PRODUCT SPECIFICATION

產品規格書

產品名稱 Description	產品料號 Part No.	圖號 Drawing No.
9192-B Series Power 300A Connector	9192-B1P02TSAA01	9192-DP02-062
	9192-B2P02TSAA01	9192-DP02-061

PRODUCT NAME 產品名稱	**DOCUMENT No.:** 文件編號	**Rev.** 版本	**OUPIIN** 歐品電子
9192-B Series Power 300A Connector	Q9192-PSS-008	A	
	Approved 核准	**Checked** 審核	**Prepared** 製作

1. SCOPE 適用範圍

This product specification defines the product performance and the test methods to ascertain the performance of the Power 300A 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 Power 300A 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.
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: Power Pin 300A
額定電流: Power Pin 300A,
Rating Voltage is 48 V AC RMS.
額定電壓: 48 V AC RMS.

3.7 STORAGE AND OPERATING TEMPERATURE 貯存與使用溫度

Temperature range: -40°C~+105°C, including terminal temperature rise for rating current.
Storage Temperature :0°C~+40°C, Humidity: 80%RH under，Time limit is 12 months the products are stored。
溫度範圍：-40°C~+105°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,產品限存時間為 12 個月.

4. Environmental 環境要求

4.1. SOLDERABILITY 可焊性

Connectors meet solder-ability to EIA-364-52, and shall be free of contaminants.

產品可焊性符合 EIA-364-52 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

4.2.1. INFRARED REFLOW 紅外線回流焊接

Each cycle consists of three consecutive phases, as shown in **Table III.**
每個焊接週期包括三個連續的階段，見附表三。

4.2.2. WAVE SOLDER 波峰焊接

Each cycle consists of three consecutive phases. as shown in **Table Ⅳ.**
每個焊接週期包括三個連續的階段,見附表四。

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

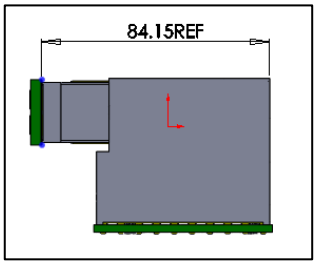
Test samples shall be selected at random from current production. No test samples shall be reused. Samples are pre-conditioned with 10cycles of durability. Each group shall be containing 5 test samples at least.
測試樣品從現生產的產品中隨機抽取，所有測試過的樣品不得重複使用。樣品已預先插拔 10 次，每組測試至少有 5 個樣品。

5.4. TEST SEQUENCE 測試順序

Product qualification test sequence as shown in **Table II.**
產品品質測試順序見附表二。

6. MATING DEMAND 對配要求

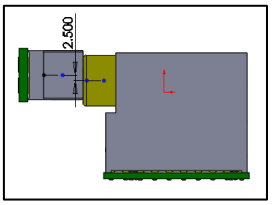
6.1.Male Female assembly dimension 公母產品裝配尺寸



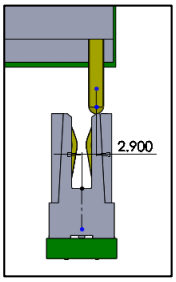
Distance between male's PCB and female's PCB is 84.15REF
公母 PCB 板之間的尺寸為 84.15REF

6.1 Perpendicular to engaging direction 垂直插入方向

the design of the centering and guiding in the Mpc of the free and fixed board connector modules shall accept a misalignment of 2.50mm in transverse and 2.90mm in longitudinal axes of the connector
固定板連接器模件的 Mpc 裡，連接器設計中心線橫向可接受 2.50mm 和縱向可接受 2.90mm 的偏差。



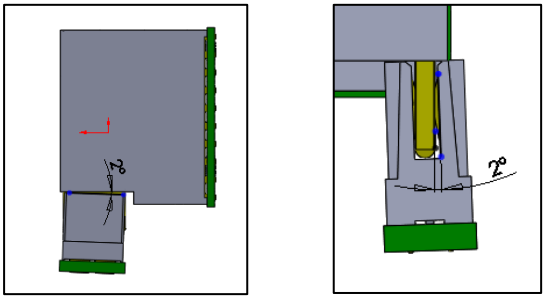
in transverse axes 在橫向方向



in longitudinal axes 在縱向方向

6.2 inclination傾向

The center and guiding in the Mpc of the free and the fixed board connector modules shall allow an initial angular misalignment of 2 from both the transverse and longitudinal axes
固定板連接器模件的在 Mpc 裡,連接器可接受橫向和衝向 2° 的最大傾斜對插角度。



6.3 Products insertion depth dimension產品插入深度尺寸

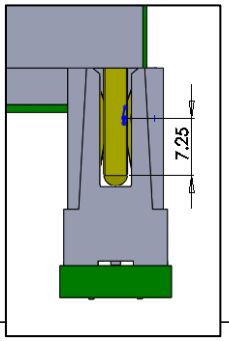


Table I: Test Requirements and Methods

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	Power pin: 0.7mΩ Max. initial. Power pin 初始狀態 0.7mΩ Max.	Subject specimens to 100 milliamperes maximum and 20 millivolts maximum open circuit voltage. EIA-364-06 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：EIA-364-06
3. Insulation Resistance 絕緣阻抗	Power pin: 1500 MΩ Min. Power pin 最小 1500 MΩ.	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. EIA-364-21. (500 V DC±10%). 測試產品相鄰端子間以及端子與接地間的電阻 適用：EIA-364-21. (500 V DC±10%)。
4. Dielectric Withstanding Voltage 耐電壓	Power pin must withstand test potential of 1500VDC RMS for 1 min ,Due to exceed leakage current 1mA Max. One minute hold with no breakdown or flash Power pin 必須承受測試電壓 1500VDC RMS 時間 1 分鐘. 漏電流 不超過 1mA. 一分鍾不得有損傷或 閃電。	Test between 2 connectors when mounted on a PCB with a pitch of 22±1mm over.EIA-364-20. 兩個測試連接器之間的 pitch 爲 22±1mm. 適用：EIA-364-20
5. Durability (Repeated Mating/Un-mating) 耐久性	Contact resistance after test 0.7 mΩ Max 測試後接觸阻抗 0.7 mΩ Max	Repeat mate and unmated for connector 50 cycles, at a speed of 127 mm per minute.EIA-364-09 重復進行配合產品 50 次插拔，速度 127mm/分鐘。適用：EIA-364-09
6. Contact Retention Force 端子保持力	6N /Pin. Min. 每 Pin 最小 6N	Apply axial pull out force at a speed of 25.4±6 mm/minute on the contact assembled in the housing. 以 25.4±6mm/分鐘的速度施加軸向拉力從塑膠本體上拔出端子。

7. Mating /Un-mating Force 插入力/拔出力	Mating Force: 50N Max/Pin Un-mating Force: 5.0N Min/Pin 插入力: 50N Max/Pin 拔出力: 5.0N Min/Pin	At a speed of 25.4mm/minute, apply axial insert the mating part into fully or pull out from the subject product. EIA-364-13 以 25.4mm/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。 適用：EIA-364-13
8. Vibration Sinusoidal Low Frequency 低頻正弦振動	No electrical discontinuity greater than 1ms shall occur, Contact Resistance: 0.7 mΩ max After testing. 不允許出現超過 1 ms(毫秒) 的瞬間斷開,測試後接觸阻抗 0.7 mΩ Max	Subject mated connector to 10-55-10 Hz traversed in 1 minute at 1.5mm amplitude, 15 minutes each of 3 mutually perpendicular planes.EIA-364-28. 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 15 分鐘下測量，電流 10 mA。適用： EIA-364-28。
9. Thermal Shock 溫度沖擊	After testing, no damage, Contact Resistance: 0.7 mΩ max After testing. 測試後產品無損壞，測試後接觸阻抗 0.7 mΩ Max	Temperature range from -40°C to +105°C. Start from -40°C, after 30 minutes, change to +105°C; change time is no more than 5 minutes, total 25 cycles. Per EIA-364-32,Method A, Test Condition II 溫度變化範圍： -40°C~ +105°C。從 -40°C 開始，30 分鐘後換到+105°C，轉換時間不超過 5 分鐘，共 25 個循環。適用：EIA-364-32, Method A, Test Condition Ⅱ
10. Humidity-Temperature Cycle 溫濕度循環	After testing, no damage, Contact Resistance: 0.7 mΩ max After testing. 測試後產品無損壞，測試後接觸阻抗 0.7 mΩ Max	Subject product： temperature between 25°C-65°C at 80% to 98 %RH.10Cycles. Each cycle lasted 24 hours EIA-364-31 Method III,Condition B 產品置於 25°C-65°C,相對濕度：80% 到 98 %, 循環 10 次,24 小時循環一次適用 : EIA-364-31 Method Ⅲ, Condition B
11. Test temperature rise for rating current 溫升測試	The temperature rise above ambient shall not exceed 30 °C。 溫度不能超過 30 °C。 Ambient conditions - Still air 25°C。 周圍環境溫度 25°C。	Subject mated contacts assembled in housing to closed circuit of Power Pin: 300A max, Test Specification for 8 hours continuously. EIA-364-70 所述固定在外殼包的端子連結到一個封閉回路中測試， Power Pin: 300A max,連續 8 小時。適用：EIA-364-70

12. Salt Spray 鹽霧	After testing, no damage, Contact Resistance: 0.7 mΩ max After testing. 測試後接觸阻抗 0.7 mΩ Max	5±1% salt concentration(PH=7.0) ,48 hours 35±2°C:EIA-364-26. 鹽水濃度 5±1%(PH=7.0),時間 48 小時，溫度 35±2°C。適用 : EIA-364-26。
13.High Temperature Life 高溫老化	After testing, no damage, Contact Resistance: 0.7 mΩ max After testing. 測試後產品無損壞，測試後接觸阻抗 0.7 mΩ Max	Subject product to 105°C for 180 hours. EIA-364-17 產品置於 105°C 連續 180 小時。適用：EIA-364-17
14.Solderability 沾錫性	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.5% maximum dewetting.	Solder-bath temperature 245±5℃ ， duration 5 sec. Per EIA-364-52 錫爐溫度爲 245±5 度，沾錫時間 5 秒. 適用：EIA-364-52

Table II: Product Qualification Test Sequence

附表二: 產品測試順序

Test Description 測 試 描 述	Test Group 測試分組								
	A	B	C	D	E	F	G	H	I
1. Conformation of Product 產品確認	1,7	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,4
2. Contact Resistance 接觸阻抗	2,6	2,6	2,6	2,6	2,6	2,6	2,6	2,6	
3. Insulation Resistance 絕緣阻抗	3	3,7	3,7	3,7	3,7	3,7	3,7	3,7	
4.Dielectric Withstanding Voltage 耐電壓	4	4,8	4,8	4,8	4,8	4,8	4,8	4,8	
5.Durability 耐久性	5								
6.Contact Retention Force 端子保持力									2
7. Mating/Un-mating Force 插入/拔出力		5							
8. Vibration Sinusoidal Low Frequency 低頻正弦振動			5						
9. Thermal Shock 溫度衝擊				5					
10. Humidity-Temperature Cycle 溫濕度循環					5				
11. Current rating 溫升測試						5			
12. Salt Spray 鹽霧							5		
13. High Temperature Life 高溫老化								5	
14.Solderability 沾錫性									3

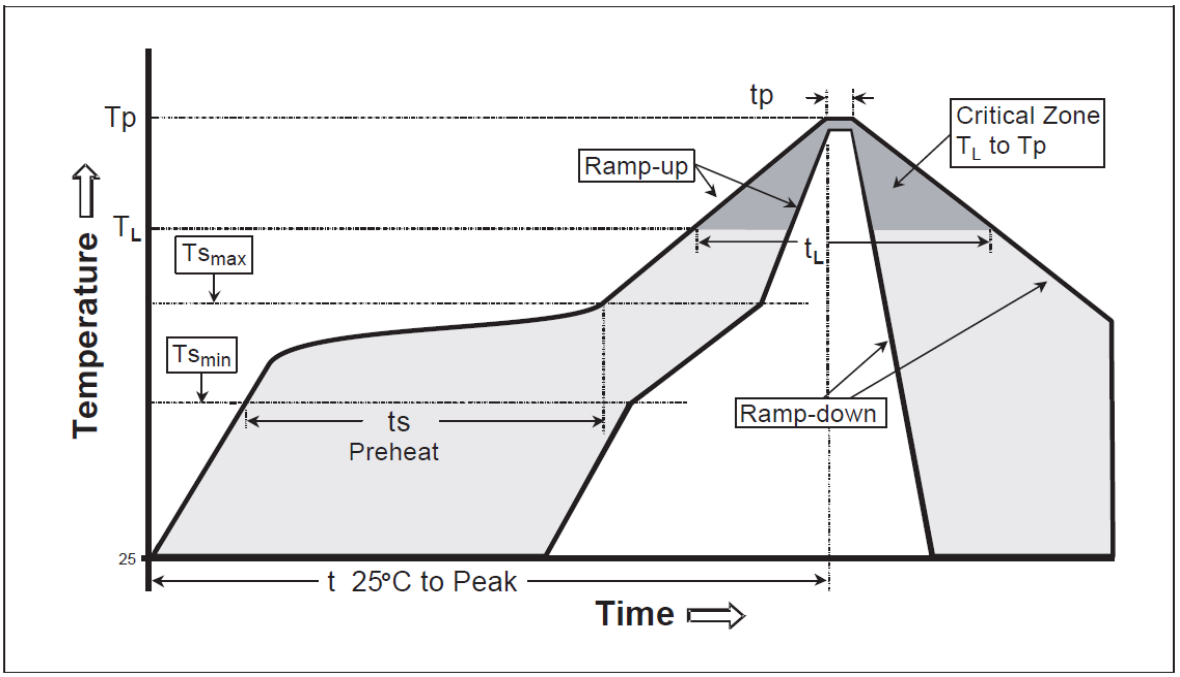
Table III: Reflow Soldering Profile

附表三：回流焊接曲線圖

Lead-free reflow profile requirements:

無鉛回流焊接曲線

Parameter 参数	Reference 参考	Specification 规格
升溫區 Ramp-up	25℃ ~150℃	3°C /S Max
預熱區(Pre-heatimg) Temperature Min(Ts_{min}) Temperature Max(Ts_{max}) Time(Ts_{min} to ts_{max})	150℃ ~200℃	60~180sec
Time maintained above(保持时间) Temperature(T_L) Time(t_L)	217℃	60~150sec
Time within 5°C of actual peak Temperature(tp)	260-/+5℃	20~40sec
冷卻區 Cooling	Ramp-Down Rate	6°C /S(Max)
Time 25°C to Peak Temperature	25°C ~ Peak Temp.	8 minutes maximum

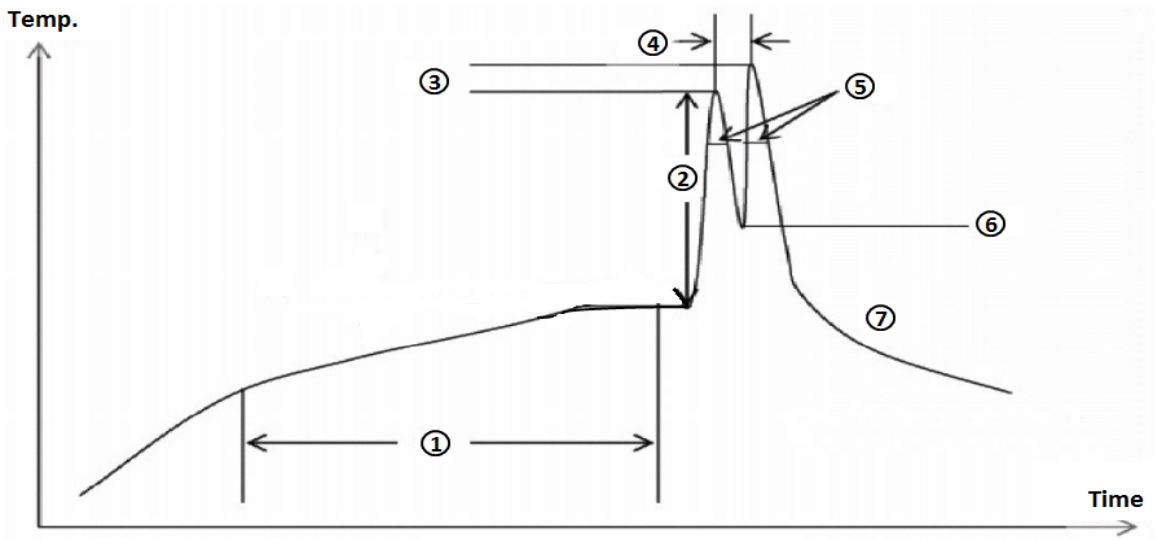


This profile is the minimum requirement for evaluating soldering heat resistance of components .Heat transfer method used for reflow soldering is hot air convection .The actual air temperatures used to achieve the specified profile largely dependent on the reflow equipment.

這個曲線圖是評估元件器件焊接抗熱的基本要求。應用在對焊接中的熱傳遞方式是熱氣對流。達到特定曲線圖地實際溫度主要依賴與回流焊接設備。

Table Ⅳ : Weld the curve graph in crest

附表四：波峰焊曲線圖



① Preheat 80sec（1~2℃/s）
② ΔT<150℃
③235~265℃
④1~3sec
⑤Dip Time 3~6sec
⑥>200℃
⑦Cooling -5℃/s