PRODUCT SPECIFICATION

產品規格書

產品名稱 Description	產品料號 Part No.	圖號 Drawing No.
DIN41612 C Type Female	9001-C1(2)2xxxCxxxxA	9001-D0000-001
	9001-C1(2)4xx1CxxA	9001-D0000-002
	9001-C1(2)6xxxCxxL1A	9001-D0000-003
	9001-C1(2)8xx1CxxA	9001-D0000-004
	9001-C3(4)2xxxCxxA	9001-D0000-005
	9001-C3(4)4xx1CxxA	9001-D0000-006
	9001-C31416xx1CxxL1A	9001-D0000-007
	9001-C3(4)8xxx1CxxL1A	9001-D0000-008
	9001-C1(2)8xxx1CxxL1A	9001-D0000-011
	9001-C16481CxxL1A/A007	9001-D0000-017
	9001-C102160xCxxA	9001-D0000-018
	9001-C18301CxxA	9001-D0000-022
	9001-C18301CxxA	9001-D0000-023
	9001-C28241C00A/A001	9001-D0000-024

DIN41612 C Type Female	9001-C1(2)2xxxCxxxA/G	9001-D0000-025
	9001-C12641CxxA	9001-D0000-026
	9001-C22481C00A/A001	9001-D0000-027
	9001-C42321CxA/A001	9001-D0000-028
	9001-Cx6xx1CxxL1A/A001	9001-D0000-029
	9001-C36xx1CxxL1A	9001-D0000-030
	9001-C1630xCxxL1A	9001-D0000-031
	9001-C12961CxxL1A/A003	9001-D0000-034
	9001-C32641CxxL1A/A002	9001-D0000-035
	9001-C38201CxxA-xxxx	9001-D0000-xxxx
	9001-C12641CxxA-XXXX	9001-D0000-xxxx

PRODUCT NAME 產品名稱	**DOCUMENT No.** 文件編號	**Rev.** 版本	**OUPIIN** 歐品電子
DIN41612 C Type Female	Q9001-PSS-013	F	
	Approved 核准	**Checked** 審核	**Prepared** 製作
			XS 10/26'23

1.SCOPE 適用範圍

This product specification defines the product performance and the test methods to ascertain the performance of the DIN41612 C Type Female 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 DIN41612 C Type Female 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 is 2.0A, rating voltage is 500V DC/AC RMS.
額定電流 2.0A，額定電壓 500V DC/AC RMS。

3.7 STORAGE AND OPERATING TEMPERATURE 存貯與使用溫度

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 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. WAVE SOLDER 波峰焊接

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。

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。

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	20 mΩ Max. Initial. 初始狀態最大 20 mΩ。	Subject mated contacts assembled in housing to closed circuit of 100 mA max. 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 max，電壓 20 mV max。
	Per EIA-364-06 適用：EIA-364-06	

3. Insulation Resistance 絕緣阻抗	1000 MΩ Min. 最小 1000MΩ。 Per EIA-364-21 適用：EIA-364-21	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector.(500 V DC±10%). 測試產品相鄰端子間以及端子與接地間的電阻，(500 V DC±10%)。
4. Dielectric Withstanding Voltage 耐電壓	Connector must withstand test potential of 1000 VAC RMS for 1 minute, current leakage must be 0.2mA Max. 產品必須承受測試電壓 1000 VAC RMS，時間 1 分鐘，漏電流不大於 0.2 mA。 Per EIA-364-20 適用：EIA-364-20.	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. 對產品相鄰端子間 及端子與接地 間加載電壓，並測試其漏電流。
5. Durability (Repeated Mating /Un-mating) 耐久性	Contact Resistance: 30 mΩ Max. after testing. 測試後接觸阻抗最大 30 mΩ。 Per EIA-364-09 適用：EIA-364-09	Repeat mate and unmated for connector 400 cycles, at a speed of 25.4 mm/minute. Per EIA-364-09 重復進行配合產品 400 次插拔，速度 25.4mm/分鐘。適用：EIA-364-09，
6. Connector Pin Mating /Un-mating Force 單支端子插入力/拔出力	Mating force: 0.93 N/Pin Max. Un-mating force: 0.30 N/Pin Min. 插入力最大 0.93 N/Pin。 拔出力最 小 0.30 N/Pin。 Per EIA-364-13 適用：EIA-364-13	At a speed of 25.4 mm/minute, apply axial insert the mating part into fully or pull out from the subject product. 以 25.4 mm/分鐘的速度，軸向完全插入對配外掛程式到被測產品中或從被測產品中拔出。
7. Contact Retention Force 端子保持力	5.0 N/Pin Min. 最小 5.0 N/Pin。 Per EIA-364-29 適用：EIA-364-29	Apply axial pull out force at a speed of 25.4 mm/minute on the contact assembled in the housing. 以 25.4mm/分鐘的速度施加軸向拉力從塑膠本體上拔出端子。
8. Vibration Sinusoidal Low Frequency 低頻正弦振動	No electrical discontinuity greater than 1 μs shall occur, Contact Resistance: 30mΩ Max. 不允許出現超過 1 μs 的瞬間斷開，接觸阻抗最大 30 mΩ。 Per EIA-364-28 適用：EIA-364-28	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. 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。

9. Thermal Shock 熱衝擊	After testing, no damage, Contact Resistance 30 mΩ Max. Dielectric Strength should be OK, Insulation Resistance should be 1000 MΩ Min. 測試後產品無損壞，接觸阻抗最大 30 mΩ；耐電壓測試 OK，絕緣阻抗最小 1000MΩ。 Per EIA-364-32 適用：EIA-364-32	Temperature range from -55°C to +125°C. Start from -55°C, after 30 minutes, change to +125°C; change time is no more than 30 seconds, total 5 cycles.. 溫度變化範圍： -55°C~ +125°C。從 -55°C 開始，30 分鐘後換到+125°C，轉換時間不超過 30 秒共 5 個循環。
10. Humidity (Steady State) 恆溫恆濕	After testing, no damage, Contact Resistance 30 mΩ Max. Dielectric Strength should be OK, Insulation Resistance should be 1000 MΩ Min. 測試後產品無損壞，接觸阻抗最大 30 mΩ；耐電壓測試 OK，絕緣阻抗最小 1000MΩ。 Per EIA-364-31 適用：EIA-364-31	Temperature: 40±2°C. Relative Humidity: 90-95%. Duration: 96 Hours. 溫度：40±2°C。 相對濕度：90-95%。 持續時間：96 小時。
11. 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. 產品在測試完成後，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。 Per EIA-364-52 適用：EIA-364-52	Soldering time: 5 seconds. Temperature: 245±5°C. 焊接時間：5 秒。 溫度：245±5°C。
12. Salt Spray 鹽霧	After testing, no damage, Contact Resistance 30 mΩ Max. Dielectric Strength should be OK, Insulation Resistance should be 1000 MΩ Min. 測試後產品無損壞，接觸阻抗最大 30 mΩ；耐電壓測試 OK，絕緣阻抗最小 1000MΩ。 Per EIA-364-26 適用：EIA-364-26	5±1% salt concentration 48 hours 35±2°C 鹽水濃度 5±1%，時間 48 小時，溫度 35±2°C。
13.High Temperature Life 高溫老化	After testing, no damage, Contact Resistance 30 mΩ Max. Dielectric Strength should be OK, Insulation Resistance should be 1000 MΩ Min. 測試後產品無損壞，接觸阻抗最大 30 mΩ；耐電壓測試 OK，絕緣阻抗最小 1000MΩ。 Per EIA-364-17 適用：EIA-364-17	Subject product to 125±3°C for 96 hours continuously. 產品置於 125±3°C 連續 96 時。

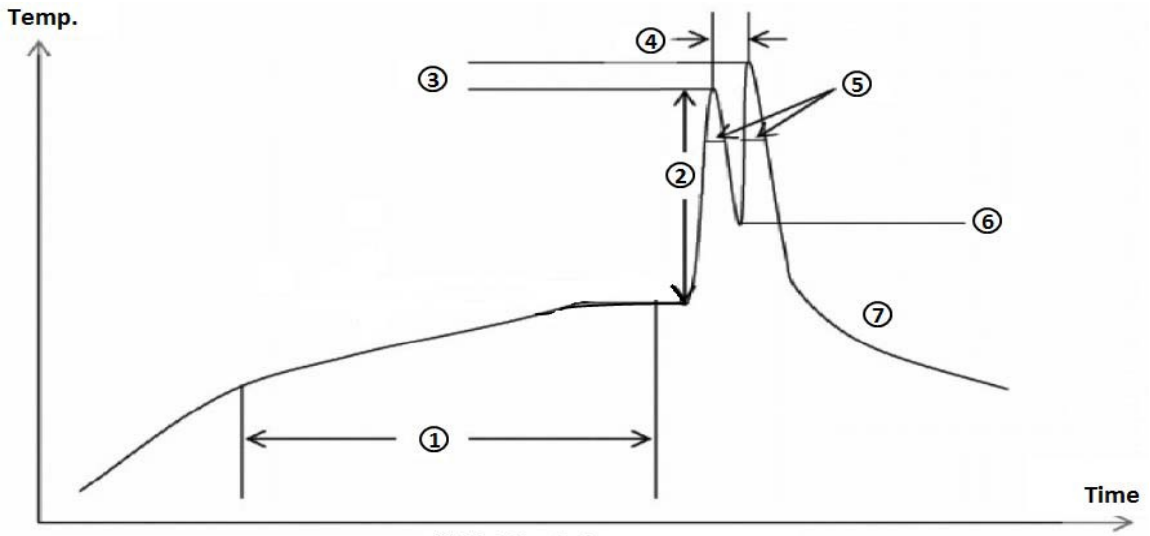
Table II: Product Qualification Test Sequence

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
1. Conformation of Product 產品確認	1,7	1,4	1,9	1,9	1,9	1,3	1,9	1,9
2. Contact Resistance 接觸阻抗	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
4.Dielectric Withstanding Voltage 耐電壓	4		4,8	4,8	4,8		4,8	4,8
5.Durability (Repeated Mating/Un-mating) 耐久性	5							
6. Connector Pin Mating/Un-mating Force 單支端子插入/拔出力		2						
7. Contact Retention Force 端子保持力		3						
8. Vibration Sinusoidal Low Frequency 低頻正弦振動			5					
9. Thermal Shock 熱衝擊				5				
10. Humidity (Steady State) 恆溫恆濕					5			
11. Solder-ability 可焊性						2		
12. Salt Spray 鹽霧							5	
13. .High Temperature Life 高溫老化								5

TableⅢ：Weld the curve graph in crest

附表Ⅲ：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