



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.
9001 Series DIN41612 Mixed Style H7/F24 Male Connector	9001-65311CxxA	9001D65001
9001 Series DIN41612 Mixed Style H7/F24 Female Connector	9001-66311CxxL1A	9001D66002

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PRODUCT NAME 產品名稱	DOCUMENT No. 文件編號	Rev. 版本	OUPIIN
9001 SERIES DIN41612 MIXED STYLE H7/F24 MALE/FEMALE CONNECTOR	9001spec-65+66	B	歐品電子
	Approved 核准	Checked 審核	Prepared 制作
	Q.A. Section Chief	Joseph Yen	07.26/2017



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 DIN41612 Mixed Style H7/F24 Male/Female 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 DIN41612 H7/F24 混合型公/母端連接器，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。



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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

F Type Rating current is 5.6A, H Type Rating current is 15A, rating voltage is 150V DC/AC RMS.
F 類型額定電流 5.6A · H 類型額定電流 15A · 額定電壓 150V DC/AC RMS。

3.7 STORAGE AND OPERATING TEMPERATURE 存貯與使用溫度

Temperature range: -55°C~+125°C, including terminal temperature rise for rating current.
溫度範圍：-55°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. WAVE SOLDER 波峰焊接

Each cycle consists of three consecutive phases.
每個焊接週期包括三個連續的階段。

4.2.1.1. Preheat 預熱

The steady temperature of the preheat zone is 90~125°C.
預熱區最終溫度控制在 90~125°C。

4.2.1.2. Soldering 焊接

To avoid the secondary tin-melting, the temperature on PCB upper surface is 160°C Max. for products with lead, or 200°C Max. for lead-free products. The temperature of the PCB bottom surface shall not be exceed 100°C more than the temperature of the PCB upper surface. The peak temperature is during 230~255°C for products with lead, or 255~270°C for lead-free products. The tin dip time is duration for 3~10 seconds.

有鉛產品板面溫度不得超過 160°C，無鉛產品板面溫度不得超過 200°C，以防止貼片零件二次熔錫。板面溫度與板底的溫度溫差不得超過 100°C。板下溫度峰值有鉛產品維持在 230~255°C。



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無鉛產品控制在 255~270°C。浸錫時間控制在 3~10 秒。

4.2.1.3. Cool Down 冷卻

Cool down shall not exceed 6°C per second.

冷卻速度不超過 6°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。

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。



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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	F Type 30 mΩ Max. initial. H Type 8mΩ max. initial. F 類型初始狀態最大 30 mΩ。 H 類型初始狀態最大 8 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 100mA max，電壓 20 mV max。適用：MIL-STD-202，方法 307。
3. Insulation Resistance 絕緣阻抗	1000 MΩ Min. 最小 1000 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 (500 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 (500 V DC±10%)。
4. Dielectric Withstanding Voltage 耐電壓	F Type Terminal must withstand test potential of 1550 VAC RMS for 1 minute, current leakage must be 0.3mA Max. H Type Terminal must withstand test potential of 3100 VAC RMS for 1 minute, current leakage must be 1.0mA Max. F 類型端子必須承受測試電壓 1550 VAC RMS，時間 1 分鐘，漏電流不大於 0.3 m A。H 類型端子必須承受測試電壓 3100 VAC RMS，時間 1 分鐘，漏電流不大於 1.0 m A。	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 Rise in relation to initial values 5mΩ Max. After testing. 測試後接觸阻抗比初始值增大不超過 5 m Ω。	Repeat mate and unmated for connector 400 cycles, at a speed of 10 cycles per minute. 重復進行配合產品 400 次插拔，速度每分鐘 10 次。



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<p>6. Pin Mating</p> <p>/Un-mating Force 單 支端子插入力/拔 出力</p>	<p>F Type Mating force: 1.5N /Pin Max. H Type Mating force: 8.0N /Pin Max. F Type Un-mating force: 0.3N /Pin Min. H Type Un-mating force: 1.0N /Pin Min. F 類型插入力最大 1.5N /Pin。 H 類型插入力最大 8.0N /Pin。 F 類型拔出力最小 0.3N /Pin。 H 類型拔出力最小 1.0N /Pin。</p>	<p>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。</p>
<p>7. Contact Retention Force 端子保持力</p>	<p>F Type 14.7N /Pin. Min. H Type 19.6N /Pin. Min. F 類型最小 14.7N /Pin。 H 類型最小 19.6N /Pin。</p>	<p>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。</p>
<p>8. Vibration Sinusoidal Low Frequency 低頻正弦振動</p>	<p>No electrical discontinuity greater than 1 μs shall occur, Contact Resistance Rise in relation to initial values 5mΩ Max. After testing. 不允許出現超過 1 μs 的瞬間斷開·測試後接觸阻抗比初始值增大不超過 5 mΩ。</p>	<p>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, 100 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 100 mA。適用：MIL-STD-202·方法 201。</p>
<p>9. Thermal Shock 熱衝擊</p>	<p>After testing, no damage, Contact Resistance Rise in relation to initial values 5mΩ Max. Dielectric Strength should be OK, Insulation Resistance should be 1000 MΩMin. 測試後產品無損壞·觸阻抗比初始值增大不超過 5 mΩ；耐電壓測試 OK·絕緣阻抗最小 1000 MΩ。</p>	<p>Temperature range from -55°C to +85°C. Start from -55°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：-55°C~ +85°C。從 -55°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。</p>
<p>10. Humidity (Steady State) 恆溫恆濕</p>	<p>After testing, no damage, Contact Resistance Rise in relation to initial values 5mΩ Max. Dielectric Strength should be OK, Insulation Resistance should be 1000 MΩMin. 測試後產品無損壞·觸阻抗比初始值增大不超過 5 mΩ；耐電壓測試 OK·絕緣阻抗最小 1000MΩ。</p>	<p>Temperature: 40±2°C. Relative Humidity: 90-95%. Duration: 96 Hours. MIL-STD-202, Method 103, condition B. 溫度：40±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。</p>
<p>11. Solder-ability 可焊性</p>	<p>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.</p>	<p>Soldering time: 4 to 6 seconds. Temperature: 260±5°C. MIL-STD-202, Method 208. 焊接時間：4~6 秒。溫度：260±5°C。 適用：MIL-STD-202·方法 208。</p>



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	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。	
12. Salt Spray 鹽霧	After testing, no damage, Contact Resistance Rise in relation to initial values 5mΩ Max. Dielectric Strength should be OK, Insulation Resistance should be 1000 MΩMin. 測試後產品無損壞，觸阻抗比初始值增大不超過 5 mΩ；耐電壓測試 OK，絕緣阻抗最小 1000 MΩ。	5±1% salt concentration 48 hours 35±2°C MIL-STD-202, Method 101, condition B. 鹽水濃度 5±1%，時間 48 小時，溫度 35±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 Rise in relation to initial values 5mΩ Max. Dielectric Strength should be OK, Insulation Resistance should be 1000 MΩMin. 測試後產品無損壞，觸阻抗比初始值增大不超過 5 mΩ；耐電壓測試 OK，絕緣阻抗最小 1000 MΩ。	Subject product to 125±3°C for 96 hours continuously. MIL-STD-202, Method 108, condition A. 產品置於 125±3°C 連續 96 小時。適用：MIL-STD-202，方法 108，條件 A。



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Material Housing : 004-PBT

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長春人造樹脂廠股份有限公司

台北市 10477 松江路三零一號七樓

CHANG CHUN PLASTICS CO.,LTD.

TLX:2253 LONGLITE

NO.301 SONGKIANG ROAD, 7FL., TAIPEI. 10477 TAIWAN

FAX: (02)25033378

CABLE ADDRESS: LONGLITE TAIPEI

TEL: (02)25038131

材質證明

MATERIAL FORMULATION CONFIDENTIAL REPORT

廠商 Customer :

材質名稱 Type of Material : PBT (Poly Butylene terephthalate)聚丁烯對苯二甲酸酯

規格 Grade : PBT 4130

說明 Description :

PBT-4130 複合材料包含 PBT 純樹脂、玻纖、溴化耐燃劑及少量添加劑。
PBT 4130 完全符合 RoHS 指令的規定。

The raw material of PBT-4130 compound contains PBT pure resin, glass fiber, flame retardant, and few of additives. Our PBT-4130 are completely up to the regulations specified in RoHS directive.

PBT 複合材料成分表

Chemical Composition of PBT Compound

規格 Grade			4130
組成 Chemical Composition	Molecular formula	CAS Number	含量(%) Content (%)
1 PBT 樹脂 PBT resin	$(C_{12}H_{12}O_4)_n$	26062-94-2	40~56
2 玻璃纖維 Glass Fiber	$SiO_2 \cdot CaO \cdot Al_2O_3$	65997-17-3	30
3 耐燃劑 Flame Retardant	$(C_{18}H_{16}Br_4O_3)_n$ $(C_{16}H_{10}Br_4O_3)_n$	68928-70-1 71342-77-3	12~17
4 耐燃劑 Flame Retardant	Sb_2O_3	1309-64-4	2~5
5 添加劑 Additives	N.A.	NA	0~6

供應商 MATERIAL SUPPLIER

Company: CHANG CHUN PLASTICS CO., LTD KAOHSIUNG FACTORY

Signature: Ching-Neng Tseng / Section Manager / Technical Section

Address: No.14 KUNG-YEH 1ST ROAD. JEN-WU INDUSTRIES DISTRICT,

KAOHSIUNG, TAIWAN, ROC.

Date: Sep.09, 2006





PRODUCT SPECIFICATION OF Oupiin

Material Housing :UL

UL iQ for Plastics Yellow Card

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QMFZ2 Component - Plastics

Monday, February 26, 2007

E59481

CHANG CHUN PLASTICS CO LTD
7TH FL 301 SONGKIANG RD TAIPEI TW

Material Designation: **4130 (a)**

Product Description: Polybutylene Terephthalate (PBT), glass reinforced, designated "LONGLITE" furnished as pellets.

Color	Min. Thick. (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str	IEC GWIT	IEC GWFI
ALL	0.40	V-0	4	0	75	75	75	-	-
	0.74	V-0	4	0	120	120	140	-	-
	1.5	V-0	3	0	120	120	140	-	-
	3.0	V-0	2	0	120	120	140	-	-

CTI: 2 IEC CTI (V): - HVTR: 4 D495: 7 IEC Ball Pressure (°C): 210

Dielectric Strength (kV/mm): 28 Volume Resistivity (10⁹ohm-cm): 14 Dimensional Stability(%): -
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): -

(a) Ball pressure temperature of 210 C in accordance with IEC.695.10.2 and IEC 950.5.4.10

Report Date: 9/1/1987

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 ULI.



PRODUCT SPECIFICATION OF Oupiin

Material Contact : Copper Alloy (Brass C2680)

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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.: 3C1556

DATE: DEC.26,2014

Customer 顧客名稱 : 歐品電子有限公司
Commodity 商品名稱 : C 2680 R BRASS STRIP (H)
Applied Standard 引用標準 : JIS H 3100 Copper and Copper alloy sheets, plates and strips

Manufacture No.	銅捲號	3AA046A	
(Specification)	產品規格	Standard	
Thickness (mm)	產品厚度		0.400
Width (mm)	產品寬度		27.500
Length (mm)	產品長度		
(Chemical Analysis Test)	化性測試		
Cu(%)	銅	64.000-68.000	64.947
Fe(%)	鐵	max. 0.050	0.013
Pb(%)	鉛	max. 0.0500	0.0003
Zn(%)	鋅	REM.	REM.
(Mechanical & Physical Test)	物性測試		
Thickness Test (mm)	厚度測試	-0.015 +0.010	0.394
Width Test (mm)	寬度測試	-0.10 +0.00	GOOD
Tensile Strength (kgf/mm ²)	抗拉強度	42.00 - 55.00	51.06
Elongation (%)	伸長率	-	17.92
Hardness Test (Hv)	硬度	140.0 - 160.0	158.0 - 160.0
Grain Size (mm)	結晶粒度	-	0.015
Electric Conductivity (%)	導電率	-	26.20
(Other Information)	其他資訊		
Delivery No.	出貨單號	3CA079	
Customer Purchase Order	採購單號	PO.B02A14101603	



QA Supervisor: 周建偉

A980301 G3A00203AH

MINCHALI METAL INDUSTRY CO., LTD.
名佳利金屬工業股份有限公司
11, Pei Yuan Road, Chung Li City, Taiwan, R.O.C.
Tel : (03)4526141-5 (03)4526017-9
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PRODUCT SPECIFICATION OF Oupiin

Material Lock : Copper Alloy (Phosphor Bronze C5191)

[SGS Test Report Click here](#)

如需 SGS 測試報告請點選此處



REPORT OF MATERIAL TEST

DATE: AUG.05,2000

Customer: 亞松貿易有限公司	Commodity: C 5191 R PHOSPHOR BRONZE STRIP (H)	ISO 9002:4M8Y035-00 台正字第 3545 號
Applied Standard: CNS 9503 Phosphor Bronze Sheets, Plates and Strips		

Chemical Analysis Test								
Work No.	Size of Product			P (%)	Sn (%)	Cu+Sn+P (%)		
	Thickness (mm)	Width (mm)	Length (mm)					
	Standard			0.030 - 0.350	5.50 - 7.00	min. 99.50		
87C194A	0.400	624.000		0.139	5.979	99.967		

Mechanical & Physical Test										
Work No.	Size of Product			Dimension Test		Tension Test		Hardness Test HV	Grain Size (mm)	Electric Conductivity (%)
	Thickness (mm)	Width (mm)	Length (mm)	Thickness (mm)	Width (mm)	Tensile Strength (kgf/mm ²)	Elongation (%)			
	Standard			-	(-) 0.10 - (+) 0.00	60 - 70	min. 8	190 - 200	-	-
87C194A	0.400	624.000		GOOD.	GOOD.	60.70	21.66	190.0 - 191.0	-	14.6

MINCHALI METAL INDUSTRY CO., LTD.

11, Pei Yuan Road, Chung Li City, Taiwan, R. O. C.

QC Supervisor

陳理共

4020203