





# PRODUCT SPECIFICATION OF OUPIIN

## 1. SCOPE (範圍)

This product specification defines the product performance and the test methods to ascertain the performance of the Slim H.D D-SUB Right Angle 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 Slim H.D D-SUB Right Angle 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-202F	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.

Products required carrier tape should meet the proper specification per purchase order. Connector



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container and the packaging specification is shown in package drawing.

(產品包裝可依客戶指定要求.本產品採用 Tray Packag 包裝，具體見包裝圖面.)

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

Rating current is 3.0A, rating voltage is 150V DC/AC RMS.

額定電流 3.0A，額定電壓 150V DC/AC RMS。

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

Temperature range: -55°C~+105°C, including terminal temperature rise for rating current.

溫度範圍：-55°C~+105°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-202F. Finish shall be free of contaminants.

(產品可焊性符合 MIL-STD-202F 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 220~230°C for products with lead, or 230~245°C for lead-free products. The tin dip time is duration for 3~ 5 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220~230°C，無鉛產品控制在230~245°C。浸錫時間控制在3~ 5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.)



## **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)	20 mΩ Max. initial (最大.初態)	Subject mated contacts assembled in housing to closed circuit of 100 mV max. at open circuit voltage of 20 m A 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 mV，電壓 20 mA 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 (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 1000 V AC for 1 minute. Current leakage must be 0.5 mA max. (樣品必須承受測試電壓 1000V 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 500 cycles specified at the rate of 25mm/min (重復進行配合產品 500 次插拔.)
6. Connector Mated / Unmated Force (產品插拔力)	Mated force : 5.5 kg max. Unmated force : 1.0.kg min. per contact 插入力: 5.5 kg 最大 拔出力: 1.0 kg 最小	Measure force necessary to unmated between the counterparts connectors.. (軸向力以 25±3mm/分的速度從塑膠本體對插後拔出)



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<p>7. Salt Spray (鹽霧)</p>	<p>After testing, no damage, Contact Resistance 50 mΩ max.. (測試後,產品無損壞,接觸阻抗: 50 mΩ最大)</p>	<p>5±1% salt concentration 24±1 hours 35±2°C MIL-STD-202, Method 101 Condition B. (鹽水濃度(重量比) 5±1%, 時間 24±1 小時, 溫度 35±2°C; MIL-STD-202, 方法 101 條件 B.)</p>
<p>8. 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. (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;)</p>	<p>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.)</p>



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Material Housing : 038-PA6T (Black)

[SGS Test Report Click here](#)

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ARLEN<sup>1)</sup> 的各種規格及物性

Mitsui Chemicals, Inc.

Properties	Units	A315	A335	A350	AE4200	AE4200N	AE2230	C230	C240	C215N	C230N	C240N	CH230N	CH245NK	C430N	C630N	C645NK	E430N	E430NS	E430N(T5)	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 <sup>2)</sup>	70 <sup>2)</sup>	200	170	210	110	170	180	160	160	170	170	150	180	180	190	150
引伸破斷長度	%	3	3	3	50 <sup>2)</sup>	4 <sup>2)</sup>	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)	(凹口) J/m	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)	℃	330	330	330	330	330	330	310	310	310	310	310	310	310	310	310	310	310	320	320	320
玻璃轉化溫度	℃	125	125	125	125	125	125	85	85	85	85	85	85	85	85	85	85	85	95	95	95
熱變型溫度 (有荷重)	1.82MPa 10 <sup>2</sup> Hz 10 <sup>1</sup> Hz	290	310	310	310	145	300	300	300	280	295	295	290	290	293	295	290	305	305	305	300
線膨脹係數 機械方向	MD 10 <sup>-3</sup> /℃	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
線膨脹係數 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 <sup>16</sup>	10 <sup>16</sup>	10 <sup>16</sup>	10 <sup>16</sup>	10 <sup>15</sup>	10 <sup>16</sup>	10 <sup>16</sup>	10 <sup>16</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>	10 <sup>15</sup>
介電係數	10 <sup>2</sup> 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 <sup>2</sup> 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
介電破損電壓	kV/mm	25	27	29	23	31	27	28	30	17	17	22	25	22	26	22	19	24	24	24	24
其它特性																					
線收縮率 (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
線收縮率 (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)	100℃ 23℃	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℃	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
流動長度 <sup>2)</sup>	0.5mm 1mm	—	—	—	—	—	—	—	—	—	—	33	30	40	36	53	70	48	56	65	56
Peak Temperature under self-heating test	Minu Method	—	—	—	—	—	—	250 <sup>2)</sup>	—	—	—	—	240 <sup>2)</sup>	—	240 <sup>2)</sup>	240 <sup>2)</sup>	235 <sup>2)</sup>	250 <sup>2)</sup>	250 <sup>2)</sup>	250	250

2004-7-30

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

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





# PRODUCT SPECIFICATION OF OUPIIN

Material Housing :UL

## NYLON 6T 材質證明

MITSUI CHEMICALS INC  
 ENGINEERED MATERIALS GROUP  
 2-5 KASUMIGASEKI 3-CHOME  
 CHIYODA-KU TOKYO 100-6070, JAPAN. E52579

Material Dsg	Color	Min. Thk mm	Flame Class	H		RTI		H V	D 4	C T
				W I	A I	Elec	Mech Imp Str			

PA alloy, furnished as pellets.

CE 1600K	BK	0.75	HB			65	65	65		
CE 1600K(r)	BK	0.75	HB			65	65	65		

Polyamide (PA), alloy, designated "Arlen" furnished as pellets.

AE4200N(e)	ALL	0.89	HB			65	65	65		
GE4200N(e)	ALL	0.87	V-0			65	65	65		
CE2200NK	BK	0.86	V-0			65	65	65		
C215N(e)	ALL	0.75	V-0			65	65	65		2
C230N(e)	ALL	0.75	V-0			65	65	65		2
C240(e)	ALL	0.75	HB			65	65	65		
		1.5	HB			115	95	115		
		3	HB			115	105	115		
C240N(e)	ALL	0.75	V-0	0	0	65	65	65		
		1.5	V-0	0	0	120	105	115		
		3	V-0	0	0	120	115	125	1	6
C240NK(f1)	BK	0.75	V-0	0	0	65	65	65		
		1.5	V-0	0	0	65	65	65		
		3	V-0	0	0	65	65	65	1	6
C430N(e)	ALL	0.85	V-0			65	65	65		
		3	V-0			65	65	65		1
C430N(e)(r)	ALL	0.85	V-0			65	65	65		2
E430N#	ALL	0.8	V-0			65	65	65		
C630N(e)(r2)	ALL	0.75	V-0			140	65	65		
		3	V-0			140	65	65		1
C645N(e)	ALL	0.75	V-0			65	65	65		
		3	V-0			65	65	65		1
C645NK(r1)	NC	0.8	V-0			65	65	65		
	NC	3	V-0			65	65	65		
CH230N(e)	ALL	0.75	V-0			130	90	125		
		1.5	V-0			130	120	125		
		3	V-0			130	120	125		1
CH230N(e)(r)	ALL	0.85	V-0			65	65	65		
CH245N(e)	ALL	0.75	V-0			130	120	125		
		3	V-0			130	120	125		1
CH245NK(r1)	NC	0.8	V-0			65	65	65		
	NC	3	V-0			65	65	65		
CF540N(e)	ALL	0.8	V-0			65	65	65		
CH530N(e)	ALL	0.89	V-0			65	65	65		

Polyamide 6T (PA6T), furnished as pellets.

A335	NC	0.75	HB			65	65	65		
		3	HB	0	0	65	65	65	0	5
A3(d)(e)	ALL	0.75	HB			65	65	65		
A315(e)	ALL	0.75	HB			65	65	65		
A340(e)	ALL	0.75	HB			65	65	65		
		1.5	HB			105	105	105		
		3	HB			115	115	115		
A340N(e)	ALL	0.75	V-0	0	1	65	65	65		
		1.5	V-0	0	1	120	120	120		

HR031229





# PRODUCT SPECIFICATION OF OUPIIN

Material Contact : Copper Alloy (Phosphor Bronze)

[SGS Test Report Click here](#)

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## REPORT OF MATERIAL TEST

DATE: FEB.15.2006

Customer: 歐品電子有限公司	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(%)				P.O. NUMBER
	Thickness (mm)	Width (mm)	Length (mm)							
	Standard									
				0.030 - 0.350	5.50 - 7.00	min. 99.50				
4CC135A	0.200	305.000		0.164	5.829	99.962				
4CC135B	0.200	305.000		0.164	5.829	99.962				

### 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 <sup>2</sup> )	Elongation (%)			
	Standard			-	(-) 0.10 - (+) 0.00	min. 58	-			
								min. 170	-	-
4CC135A	0.200	305.000		6000.	6000.	60.13	26.54	192.0 - 193.0	0.010	14.1
4CC135B	0.200	305.000		6000.	6000.	60.13	26.54	192.0 - 193.0	0.010	14.1

QC Supervisor

鄭建益

**MINCHALI METAL INDUSTRY CO., LTD.**  
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