



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.
HYBRID POWER CARD EDGE CONNECTOR	9394-2A1P11ACB30-CB30A	9394-D0000-003
	9394-2A2N121ACB30PA	9394-D0000-008

PRODUCT NAME 產品名稱	DOCUMENT No.: 文件編號	Rev. 版本	OUPIIN
HYBRID POWER CARD EDGE CONNECTOR	Q9394-PSS-002	B	歐品電子
	Approved 核准	Checked 審核	Prepared 制作
	Q.A. Section Chief	Joseph Yen	05.26/2017



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1. SCOPE 適用範圍

This product specification defines the product performance and the test methods to ascertain the performance of the HYBRID POWER CARD EDGE 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 HYBRID POWER CARD EDGE connector 型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
UL1977	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。

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.



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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

Rating current: AC Power pin25A, DC Power pin100A, Signal pin 1A

額定電流: AC Power pin25A, DC Power pin100A, Signal pin 1A

Rating voltage is 250V AC RMS(AC PIN). 60V DC RMS(DC PIN and Signal PIN).

額定電壓 250V AC RMS(交流),60V DC RMS(直流與信號).

3.7 STORAGE AND OPERATING TEMPERATURE 存貯與使用溫度

Temperature range: -40°C~+115°C, including terminal temperature rise for rating current.

Storage Temperature :0°C~+40°C, Humidity: 80%RH under .

溫度範圍：-40°C~+115°C,包含接觸端子的額定電流溫升.

儲存溫度：0°C~+40°C，濕度：80%RH以下

4. PERFORMANCE AND TEST DESCRIPTION 性能及測試

4.1. 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。

4.2. 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。

4.3. 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	AC Power pin: 4.5mΩ Max .initial. DC Power pin: 0.5mΩ Max .initial. Contact resistance change Δ 0.5mΩ Max Signal pin:20mΩ Max .initial Contact resistance change Δ 5mΩ Max AC Power pin 初始狀態 4.5mΩ Max, DC Power pin 初始狀態 0.5mΩ Max, 接觸電阻變化值 Δ 0.5mΩ Max Signal pin 初始狀態 20mΩ Max, 接觸電阻變化值 Δ 5mΩ Max	Subject specimens to 100milliamperes maximum and 20 millivolts maximum open circuit voltage. IEC 60512-2-1. Test 2a 所述固定端子連結到一個封閉回路中測試,電流 100 mA max,電壓 20 mV max。適用：IEC 60512-2-1. Test 2a
3. Insulation Resistance 絕緣阻抗	Power pin: 5000 MΩ Min. Power pin 最小:5000 MΩ. Signal pin: 500 MΩ Min. Signal pin 最小:500 MΩ. Between all power conductors :500MΩ. Min 與 Power Pin 相鄰:500MΩ.最小	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. IEC 60512-3-1. (500 V DC \pm 10%). 測試產品相鄰端子間以及端子與接地間的電阻 適用：IEC 60512-3-1. (500 V DC \pm 10%)。
4. Dielectric Withstanding Voltage 耐電壓	DC Power pin must withstand test potential of 2000 VAC RMS for 1 min AC Power pin must withstand test potential of 2000 VAC RMS for 1 minute, Signal pin must withstand test potential of 500 VAC RMS for 1 minute, Between AC Power pin and Signal pin must withstand test potential of 3000 VAC RMS for 1 min Between AC Power pin and PE Power pin must withstand test potential of 2000 VAC RMS for 1 min Between PE Power pin and Signal pin must withstand test potential of 1000	One minute hold with no Break down or flashover .IEC 60512-4-1. 一分鐘不得有損傷或閃電。適用：IEC 60512-4-1.



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	<p>VAC RMS for 1 min 交流、直流感觸件之間必須承受測試電壓 2000 VAC RMS，時間 1 分鐘。 信號接觸件之間必須承受測試電壓 500 VAC RMS，時間 1 分鐘。 交流與信號接觸件之間必須承受測試電壓 3000 VAC RMS，時間 1 分鐘。 交流與 PE 接觸件之間必須承受測試電壓 2000 VAC RMS，時間 1 分鐘。 信號與 PE 接觸件之間必須承受測試電壓 1000 VAC RMS，時間 1 分鐘。</p>	
<p>5. Durability (Repeated Mating/Un-mating) 耐久性</p>	<p>Contact Resistance: Rise in relation to initial values 0.5 mΩ max(power pin). After testing. Rise in relation to initial values 5mΩ max(signal pin). After testing. Power pin 測試後接觸阻抗比初始值增大不超過 0.5 mΩ。 Signal pin 測試後接觸阻抗比初始值增大不超過 5mΩ。</p>	<p>Repeat mate and unmated for connector 250 cycles, at a speed of 25.4 mm per minute. 重復進行配合產品 250 次插拔，速度 25.4mm/分鐘。</p>
<p>6. Contact Retention Force 端子保持力</p>	<p>Power pin: 20N /per Pin .Min. Signal pin: 5N /per Pin .Min. Power pin 每支最小 20N/per Pin. Signal pin 每支最小 4N/per Pin</p>	<p>Apply axial pull out force at a speed of 25.4±3 mm/minute on the contact assembled in the housing. 以 25.4±3mm/分鐘的速度施加軸向拉力從塑膠本體上拔出端子。</p>
<p>7. Compliant Pin Insertion Force 壓接力 Compliant Pin Retention Force 壓接保持力</p>	<p>Into PCB Hold Force Per Power Pin: 200N Max(Per pressfit:40N Max) Into PCB Hold Force Per Signal Pin: 100N Max 单 Power pin 压入 PCB 的力: 200N Max(單支魚眼：40N 最大) 单 Signal pin 压入 PCB 的力: 100N Max Per Power Pin Retention Force in PCB: Per pressfit:10N Min 单 Power Pin 在 PCB 中的保持力: 單支魚眼 10N 最小 Per Signal Pin Retention Force in PCB: 15N Min 单 Signal Pin 在 PCB 中的保持力: 15N</p>	<p>At a speed of 25.4 mm/minute, Apply axial press in PCB to right position .EIA-364-5 以 25.4mm/分鐘的速度，施加軸向壓力將端子壓入 PCB 板上。EIA-364-5 at a speed of 25.4 mm/minute, Apply axial pull out from PCB to right position . EIA-364-5 以 25.4mm/分鐘的速度施加軸向拉力從 PCB 板上拔出端子。EIA-364-5</p>



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	Min	
8. Mating /Un-mating Force 插入力/拔出力	80N maximum engaging force 40N maximum separating force 10N minimum separating force 插入力最大: 80N all pin Max 拔出力最大: 40N all pin Max 拔出力最小:10N all pin Min	At a speed of 25.4mm/minute, apply axial insert the mating part into fully or pull out from the subject product. IEC 60512-13-1 以 25.4 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。IEC 60512-13-1
9. Vibration Sinusoidal Low Frequency 低頻正弦振動	No electrical discontinuity less than 1μs shall occur, Contact resistance: 不允許出現超過 1μs 的瞬間斷開	Subject mated connector to 10-55-10 Hz traversed in 1 minute at 1.52mm amplitude, 2hours each of 3 mutually perpendicular planes, potential applied. IEC 60512-6-4。 10-55-10Hz,振幅 1.52 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。適用：IEC 60512-6-4。
10. Thermal Shock 溫度沖擊	After testing, no damage, Contact Resistance: Rise in relation to initial values 0.5 mΩ max(power pin). After testing. Rise in relation to initial values 5mΩ max(signal pin). After testing. 測試後產品無損壞，Power pin 測試後接觸阻抗比初始值增大不超過 0.5 mΩ。 Signal pin測試後接觸阻抗比初始值增大不超過5mΩ。	Temperature range from -40°C to +85°C. Start from -40°C, after 30 minutes, change to +85°C; change time is no more than 1 minutes, total cycles. EIA 364-32 Test Condition I 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 1 分鐘，共 5 個循環。適用：EIA 364-32 Test Condition I
11. Humidity-Temperature Cycle	After testing, no damage, Contact Resistance: Rise in relation to initial	Subject product : temperature between -40°C~95°C at 90to 95 %RH.



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溫濕度循環	<p>values 0.5 mΩ max(power pin). After testing.</p> <p>Rise in relation to initial values 5mΩ max(signal pin). After testing.</p> <p>測試後產品無損壞，Power pin 測試後接觸阻抗比初始值增大不超過 0.5 mΩ。</p> <p>Signal pin 測試後接觸阻抗比初始值增大不超過 5mΩ。</p>	<p>R.H 10Cycles. Each cycle lasted 24 hours Duration: 240Hours.</p> <p>EIA-364-31B Method 3</p> <p>產品置於-40°C~95°C,相對濕度：90-95%,循環 10 次,24 小時循環一次適用：EIA-364-31B Method 3</p>
12. Test temperature rise for rating current 溫升測試	<p>The temperature rise above ambient shall not exceed 30 °C。</p> <p>溫度不能超過 30 °C。</p>	<p>Subject mated contacts assembled in housing to closed circuit of AC Power Pin: 25A max, DC Power Pin: 100A max, Signal Pin: 1A max, Test Specification IEC 60512-5-1</p> <p>所述固定在外殼包的端子連結到一個封閉回路中測試:</p> <p>AC Power Pin: 25A max, DC Power Pin: 100A max, Signal Pin: 1A max,。</p> <p>參考規範：IEC 60512-5-1</p>
13. Salt Spray 鹽霧	<p>After testing, no damage, Contact Resistance: Rise in relation to initial values 0.5 mΩ max(power pin). After testing.</p> <p>Rise in relation to initial values 5mΩ max(signal pin). After testing.</p> <p>Power pin 測試後接觸阻抗比初始值增大不超過 0.5 mΩ。</p> <p>Signal pin 測試後接觸阻抗比初始值增大不超過5mΩ。</p>	<p>5±1% salt concentration(PH=7.0) ,48 hours 35±2°C:MIL-STD-202, Method 101, condition B.</p> <p>鹽水濃度5±1%(PH=7.0),時間48小時，溫度35±2°C。適用：MIL-STD-202，方法101，條件B。</p>
14.High Temperature Life 高溫老化	<p>After testing, no damage, Contact Resistance: Rise in relation to initial values 0.5 mΩ max(power pin). After testing.</p> <p>Rise in relation to initial values 5mΩ max(signal pin). After testing.</p> <p>測試後產品無損壞，Power pin 測試後接觸阻抗比初始值增大不超過 0.5 mΩ。</p> <p>Signal pin 測試後接觸阻抗比初始值增大不超過5mΩ。</p>	<p>Subject product to 105°C for 250 hours，Two hours recovery time. continuously.</p> <p>EIA-364-17</p> <p>產品置於 105°C 連續 250 小時。恢復時間 2 小時 適用：EIA-364-17</p>



PRODUCT SPECIFICATION OF Oupin

Material Housing : 073-LCP

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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 0 一號七樓

CHANG CHUN PLASTICS CO.,LTD.

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LONGLITE TAIPEI
TLX:22535 LONGLITE

No.301, SONGKIANG ROAD, 7TH FL.,
TAIPEI, 10477 TAIWAN

TEL: (02)2503-8131 (REP)
FAX: (02)2503-3378

Technical Data

Liquid Crystalline Polymer Compound

LONGLITE® LCP 270B(N)5TL X62

LONGLITE®LCP 270B(N)5TL is liquid crystalline polymer which contains 45% glass fiber and inorganic filler. LCP 270B(N)5TL has advantages of high heat resistance, low warpage and flowability.

LONGLITE®LCP 270B(N)5TL 屬 45%玻纖織液晶高分子材料，其特性有高耐熱性、高平整度及良好流動性，防火等級通過 UL 94V-0。

Physical Properties 物性表：

Items	Unit	Test Method	270B5TL X62* 270N5TL X62
Filler Content 填充物	%	ASTM	45% GF+MF**
Specific Gravity 比重	--	D792	1.77
Water Absorption 吸水率	%	D570	0.03
Shrinkage 收縮率	MD(流動方向)	CCP method	0.32
	TD(垂直方向)		0.64
Tensile Strength 抗張強度	MPa	D638	85
Tensile Elongation 伸長率	%		1.6
Flexural Strength 曲折強度	MPa	D790	140
Flexural Modulus 曲折彈性率	GPa		11.0
Izod Impact 衝擊強度 (缺口)	J/m	D256	80
DTUL (1.82MPa) 熱變形溫度	℃	D648	270
Dielectric Constant 介電常數 Dk	1 MHz	D150	4.3
Dielectric Tangent 介電正接 Df	1 MHz		0.032
Flammability 阻燃防火等級	Rating	UL94	V-0
CTI 漏電起痕指數	Rating	D257	3

* Typical data : Not to be constructed as specification

B : Black 黑色, N : Natural Color 本色 5 :45~50% Filler content



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Material Housing :UL

Component - Plastics

E59481

CHANG CHUN PLASTICS CO LTD

7TH FL, 301 SONGKIANG RD, TAIPEI 104 TW

270(X1)5TL(100% Virgin)

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

Color	Min Thk (mm)	Flame Class	HWI	HAI	RTI		
					Elec	Imp	Str
NC, BK	0.15	V-0	4	1	130	130	130
	0.3	V-0	4	1	130	130	130
	0.6	V-0	4	1	130	130	130
	1.0	V-0	1	1	130	130	130
	3.0	V-0	0	0	130	130	130

Comparative Tracking Index (CTI): 3

Inclined Plane Tracking (IPT): -

Dielectric Strength (KV/mm): -

Volume Resistivity (10^9 ohm-cm) : -

High-Voltage Arc Tracking Rate
(HVTR): 1

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

Dimensional Stability (%): -

(X1) - Maybe replace by one letter N representing Natural color or B representing Black color

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:2012-11-30

Last Revised:2014-07-04

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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)	0.15	V-0 (NC, BK)
			0.3	V-0 (NC, BK)
			0.6	V-0 (NC, BK)
			1.0	V-0 (NC, BK)
			3.0	V-0 (NC, BK)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	C	0.6	960
			3.0	960
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	C	0.6	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 ²	-	-
ISO Izod Impact	ISO 180	kJ/m ²	-	-
ISO Charpy Impact	ISO 179-2	kJ/m ²	-	-

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PRODUCT SPECIFICATION OF Oupin

Material Power Pin : Copper Alloy (C18400)

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INSPECTION REPORT

客戶名稱 CUSTOMER	弘振企業股份有限公司
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鎧蔚企業有限公司
METALEX ENTERPRISE CO., LTD
 No.108-3, Sec. 1, Guangfu Rd., SanChong District,
 New Taipei City 24158, Taiwan
 TEL : +886-2-2278-1989 FAX : +886-2-2999-9687

品名 PRODUCT	C18400-R540	母料號碼 LOT NO	C09I12-1F	日期 DATE	2014/10/23
規格 SIZE	0.64 X 310	重量 QUANTITY	1454 KG	序號 NO.	131000015

化學成份 CHEMICAL COMPOSITION

成分符號 ELEMENT	Cu	CR	ZR						
規格 SPEC (%)	MIN	0.2	0.03						
	MAX	1.2	0.3						
分析值 ANALYSIS VALUE	99.2250	0.5686	0.1509						

機械特性試驗 MECHANICAL TESTING


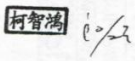
項目 ITEM	抗拉強度 Tensile Strength N/mm ²	屈服強度 Yield Strength N/mm ²	伸長率 Elongation %	導電率 Electrical Conductivity %IACS	硬度 Hardness (for reference only) HV
規格 SPEC	MIN	540	500	4	83
	MAX	630			190
實測值 MEASURED VALUE	555	510	9.5	90.12	156

尺寸量測 GEOMETRICAL DIMENSIONS

項目 ITEM	厚度 Thickness (mm)	寬度 Width (mm)	粗糙度 Ra um		
規格 SPEC	MIN	0.610	309		
	MAX	0.670	311	0.15	
實測值 MEASURED VALUE	0.640	310	0.07-0.08		

備註 REMARKS

*厚度 ≤ 0.12T 以下者, 硬度僅供參考.

	責任者	品質擔當者
	 Theresa 2014.10.23 黃秀玲	 柯智鴻





PRODUCT SPECIFICATION OF Oupiin

Material Lock : Copper Alloy (Phosphor Bronze C5191)

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REPORT OF MATERIAL TEST

DATE: AUG.05.2009

Customer: 亞松貿易有限公司

Commodity: C 5191 R PHOSPHOR BRONZE STRIP (H)

ISO 9002:4MSY035-00
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									
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			
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

謝文輝

A020303