(无)		J/m	412	363	251	343	270	350	200	255	275
剪切强度		ASTM D732	MPa	51	55	-	53	54	-	-	48	49
泊松比		ASTM D785		0.46	0.45	-	0.41	0.4	-	-	0.45	0.42
洛氏强度		ASTM D785	R比例尺	R103	R103	106	R101	R97	96	102	R107	R107
负荷弯曲温度		ASTM D648	℃	279	284	269	270	270	240	266	242	242
耐焊锡性		住化法	℃	300	300	300	295	280	290	280	275	275
线膨胀系数（150℃）	MD	住化法	$\times 10^{-5}$/℃	1.3	2	0.2	1	0.4	1	-	0.8	0.8
	TD		$\times 10^{-5}$/℃	5.6	8.9	8.5	6.3	8.1	6.2	-	8.4	7.8
界限氧指数		JIS K7201	-	48	42	40	45	44	48	48	49	49
难燃性	难燃等级	UL94	mmt	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0
	颜色			ALL	NC, BK	ALL	ALL	NC, BK	NC, BK	NC, BK	NC, BK	NC, BK
	厚度			0.3	0.3mmt	0.3	0.3	0.3	0.3	0.3	0.38	0.38
热传导率		JIS R2618	W/mk	0.52	0.53	-	0.56	-	-	-	0.55	0.56
			kcal/mhr℃	0.45	0.46	-	0.48	-	-	-	0.47	0.48
介电常数	(103Hz)	ASTM D150		4.4	4.3	-	4.7	-	-	-	4.6	4.7
	(106Hz)			3.9	3.7	3.8	4.1	3.8	3.8	4.1	3.9	4.1
	(109Hz)			-	-	3.5	-	3.6	3.4	3.8	-	-
介电损耗因子	(103Hz)			0.022	0.023	-	0.024	-	-	-	0.026	0.024
	(106Hz)			0.022	0.034	0.026	0.03	0.038	0.033	0.02	0.032	0.03
	(109Hz)			-	-	0.004	-	0.004	0.004	0.004	-	-
体积固有电阻		ASTM D257	Ωm	1013	1013	1013	1013	1013	1013	1013	1013	1013
耐电弧性		ASTM D495	sec	130	130	124	180	140	132	181	125	125
耐电弧轨迹性		IEC法	V	125	115	175	150	190	200	200	155	155

Material Housing :UL

UL Certification: E249884 - Component - Plastics

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The information presented on the UL Prospector datasheet was acquired by UL Prospector from the producer of the material. UL Prospector makes substantial efforts to assure the accuracy of this data. However, UL Prospector assumes no responsibility for the data values and strongly encourages that upon final material selection, data points are validated with the material supplier.

Component - Plastics E249884

Guide Information

SUMITOMO CHEMICAL CO LTD

ADVANCED POLYMERS DIV, TOKYO SUMITOMO TWIN BLDG, 27-1 SHINKAWA 2-CHOME, CHUO-KU TOKYO 104-8260 JP

E6808UHF(i2)

Liquid Crystal Polymer (LCP) "SUMIKASUPER", furnished as pellets

Color	Min. Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
NC, BK	0.100	V-0	-	-	130	130	130
	0.30	V-0	-	-	130	130	130
	3.0	V-0	-	-	130	130	130
ALL	0.30-0.33	V-0	-	-	130	130	130

Comparative Tracking Index (CTI): 3

Dielectric Strength (kV/mm): -

High-Voltage Arc Tracking Rate (HVTR): -

Dimensional Stability (%): -

Inclined Plane Tracking (IPT) kV: -

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

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

(i2) - Virgin and regrind up to 50% by weight incl. have the same flammability characteristics and CTI properties. No other properties have been evaluated.

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: 2004-02-11

Last Revised: 2018-12-20

Material Contact : C5191

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GUO CHING PRECISION CO., LTD

試 驗 成 績 表
REPORT OF MATERIAL TEST

客戶：Customer 歐品電子有限公司

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

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

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

ISO 9001 URS REGISTERED FIRM

國慶精密股份有限公司 TEL (03)2115391-8

Approved by: 品保部 102. 1. 29 洪季文　　Checked by: 製單 102. 1. 29 曾暐琦

Material Solder Pad : C2680

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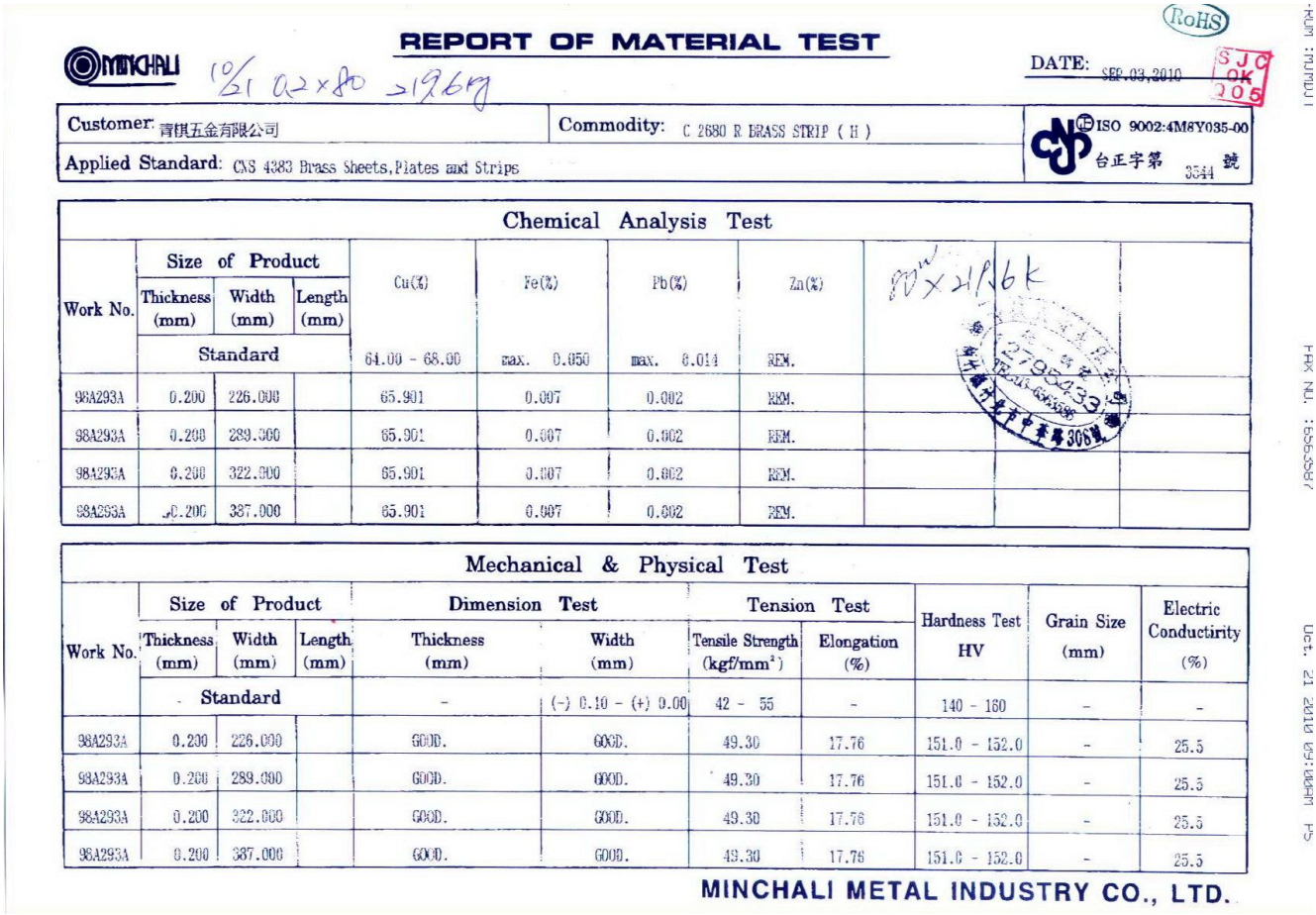

REPORT OF MATERIAL TEST

MINCHALI

RoHS

DATE: SEP.03,2010

Customer: 青棋五金有限公司

Commodity: C 2680 R BRASS STRIP (H)

Applied Standard: CNS 4383 Brass Sheets, Plates and Strips

ISO 9002:4M8Y035-00 台正字第 3544 號

Chemical Analysis Test

Work No.	Size of Product Thickness (mm)	Width (mm)	Length (mm)	Cu(%)	Fe(%)	Pb(%)	Zn(%)
Standard				64.00 - 68.00	max. 0.050	max. 0.014	REM.
98A293A	0.200	226.000		65.901	0.007	0.002	REM.
98A293A	0.200	289.000		65.901	0.007	0.002	REM.
98A293A	0.200	322.000		65.901	0.007	0.002	REM.
98A293A	0.200	387.000		65.901	0.007	0.002	REM.

Mechanical & Physical Test

Work No.	Size of Product Thickness (mm)	Width (mm)	Length (mm)	Dimension Test Thickness (mm)	Width (mm)	Tension Test Tensile Strength (kgf/mm²)	Elongation (%)	Hardness Test HV	Grain Size (mm)	Electric Conductivity (%)
Standard				-	(-) 0.10 - (+) 0.00	42 - 55	-	140 - 160	-	-
98A293A	0.200	226.000		GOOD.	GOOD.	49.30	17.76	151.0 - 152.0	-	25.5
98A293A	0.200	289.000		GOOD.	GOOD.	49.30	17.76	151.0 - 152.0	-	25.5
98A293A	0.200	322.000		GOOD.	GOOD.	49.30	17.76	151.0 - 152.0	-	25.5
98A293A	0.200	387.000		GOOD.	GOOD.	49.30	17.76	151.0 - 152.0	-	25.5

MINCHALI METAL INDUSTRY CO., LTD.