



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.
H.D. 2.0mm Futurebus+ Male Power Type	9111-4308xCxxxU	9111D43001
	9111-5310xCxxPU	9111D53003
	9111-5310xCxxDU	9111D53004

PRODUCT NAME (產品名稱)	DOCUMENT No.: (文件編號)	Rev. (版本)	OUPIIN
H.D. 2.0mm Futurebus+ Male Power Type	9111spec-43	B	(歐品)
	9111spec-53		
	Approved (核準)	Checked (審核)	Prepared (製作)
	Q.A. Section Chief	Joseph Yen	05.02/2018



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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 H.D. 2.0mm Futurebus+ , 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 H.D. 2.0mm Futurebus+ 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, 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。)



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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~+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-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 230~255°C for products with lead, or 255~265°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，無鉛產品控制在255~265°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.)



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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；)



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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 m Ω Max. initial (最大電阻)	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 M Ω 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 \pm 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 \pm 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 (耐久性)	Contact Resistance: 35 m Ω Max. after testing. (測試後接觸阻抗最大 35m Ω)	The sample should be mounted the tester and fully mated and unmated 250 cycles specified at the rate of 25mm/min (重復進行配合產品 250 次插拔.)
6. Press Fit Type-- Insertion Force Retention Force (魚眼產品打板力)	Insertion force : 200 N max. per pin Retention force : 45 N min. per pin 插入力: 200 N 單 PIN 最大. 拔出力: 45 N 單 PIN 最小	Measure force necessary to unmated between the counterparts connectors.. (軸向力以 25 \pm 3mm/分的速度從塑膠本體對插後拔出)



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<p>7. Vibration Sinusoidal Low Frequency 低頻正弦振動</p>	<p>No electrical discontinuity greater than 1 μs shall occur, Contact Resistance: 35 mΩ Max. 不允許出現超過 1 μs 的瞬間斷開，接觸阻抗最大 35 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 planes, 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。</p>
<p>8. Thermal shock (熱衝擊)</p>	<p>After testing, no damage, Contact Resistance 35mΩ max.. Dielectric Strength should be OK, Insulation Resistance should be 1000MΩ min. (測試後, 產品無損壞, 接觸阻抗: 35 mΩ 最大; 耐電壓測試 OK, 絕緣阻抗 1000MΩ 最小;)</p>	<p>Temperature range from -55°C to +85°C .Start from -55°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: -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 107D, 條件 A.)</p>
<p>9. Humidity (恆溫恆濕)</p>	<p>After testing, no damage, Contact Resistance 35 mΩ max.. (測試後, 產品無損壞, 接觸阻抗: 35 mΩ 最大.)</p>	<p>Temperature :40\pm2°C 96 hours. (溫度: 40\pm2°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.)</p>
<p>10. High temperature (高溫)</p>	<p>After testing, no damage, Contact Resistance 35 mΩ max.. (測試後, 產品無損壞, 接觸阻抗: 35 mΩ 最大.)</p>	<p>Subject product to 125\pm2°C for 96 hours inuously. MIL-STD-202, Method 108. (產品置於 125\pm2°C 連續 96 小時, 適用 MIL-STD-202, 方法 108.)</p>
<p>11 Salt Spray (鹽霧)</p>	<p>After testing, no damage, Contact Resistance 35 mΩ max.. (測試後, 產品無損壞, 接觸阻抗: 35 mΩ 最大)</p>	<p>5\pm1% salt concentration 48 hours 35\pm2°C MIL-STD-202, Method 101 Condition B. (鹽水濃度 (重量比) 5\pm1%, 時間 48 小時, 溫度 35\pm2°C; MIL-STD-202, 方法 101 條件 B.)</p>
<p>12. 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. More than 85% of immersed part shall be covered with solder. (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; 沾錫率 85% 以上覆蓋)</p>	<p>Soldering time: 3 to 5 Seconds (焊接時間: 3~5 秒) Peak Temperature: 260\pm5°C. (最高溫度: 260\pm5°C.)</p>



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Material Housing : 076-LCP

[SGS Test Report Click here](#)

[如需 SGS 測試報告請點選此處](#)

产品数据表
沃特特种工程塑料



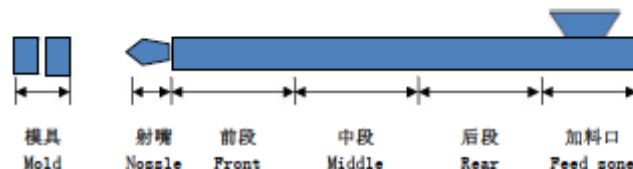
SELCION® KC184BLM/NLM

SELCION® LCP KC184BLM/NLM is a 40% glass fiber/mineral reinforced LCP for great dimensional stability
SELCION® LCP KC184BLM/NLM 是含有 40% 玻纤与矿纤增强的具有优异尺寸稳定性能的 LCP。

性能	PROPERTIES	典型数值 VALUE	单位 UNIT	测试标准 TEST METHOD
机械性能 MECHANICAL				
拉伸强度	Tensile Strength@break	125	MPa	ASTM D638
断裂伸长率	Tensile Elongation@break	1.8	%	ASTM D638
弯曲强度	Flexural Strength	180	MPa	ASTM D790
弯曲模量	Flexural Modulus	13.5	GPa	ASTM D790
I20D 无缺口冲击强度	I20D un-notched impact strength	400	J/m	
热性能 THERMAL				
热变形温度	Heat distortion temperature 18.5kgf/cm ²	265	°C	ASTM D648
物理性能 PHYSICAL				
比重	Specific Gravity	1.70		ASTM D792
成型收缩率	MD / TD	0.12 / 0.65	%	In house
烤炉起泡	270°C, 10min	OK		In house
介电常数	Dielectric Constant	3.4		1 GHz
		3.5		5 GHz
		4.0		10 GHz
难燃性能	Flame Retardancy	V-0 (0.3 umt)		UL-94

加工性能	PROCESSING CONDITIONS	典型数值 VALUE	单位 UNIT	备注 REMARK
喷嘴温度	Nozzle Temp.	345-365	°C	355 is recommended
前段温度	Front Temp.	350-370	°C	360 is recommended
中段温度	Middle Temp.	345-365	°C	355 is recommended
后段温度	Rear Temp.	320-340	°C	330 is recommended
加料口温度	Feed zone Temp.	50-70	°C	60 is recommended
模具温度	Mold Temp.	80-120	°C	100 is recommended
干燥温度	Drying Temperature	140-160	°C	150 is recommended
干燥时间	Drying Time	4-8	h	6 Hr is recommended

※ 成型条件根据不同的机床和操作环境而不同



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Material Housing :UL

iq.ul.com

Component - Plastics [\[guide info\]](#)

E478701

Jiangsu Wote High Performance Materials Co Ltd

No. 6-3, Weijiu RD, Economic development zone, Dongtai CN

KC184(@)

Liquid Crystal Polymer (LCP), "SELCION", furnished as pellets

Color	Min Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
NC, BK	0.3	V-0	4	4	130	130	130
	3.0	V-0	0	4	130	130	130

Comparative Tracking Index (CTI): 3

Dielectric Strength (KV/mm): -

High-Voltage Arc Tracking Rate (HVTR): 1

Dimensional Stability (%): -

Inclined Plane Tracking (IPT): -

Volume Resistivity (10¹⁴ ohm-cm): -

High Volt, Low Current Arc Resis (D495): 4

(@) - Represented by one, two or three numbers or letters.

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: 2006-12-13

Last Revised: 2016-02-26

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IEC and ISO Test Methods

Test Name	Test Method	Units	Thk (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	0.3	V-0 (NC, BK)
			3.0	V-0 (NC, BK)
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	-	-
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	-	-



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Material Contact : Copper Alloy (Brass)

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REPORT OF MATERIAL TEST

DATE: FEB.24,2004

4

Customer: 歐品電子有限公司

Commodity: C 2680 R BRASS STRIP (H)

ISO 9002:4M8Y035-00
台正字第 3544 號

Applied Standard: CNS 4383 Brass Sheets, Plates and Strips

Chemical Analysis Test

Work No.	Size of Product			Cu(%)	Fe(%)	Pb(%)	Zn(%)	P.O. NUMBER
	Thickness (mm)	Width (mm)	Length (mm)					
	Standard							
				64.00 - 68.00	max. 0.050	max. 0.070	REM.	
31A143A	0.500	18.500		65.756	0.014	0.000	REM.	PO.14101
31A143A	0.500	400.000		65.756	0.014	0.000	REM.	PO.10877
31A476A	0.600	400.000		65.850	0.021	0.000	REM.	
31A476A	0.600	24.000		65.850	0.021	0.000	REM.	

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	42 - 55	-			
31A143A	0.500	18.500		GOOD.	GOOD.	46.66	22.92	145.0 - 146.0	-	26.0
31A143A	0.500	400.000		GOOD.	GOOD.	46.66	22.92	145.0 - 146.0	-	26.0
31A476A	0.600	400.000		GOOD.	GOOD.	46.47	25.22	146.0 - 148.0	-	25.7
31A476A	0.600	24.000		GOOD.	GOOD.	46.47	25.22	146.0 - 148.0	-	25.7

QC Supervisor 鄭建益

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