PRODUCT SPECIFICATION

(產品規格書)

產品名稱 Description	產品料號 Part No.	圖號 Drawing No.
Modular Jack AK2D Type	8949-AK2Dxx-06BA	8949D02203

PRODUCT NAME (產品名稱)	**DOCUMENT No.:** (文件編號)	**Rev.** (版本)	**OUPIIN** (歐品)
Modular Jack AK2D Type	8949spec-K2D	A(I563)	
	Approved (核準)	**Checked** (審核)	**Prepared** (製作)
	Q.A. Section Chief	Joseph Yen	01.24/2018

1. SCOPE （範圍）

This product specification defines the product performance and the test methods to ascertain the performance of the Moular Jack AK2D 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 Moular Jack AK2D 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）
EIA364	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

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 1.5A, rating voltage is 150V DC/AC RMS.

額定電流 1.5A，額定電壓 150V DC/AC RMS。

3.7 OPERATING TEMPERATURE *使用溫度*

Temperature range: -40°C~+85°C,

溫度範圍：-40°C~+85°C。

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）

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 250℃, 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250℃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

（性能及测試）

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)	30 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)	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 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: 60 mΩ Max. after testing. (測試後接觸阻抗最大 60mΩ)	The sample should be mounted the tester and fully mated and unmated 750 cycles specified at the rate of 25mm/min (重復進行配合產品 750 次插拔.)
6. Thermal shock (熱衝擊)	After testing, no damage, Contact Resistance 60 mΩ max.. Dielectric Strength should be OK, Insulation Resistance should be 500 MΩ min. (測試後,產品無損壞，接觸阻抗：60 mΩ最大；耐電壓測試 OK, 絕緣阻抗	Temperature range from -40°C to +85°C .Start from -40°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： -40°C~ +85°C；從 -40°C 開始，30 分鐘後換到+85°C；轉換時間不超過 30 秒；共

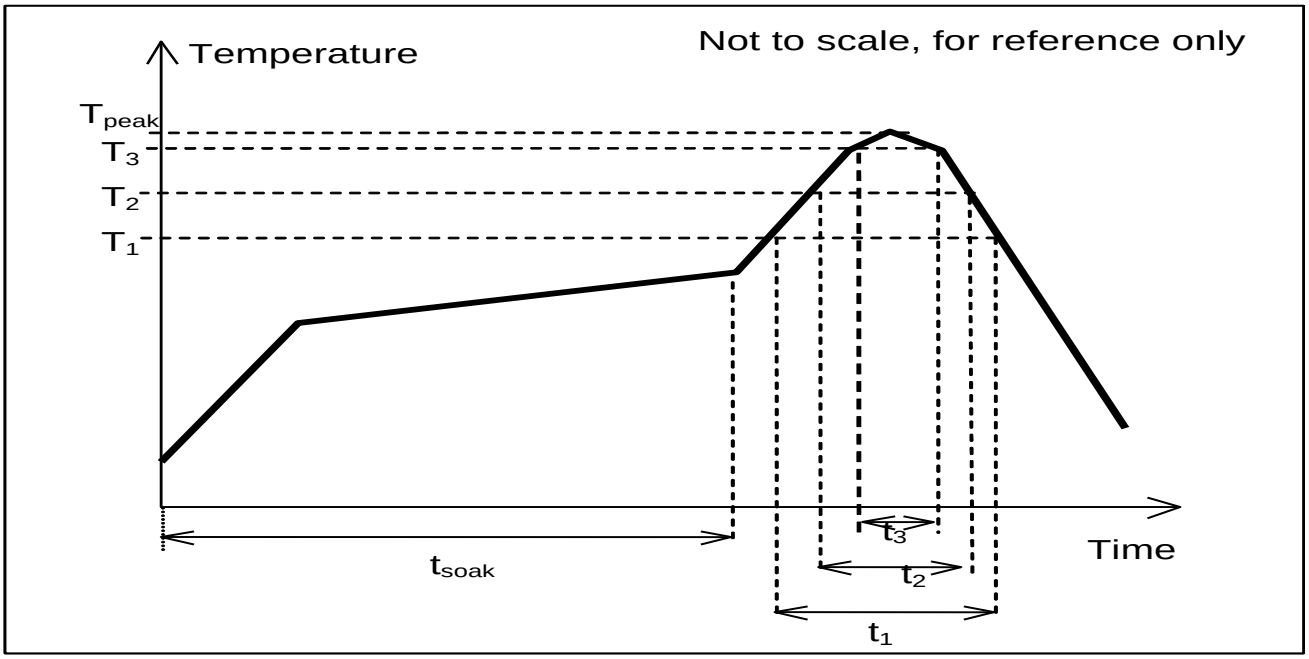
	500MΩ最小;)	5 個循環.適用：MIL-STD-202，方法 107D，條件 A.)
7. Humidity (恆溫恆濕)	After testing, no damage, Contact Resistance 60 mΩ max. (測試後,產品無損壞， 接觸阻抗：60 mΩ最大)	Temperature :40±2°C 96 hours. (溫度：40±2°C 96 小時) Relative Humidity : 90-95%; (相對濕度 ：90-95%；) Duration :96 Hours. MIL-STD-202, Method 108, (時間：96 小時；MIL-STD-202，方法 108。)
8. 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) Soldering Temperature: 245±5°C. (焊接溫度：245±5°C.)

Table II: Reflow soldering profile

(附錄二:回流焊接曲線圖)

Pb-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 (平均預熱溫度)		2.5°C/s
Soak Time 25~150°C	T_{soak}	60 Seconds (max)
Time Above 150~200°C	t_1	120 Seconds (max)
Time Above 200~230°C	t_2	50 Seconds (max)
Time Above 230~245°C	t_3	5 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)		Max -5°C/s



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.

(這個曲線圖是評估原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.)

Material : 006-PA46 (TE250F6 Black)

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Stanyl

Datasheet TE250F6 - 00001

30% GF reinforced, flame retardant, heat stabilized, grade with good strength and toughness for E/E applications

Typical properties	Unit	ISO/IEC	DIN	Grade TE250F6
General properties				
Density	g/cm³	ISO 1183	53479	1,68
Melting temperature	°C	ISO 3146		295
Temperature properties				
HDT-A (1.8 MPa)	°C	ISO 75-1	53461	290
Peak temperature (1min.)	°C	UL 746B		-
Continuous use temperature	°C	IEC 60216		
- 5000 hrs				163
Coeff. linear thermal expansion	E-4/K	DIN 53752		
- // (23-55°C)				0,2
- ⊥ (23-55°C)				0,8
Electrical properties				
RTI electrical	°C,mm	UL 746B		140 (0.75)
Insulation class	-	UL 1446		H
Flammability (at thickness)	class(mm)	UL 94		V-0 (0.35)
Comparative tracking index (CTI)	PLC	IEC 60112		2
Electric strength	kV/mm	IEC 60243-1		
- dry (23°C)				30
- con (23°C/50%RH)				20
Volume resistivity	Ohm.cm	IEC 60093		
- dry (23°C)				1E+15
- con (23°C/50%RH)				1E+10
Mechanical properties				
Izod impact strength (notched)	kJ/m²	ISO 180-1A		
- dry (23°C)				10
- con (23°C/50%RH)				11
Tensile strength	MPa	ISO 527-1	53455	
- dry (23°C)				180
- con (23°C/50%RH)				125
Tensile Modulus	MPa	ISO 527-1	53457	
- dry (23°C)				12500
- con (23°C/50%RH)				8000
Strain at break	%	ISO 527-1	53455	
- dry (23°C)				2,5
- con (23°C/50%RH)				3,5
Dimensional properties				
Moulding shrinkage	%	DSM		
- //				0,4
- ⊥				1,1
Humidity absorption (equil. 23°C/50%RH)	%	ISO 62		1,6

DSM ENGINEERING PLASTICS

DSM Engineering Plastics

9701/2.0

Material Housing :UL

Component - Plastics **E47960**

DSM ENGINEERING PLASTICS B V
POSTBUS 604, GELEEN 6160 AP NL

TE250F6(h1)(j)

Polyamide 4/6 (PA4/6), glass reinforced, flame retardant, "Stanyl", furnished as pellets

Color	Min Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
ALL	0.35	V-0	0	0	65	65	65
	0.75	V-0	0	0	140	110	120
	1.5	V-0	0	0	140	125	125
	3.0	V-0	0	0	140	130	130

Comparative Tracking Index (CTI): 2
Dimensional Stability (%): 0.0
High-Voltage Arc Tracking Rate (HVTR): 1
High Volt, LowCurrent Arc Resis (D495): 6
Dielectric Strength (kV/mm): 23
Volume Resistivity (10^x ohm-cm): -

(h1) - Virgin and regrind, up to 50% by weight inclusive, in thicknesses of 0.75mm and greater, have the same basic material characteristics, except for CTI.

(j) - Virgin and regrind, up to 100% by weight inclusive, have the same basic material characteristics with respect to Flammability in the 0.75mm thickness and greater.

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: 2003-01-01
Last Revised: 2007-08-21

Underwriters Laboratories Inc®

IEC and ISO Test Methods

Test Name	Test Method	Units	Thickness Tested (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	0.35	V-0 (ALL)
			0.75	V-0 (ALL)
			1.5	V-0 (ALL)
			3.0	V-0 (ALL)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	C	-	-
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	C	-	-
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
IEC Ball Pressure	IEC 60695-10-2	C	3.0	285
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^2	-	-
ISO Izod Impact	ISO 180	kJ/m^2	-	-
ISO Charpy Impact	ISO 179-2	kJ/m^2	-	-

Underwriters Laboratories Inc®

PRODUCT SPECIFICATION OF OUPIIN

Material Terminal : Copper Alloy (Phosphor Bronze C5210)

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MINCHALI

REPORT OF MATERIAL TEST
材料測試報告

ISO 9001
ISO/TS 16949
IECQ QC080000
ISO 14001
OHSAS 18001 & TOSHMS

No.: 251197 DATE: MAY.21,2013

Customer 顧客名稱 : 名佳利金屬工業股份有限公司
Commodity 商品名稱 : C5210R PHOSPHOR BRONZE FOR SPRING (EH)
Applied Standard 引用標準 : CNS 9503 Phosphor Bronze Sheets, Plates and Strips

Manufacture No.	銅捲製號		24M007A
(Specification)	產品規格	Standard	
Thickness (mm)	產品厚度		0.300
Width (mm)	產品寬度		622.000
Length (mm)	產品長度		
(Chemical Analysis Test)	化性測試		
P(%)	磷	0.030 - 0.350	0.128
Sn(%)	錫	7.000 - 9.000	7.938
Cu+Sn+P(%)	銅錫磷	min. 99.700	99.942
(Mechanical & Physical Test)	物性測試		
Thickness Test (mm)	厚度測試	-	0.292
Width Test (mm)	寬度測試	-0.10 +0.00	GOOD
Tensile Strength (kgf/mm2)	抗拉強度	min. 65.00	72.26
Elongation (%)	伸長率	min. 10.00	23.54
Hardness Test (Hv)	硬度	200.0 - 230.0	224.0 - 226.0
Grain Size (mm)	結晶粒度	-	0.010
Electric Conductivity (%)	導電率	-	12.10
(Other Information)	其他資訊		
Delivery No.	出貨單號		

QA Supervisor: 周建偉 A980301 S1800901ME

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