



PRODUCT SPECIFICATION

產品規格書

產品名稱 Description	產品料號 Part No.	圖號 Drawing No.
2381 Series Board to Board 0.80mm Pitch Female SMD Type Connector	2381-xxGxxDxxT-x	2381-D0000-00x
2382 Series Board to Board 0.80mm Pitch Male SMD Type Connector	2382-xxGxxDxxT-x	2382-D0000-00x

PRODUCT NAME 產品名稱	DOCUMENT No.: 文件編號	Rev. 版本	OUPIIN
Board to Board 0.80mm Pitch Female (Male) SMD Type Connector	Q2381-PSS-001	A4(I800)	歐品電子
	Approved 核准	Checked 審核	Prepared 制作
	Q.A. Section Chief	Joseph Yen	2017.10.23



PRODUCT SPECIFICATION OF Oupiin

1. SCOPE 適用範圍

This product specification defines the product performance and the test methods to ascertain the performance of the Board to Board 0.80mm Pitch Female(Male) SMD type connector, which is designed and manufactured by Oupiin Electronic Co., Ltd. This product specification is applicable but not only for those part numbers which be shown in the cover page.

本產品規格書規定了由歐品電子有限公司設計生產的Board to Board 0.80mm Pitch Female(Male) SMD型連接器，產品的特性及測試方法。本產品規格書適用於但不局限於封面所顯示的產品料號。

2. REFERENCE DOCUMENTS 參考文件

MIL-STD-1344	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
JIS C 0051	Test method for electrical components 電子零件測試方法
MIL-G-45204C	Specification for gold plating 鍍金規格
IEC-512-3	IEC standard for current carrying capacity tests IEC電流測試標準
QQ-N-290A	Specification for nickel plating 鍍鎳規格
MIL-P-81728A	Specification for tin/lead plating 鍍錫鉛規格
MIL-T-10727B	Specification for tin plating 鍍錫規格
UL498	UL standard for safety of attachment plug and receptacle UL安規要求標準
EN/ISO5961	Determination of total lead & cadmium content 總鉛和總鎘含量測定
EN1122	Determination of total lead & cadmium content 總鉛和總鎘含量測定
EN13346	Determination of heavy metals content 重金屬含量測定
EPA3052	Determination of total lead & cadmium content 總鉛和總鎘含量測定

3. FEATURE & DIMENSIONS 特征及尺寸

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見圖面。

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 參見圖面。

3.3. BILL OF MATERIAL 材料清單

Harmful material controlling follows the requirements of RoHS. The bill of material 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見圖面。



PRODUCT SPECIFICATION OF Oupiin

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參見圖面。

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 0.5AMP, rating voltage is 50V DC/AC RMS.

額定電流 0.5AMP，額定電壓 50V DC/AC RMS。

3.7 STORAGE AND OPERATING TEMPERATURE 存貯與使用溫度

Temperature range: -45°C~+125°C, including terminal temperature rise for rating current.

溫度範圍：-45°C~+125°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, and 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

4.2.1. INFRARED REFLOW 紅外線回流焊接

Each cycle consists of three consecutive phases, as shown in **Table II**.

每個焊接週期包括三個連續的階段，見附表二。

4.2.1.1. Preheat 預熱

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

溫度增加速度不超過 4°C /秒。

4.2.1.2. Soldering 焊接

Maximum allowable time above reflow temperature of 150°C is 120 seconds. Maximum temperature in this interval is 255°C, duration is 3~5 seconds.

回流焊溫度在150°C以上的時間最長不超過120秒。最高溫度255°C時間3~5秒。

4.2.1.3. Cool Down 冷卻

Cool down shall not exceed 5°C per second.

冷卻速度不超過5°C/秒。



PRODUCT SPECIFICATION OF Oupiin

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 at least.

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，每組測試至少有5個樣品。

Table I: Test Requirements and Methods

附表一：測試要求與方法

Items 項目	Requirements 要求	Test Methods 測試方法
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	30 mΩ Max. initial. 初始狀態最大 30 mΩ。	Subject mated contacts assembled in housing to closed circuit of 100 mA max. 20 mV max. MIL-STD-202, Method 307. 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 max，電壓 20 mV max。適用：MIL-STD-202，方法 307。
3. Insulation Resistance 絕緣阻抗	500 MΩ Min. 最小 500 MΩ。	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 (250 V DC±10%). 測試產品相鄰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 (250 V DC±10%)。
4. Dielectric Withstanding Voltage 耐電壓	Connector must withstand test potential of 500 VAC RMS for 1 minute, current leakage must be 0.2mA Max. 產品必須承受測試電壓 500 VAC RMS，時間 1 分鐘，漏電流不大於 0.2 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. 對產品相鄰端子間以及端子與接地間加載電壓，並測試其漏電流。適用：MIL-STD-202，方法 301。
5. Durability (Repeated Mating/Un-mating) 耐久性	Contact Resistance: 30 mΩ Max. after testing. 測試後接觸阻抗最大 30 mΩ。	Repeat mate and unmated for connector 100 cycles, at a speed of 10 cycles per minute. 重復進行配合產品 100 次插拔，速度每分鐘 10 次。
6. Connector Mating /Un-mating Force 產品插入力/拔出力	Mating force: 0.7N/Pin Max. Un-mating force: 0.15N/Pin Min. 插入力最大 0.7N/Pin，拔出力最小 0.15N/Pin。	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。
7. Contact Retention Force 端子保持力	1.2 N/Pin. Min. 最小 1.2 N/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



PRODUCT SPECIFICATION OF Oupiin

		上拔出端子。
8. Vibration Sinusoidal Low Frequency 低頻正弦振動	No electrical discontinuity greater than 1 μ s shall occur, Contact Resistance: 30 m Ω Max. 不允許出現超過 1 μ s 的瞬間斷開，接觸阻抗最大 30 m Ω 。	Subject mated connector to 10-55-10 Hz traversed in 1 minute at 1.5 mm amplitude, 2 hours each of 3 mutually perpendicular plane, 10 mA potential applied. MIL-STD-202, Method 201. 對測試產品，在頻率變化每分鐘從 10-55-10 Hz, 振幅 1.5 mm 條件下，在互相垂直的三個面上，每個面 2 小時下測量，電流 10 mA。適用：MIL-STD-202，方法 201。
9. Thermal Shock 熱衝擊	After testing, no damage, Contact Resistance 30 m Ω Max. Dielectric Strength should be OK, Insulation Resistance should be 500 M Ω Min. 測試後產品無損壞，接觸阻抗最大 30 m Ω ；耐電壓測試 OK，絕緣阻抗最小 500 M Ω 。	Temperature range from -45°C to +85°C. Start from -45°C, after 30 minutes, change to +85°C; change time is no more than 30 seconds, total 5 cycles. MIL-STD-202, Method 107, condition A. 溫度變化範圍：-45°C~ +85°C。從 -45°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 107，條件 A。
10. Humidity (Steady State) 恆溫恆濕	After testing, no damage, Contact Resistance 30 m Ω Max. Dielectric Strength should be OK, Insulation Resistance should be 500 M Ω Min. 測試後產品無損壞，接觸阻抗最大 30 m Ω ；耐電壓測試 OK，絕緣阻抗最小 500 M Ω 。	Temperature: 40 \pm 2°C. Relative Humidity: 90-95%. Duration: 96 Hours. MIL-STD-202, Method 103, condition B. 溫度：40 \pm 2°C。相對濕度：90-95%。持續時間：96 小時。適用：MIL-STD-202，方法 103，條件 B。
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. 產品在測試完成後，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: 4 to 6 seconds. Temperature: 250 \pm 5°C. MIL-STD-202, Method 208. 焊接時間：4~6 秒。 溫度：250 \pm 5°C。 適用：MIL-STD-202，方法 208。
12. Salt Spray 鹽霧	After testing, no damage, Contact Resistance 30 m Ω Max. Dielectric Strength should be OK, Insulation Resistance should be 500 M Ω Min. 測試後產品無損壞，接觸阻抗最大 30 m Ω ；耐電壓測試 OK，絕緣阻抗最小 500 M Ω 。	5 \pm 1% salt concentration 48 hours 35 \pm 2°C MIL-STD-202, Method 101, condition B. 鹽水濃度 5 \pm 1%，時間 48 小時，溫度 35 \pm 2°C。 適用：MIL-STD-202，方法 101，條件 B。
13. High Temperature Life 高溫老化	After testing, no damage, Contact Resistance 30 m Ω Max. Dielectric Strength should be OK, Insulation	Subject product to 125 \pm 3°C for 96 hours continuously. MIL-STD-202, Method 108, condition A.



PRODUCT SPECIFICATION OF Oupiin

	Resistance should be 500 MΩ Min. 測試後產品無損壞，接觸阻抗最大 30 mΩ；耐電壓測試 OK，絕緣阻抗最小 500MΩ。	產品置於 125±3°C 連續 96 小時。 適用：MIL-STD-202, 方法 108，條件 A。

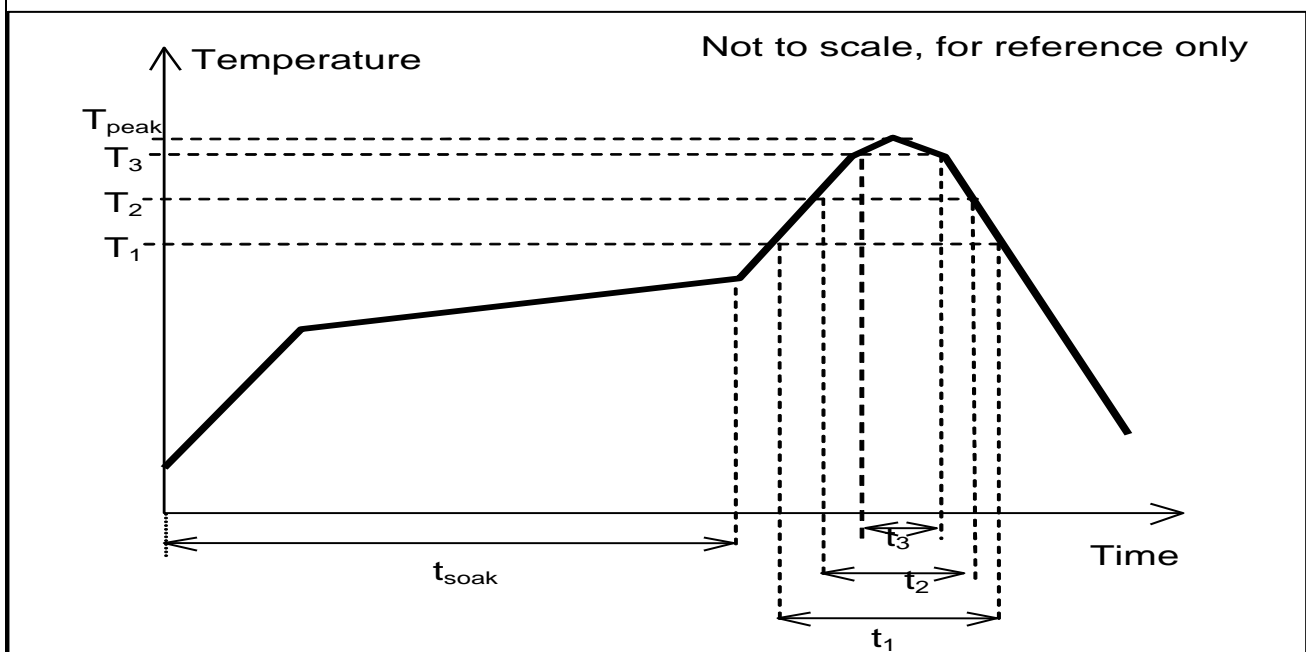
Table II: Reflow Soldering Profile

附表二：回流焊接曲線圖

Lead-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}	250°C (-0/+5°C)
Temperature gradient in cooling 冷卻時溫度幅度		-5°C/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 : 036-LCP (NC)

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Nippon Petrochemicals Co. LTD.
Xydar Business Group

TYPICAL PROPERTIES OF XYDAR[®] MG-350PRL

Properties	Method	Unit	MG-350PRL
Tensile strength 引張強さ	ASTM D638	MPa	116
Elongation 引張破壊伸び	ASTM D638	%	3.0
Flexural strength 曲げ強さ	ASTM D790	MPa	160
Flexural modulus 曲げ弾性率	ASTM D790	GPa	13.3
Izod impact strength (unnotched) アイゾッド衝撃強度	ASTM D256	KJ/m ²	42
DTUL 荷重たわみ温度 18.5 kgf/cm ²	ASTM D648	°C	275
Oven Blister Test ¹⁾ オープンブリストア試験 1mm dumbbell, 60min	NPCC original	°C	310
Mold Shrinkage ²⁾ 成形収縮率	NPCC original	%	MD: 0.06
			TD: 0.55

1) Minimum oven temperature of blister breaking out on the specimen.

2) Mold: size 100*100*1mm, film gate

The data shown in this paper are based on our laboratory data, and not always directly applicable to your products used under different conditions.

XYDAR[®] is a trademark of Solvay Advanced Polymers, L.L.C.



PRODUCT SPECIFICATION OF Oupiin

Material Housing :UL

QMFZ2 Component - Plastics

Monday, March 20, 2006

E91944

NIPPON OIL CORP

3-1 YAKO 2-CHOME KAWASAKI-KU KAWASAKI-SHI KANAGAWA 210-8545 JP

Material Designation: **MG-350(r3), LCP MG-350(r3)**

Product Description: Liquid Crystal Aromatic Polymer (LCAP), designated "Xydar" furnished as pellets.

Color	Min. Thick. (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str	IEC GWIT	IEC GWFI
BK	0.17	V-0	-	-	130	130	130	-	-
NC	0.3	V-0	-	-	130	130	130	-	-
	0.5	V-0	2	2	130	130	130	-	-
	0.89	V-0	3	0	240	220	240	-	-
	1.5	V-0	1	1	240	240	240	-	-
	3	V-0	1	0	240	240	240	-	-

CTI: 3 IEC CTI (V): - HVTR: 0 D495: 4 IEC Ball Pressure (C): -

Dielectric Strength (kV/mm): 45

Volume Resistivity (10¹⁰ohm-cm): 12

Dimensional Stability (%): 0

ISO Tensile Strength (MPa): -

ISO Flexural Strength (MPa): -

ISO Heat Deflection (C): -

ISO Tensile Impact (kJ/m²): -

ISO Izod Impact (kJ/m²): -

ISO Charpy Impact (kJ/m²): -

r3 Virgin and Regrind from 26-50% by weight inclusive have the same Flame and Tensile Impact characteristics.

Report Date: 1/5/1990

Underwriters Laboratories Inc®

UL94 small-scale test data does not pertain to building materials, furnishings and related contents. UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in components and parts of end-product devices and appliances, where the acceptability of the combination is determined by ULL.

PRODUCT SPECIFICATION OF Oupiin

Material Contact -2381(Male): Copper Alloy (Brass)

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GUO CHING PRECISION CO., LTD

試驗成績表

REPORT OF MATERIAL TEST

客戶: 弘振企業股份有限公司	國慶精密股份有限公司
Customer	桃園縣龜山鄉大崗村大湖路2-17號
品名: C2680-H	尺寸: 0.250x 230.0x C
Product	Size
料號: 950327030	日期: 96/03/14
Lot No	Date
	TEL: 03-2115391-8
	FAX: 03-2115399

化學成份

CHEMICAL COMPOSITION

元素 ELEMENT	Cu %	Fe	Pb
規範 MAX	68.000	0.050	0.090
SPEC MIN	64.000	-	-
分析值 ANALYSIS VALUE	64.714	0.010	0.004

試驗

TEST RESULT

項目 ITEM	抗張 Tensile Strength kgf/mm ²	伸長 Elongation %	硬度 Hardness Test o	結晶粒度 Grain Size µm	導電率 Electric Conductivity
規範 CONDITION	-	-	HV	-	-
SPEC MAX	55.000	-	175.000	-	-
SPEC MIN	42.000	10.000	105.000	-	-
測驗值 MEASURE-MENT VALUE	48.740	17.920	150-152	-	25.300

Approved by:



Checked by:



PRODUCT SPECIFICATION OF Oupin

Material Contact -2382(Female): 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	國慶精密股份有限公司
Customer	桃園縣龜山鄉大崗村大湖路2-17號
品名: C5191-H	尺寸: 0.200x 29.5x C
Product	TEL: 03-2115391~8
料號: 1020109011	日期: 102/01/29
Lot No	FAX: 03-2115399

化學成份

CHEMICAL COMPOSITION

元素 ELEMENT	Cu	P	Sn
規範 MAX	-	0.350	7.000
SPEC 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 Conductivity
規範 CONDITION	-	-	HV	-	-
SPEC MAX	70.000	-	200.000	-	-
SPEC MIN	58.000	8.000	180.000	-	-
測驗值 MEASURE-MENT VALUE	61.430	23.000	195.000	-	14.500



Approved by:



Checked by:





PRODUCT SPECIFICATION OF Oupin

Metal Pad : Metal(SUS-304)

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SHENZHEN MINGSCHIN INDUSTRIAL MATERIAL CO., LTD.
深圳市明鑫工业材料有限公司

产品检测单

客户: 坤泽华

产品名称	不锈钢	产品规格	0.15mm
产品牌号	SUS304	产品状态	H
厚度公差	±0.01	宽度公差	+0,-0.1

化学成份 (%)

执行标准: JIS G4313:1996

化学元素	CAS.NO	实测含量	标准含量	化学元素	CAS.NO	实测含量	标准含量	化学元素	CAS.NO	实测含量	标准含量
铜 Cu	7440-50-8	-----	-----	锌 Zn	7440-66-6	-----	-----	铁 Fe	7439-89-6	余量	余量
锡 Sn	7440-31-5	-----	-----	磷 P	7723-14-0	0.017	≤0.045	铅 Pb	7439-92-1	-----	-----
锑 Sb	7440-36-0	-----	-----	硅 Si	7440-21-3	0.36	≤1.0	铋 Bi	7440-69-9	-----	-----
镍 Ni	7440-02-0	8.42	8.0-10.5	锰 Mn	7439-96-5	1.22	≤2.0	铝 Al	7429-90-5	-----	-----
银 Ag	7440-22-4	-----	-----	砷 As	13826-64-7	-----	-----	镉 Cd	7440-43-9	-----	-----
硫 S	7704-34-9	0.01	≤0.03	钴 Co	7440-48-4	-----	-----	碳 C	7440-44-0	0.04	≤0.08
镁 Mg	7439-95-4	-----	-----	铬 Cr	7440-47-3	18.29	18-20	杂质总和	-----	-----	-----

物理性能:

测试项目	实测值	标准值	测试项目	实测值	标准值
抗拉强度 N/mm ²	1196	/	延伸率 (%)	/	/
杯突值	—	—	维氏硬度 HV	374	370-410

生产批号: 20130711001

检验员: 奉小勇

确认: 王锡超