

# PRODUCT SPECIFICATION

## (產品規格書)

### Ordering information

4976- 1X 12 T S B  
 Series 1: Single Row No. of Pin Count T: Tin Plated S : Straight B: Bulk Package  
 02~12 R : Right Angle

A1:NOV.01/2010.  
 A2:DEC.26/2014. .(修改材證及連結網址路徑)

PRODUCT NAME (產品名稱)	DOCUMENT No.: (文件編號)	Rev. (版本)	OUPIIN
Micro Fit  3.0mm Connector  (RoHS)	4976spec-1W	A2(I732)	(歐品)
	Approved (核準)	Checked (審核)	Prepared (製作)
	Q.A. Section Chief	Amy Chiu	DEC.26/2014



# PRODUCT SPECIFICATION OF OUPIIN

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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 Micro Fit 3.0 mm 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 Micro Fit 3.0 mm 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-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。) Bulk Packag 包裝

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

Rating current : (額定電流)

Wire size	# 20	# 22	# 24	# 26	# 28	# 30
Amperes	5.0 A	5.0 A	4.0 A	3.0 A	2.0 A	1.0 A

Rating voltage is 250V DC/AC RMS.

額定電壓 250V DC/AC RMS。

## 3.7 OPERATING TEMPERATURE 使用溫度

Temperature range: -25°C~+85°C, including terminal temperature rise for rating current.

溫度範圍：-25°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)

#### WAVE SOLDERING (波峰接)

Each cycle consists of three consecutive phases.

(每個焊接週期包括三個連續的階段)

#### 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)

#### 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 220~245°C for products with lead, or 235~260°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220~245°C，無鉛產品控制在235~260°C。浸錫時間控制在3~10秒。)

#### 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；)

**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)	10 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 (250 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 )(250V DC±10%)
4. Dielectric Strength (耐電壓)	Connector must withstand test potential of 1500 V AC for 1 minute. Current leakage must be 0.5 mA max. (樣品必須承受測試電壓 1500V 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. 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: 245±5°C. (最高溫度：245±5°C.)

Material Housing : 017-LCP (Black)

[SGS Test Report Click here](#)

[如需 SGS 測試報告請點選此處](#)

## 1. General physical properties of VECTRA® E130i

Table 1-1 General properties (ISO)

Item	Unit	Testing Method	High Heat Resistance/High Flow
			E130i
			Glass Fiber, Standard
Density	g/cm <sup>3</sup>	ISO 1183	1.61
Tensile strength*	MPa	ASTM D638	175
Tensile elongation*	%	ASTM D638	2
Flexural strength	MPa	ISO 178	220
Flexural modulus	MPa	ISO 178	15000
Flexural strain	%	ISO 178	2.3
Charpy impact strength(notched)	kJ/m <sup>2</sup>	ISO 179/1eA	35
Temperature of deflection under load(1.8MPa)	°C	ISO 75-1,2	280
Mold Shrinkage(80×1mm <sup>2</sup> , Flow direction, Injection pressure5MPa)	%		0.02
Mold Shrinkage(80×1mm <sup>2</sup> , Transverse direction, Injection pressure5MPa)	%		0.54
Mold Shrinkage(80×1mm <sup>2</sup> , Flow direction, Injection pressure7MPa)	%		-
Mold Shrinkage(80×1mm <sup>2</sup> , Transverse direction, Injection pressure7MPa)	%		-
Volume resistivity	Ohm·cm	IEC 60093	1.0×10 <sup>16</sup>
Surface resistivity	Ohm	IEC 60093	1.0×10 <sup>16</sup>
Dielectric constant(1kHz)		IEC 60250	4.3
Dielectric constant(1MHz)		IEC 60250	3.8
Dielectric constant(10GHz)			3.6
Dielectric dissipation factor(1kHz)		IEC 60250	0.017
Dielectric dissipation factor(1MHz)		IEC 60250	0.032
Dielectric dissipation factor(10GHz)			0.007
Dielectric breakdown strength(Thickness 1mm)	kV/mm	IEC 60243-1	44
Dielectric breakdown strength(Thickness 3mm)	kV/mm	IEC 60243-1	24
Tracking resistance (CTI)	CTI	IEC 60112	125
Arc resistance	s		130
Flammability		UL94	V-0

All figures in the table are the typical values of the material and not the minimum values of the material specifications.

\*1)For qualified values of UL (Underwriters Laboratories Inc.) refer to the yellow card (File No.E106764 ) issued by UL.

\*2)This grade comes under Item 16 of Annex 1 of the Export Trade Control Order on the basis of the Foreign Exchange and Foreign Trade Law of Japan.



# PRODUCT SPECIFICATION OF OUPIIN

## Material Housing :UL

UL iQ™

頁 1 / 2

for enhanced search functionality please visit UL's iQ™ family of databases

Component - Plastics

E106764

### POLYPLASTICS CO LTD

18-1 KONAN 2 CHOME, MINATO TOKYO 1088280 JP

### E130i(d)(e)(f1)

Liquid Crystal Polymer (LCP), thermotropic aromatic polyester, "VECTRA" or "LAPEROS", furnished as pellets

Color	Min Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
NC, BK	0.75	V-0	2	0	240	220	240
	1.5	V-0	1	0	240	220	240
	3.0	V-0	0	0	240	220	240

Comparative Tracking Index (CTI): 4

Inclined Plane Tracking (IPT): -

Dielectric Strength (kV/mm): 39

Volume Resistivity (10<sup>12</sup> ohm-cm): 16

High-Voltage Arc Tracking Rate (HVTR): 0

High Volt, Low Current Arc Resis (D495): 5

Dimensional Stability (%): 0

(d) - Virgin and regrind up to 50% by weight incl., have the same basic material characteristics in NC and BK with a minimum thickness of 0.75mm.

(e) - Regrind from 26-50% by weight inclusive has an Impact RTI of 180C at thicknesses greater than 1.5mm.

(f1) - Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.

ANSI/UL94 small-scale test data does not pertain to building materials, furnishings and related contents. ANSI/UL94 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: 1992-08-19

Last Revised: 2014-08-22

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## IEC and ISO Test Methods

Test Name	Test Method	Units	Thickness Tested (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	0.75	V-0 (NC, BK)
			1.5	V-0 (NC, BK)
			3.0	V-0 (NC, BK)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	C	0.75	960
			1.5	960
			3.0	960
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	C	0.75	850
			1.5	850
			3.0	900
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
IEC Ball Pressure	IEC 60695-10-2	C	-	-
ISO Heat Deflection (1.80 MPa)	ISO 75-2	C	-	-
ISO Tensile Strength	ISO 527-2	MPa	-	-
ISO Flexural Strength	ISO 178	MPa	-	-
ISO Tensile Impact	ISO 8256	kJ/m <sup>2</sup>	-	-
ISO Izod Impact	ISO 180	kJ/m <sup>2</sup>	-	-
ISO Charpy Impact	ISO 179-2	kJ/m <sup>2</sup>	-	-

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The materials covered in this database are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. THE FINAL ACCEPTANCE OF THE COMPONENT IS DEPENDENT UPON ITS INSTALLATION AND USE IN COMPLETE PRODUCTS SUBMITTED TO UNDERWRITERS LABORATORIES.

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2014-11-24





# PRODUCT SPECIFICATION OF OUPIIN

Material Contact :Copper Alloy (Brass)

[SGS Test Report Click here](#)

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## 鼎州特殊金屬導線有限公司

台北縣三峽鎮介壽路1段318巷15號  
TEL: 02 2673-9458 FAX: 02 2671-5587

國際標準：JIS 國際標準 H3260

### 檢驗報告表

CUSTOMER: \_\_\_\_\_

DATE 2007/11/27

SIZE : 方型 0.64mm

MATERIAL: C-2700

#### 電腦分析儀化學成份表

元素名稱	標準範圍	實測值	元素名稱	標準範圍	實測值
銅 Cu	63~67%	65.30%	鋅 Zn	REN	REN
鉛 Pb	<0.07%	0.03%	鎳 Ni	0	0
鐵 Fe	<0.05%	0.02%	錫 Sn	0	0
鎘 Cd	0	0	磷 P	0	0

#### 物理性質：

檢驗項目 TEST ITEM	單位 UNIT	規格值 SPECIFICATION VALUE	實測值 RESULT
外徑 DIAMETER	m.m.	0.640 ± 0.01 m.m.	0.641~0.644 m.m.
對角徑 DIAGONAL DIAMETER	m.m.	OVER 0.830 m.m.	0.865 ~0.866 m.m.
伸長率 ENOGATION	%	UNDER 5 %	1.6 %
抗張強度 TENSILE STRENGTH	kgf / m.m. <sup>2</sup>	OVER 60	78.8
彎折實驗 BENDING	times	OVER 2 TIMES	AVG. 4.5 TIMES
銅 / 鋅比 CHEMICAL COMPOSITION	%	63 ~ 67 / 37 ~ 33	65.30 / 34.70
外觀		表面平滑光亮,不得有傷痕; 銹斑等缺點	合格

主管: 賴孝哲

檢驗人員:

林嘉鴻