PRODUCT SPECIFICATION

產品規格書

產品名稱 Description	產品料號 Part No.	圖號 Drawing No.
2538-J Series 0.5mm FFC/FPC Connector Back Flip Type	2538-JxxG00DBT	S3220230711-02

PRODUCT NAME 產品名稱	DOCUMENT No.: 文件編號	Rev. 版本	OUPIIN 歐品電子
2538-J Series 0.5mm FFC/FPC Connector Back Flip Type (RoHS)	Q2538-PSS-I002	A (I525A)	
	Approved 核准	Checked 審核	Prepared 製作
	Q.A. Section Chief	Ruru Chen	2023.08.30

1. SCOPE 適用範圍

This product specification defines the product performance and the test methods to ascertain the performance of the 2538-J Series 0.5mm FFC/FPC Connector Back Flip Type, 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 2538-J Series 0.5mm FFC/FPC Connector Back Flip 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-1344A	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

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：0.5A
Rating voltage：50V AC
額定電流：0.5A
額定電壓：50V AC

3.7 STORAGE AND OPERATING TEMPERATURE 儲存與使用溫度

Temperature range：-55℃~+105℃.
Storage Temperature：-10℃~+50℃, Humidity：80%RH under. Time limit is 12 months the products are stored.
溫度範圍：-55℃~+105℃。
儲存溫度：-10℃~+50℃，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 II.
每個焊接週期包括三個連續的階段，見附表二。

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.
除非特別註明，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 10 cycles 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	100 mΩ Max. 最大 100 mΩ	Mate applicable FPC and measure by dry circuit, 20mV Max, 10mA. Per EIA-364-23. 將樣品與適合之 FPC 連接，測試電壓 20mV，限電流 10mA 下進行阻抗測試 適用：EIA-364-23
3. Insulation Resistance 絕緣阻抗	500 MΩ Min. 最小 500 MΩ	Mate applicable FPC and apply 100V DC between adjacent terminal or ground. Per EIA-364-21. 將樣品與適合之 FPC 連接，提供相鄰端子間測試電壓 100V DC 進行測試 適用：EIA-364-21
4. Dielectric Withstanding Voltage 耐電壓	There shall be no breakdown or flashover. 無損壞異撞、擊穿現象或產生火花	Mate applicable FPC, apply 250V AC(rms) for1 minute between adjacent terminal or ground. Per EIA-364-20. 將樣品與適合之 FPC 連接，相鄰端子間需可承受 250V AC(rms) 1 分鐘 適用：EIA-364-20
5. Temperature rise 溫升測試	The temperature rise above ambient shall not exceed 30℃ 溫升不能超過 30℃	Mate applicable FPC and measure the temperature rise of contact when the maximum AC rated current is passed. Per EIA-364-70 量測通過 FPC 最大容許電流時，樣品接觸點之溫升 適用：EIA-364-70

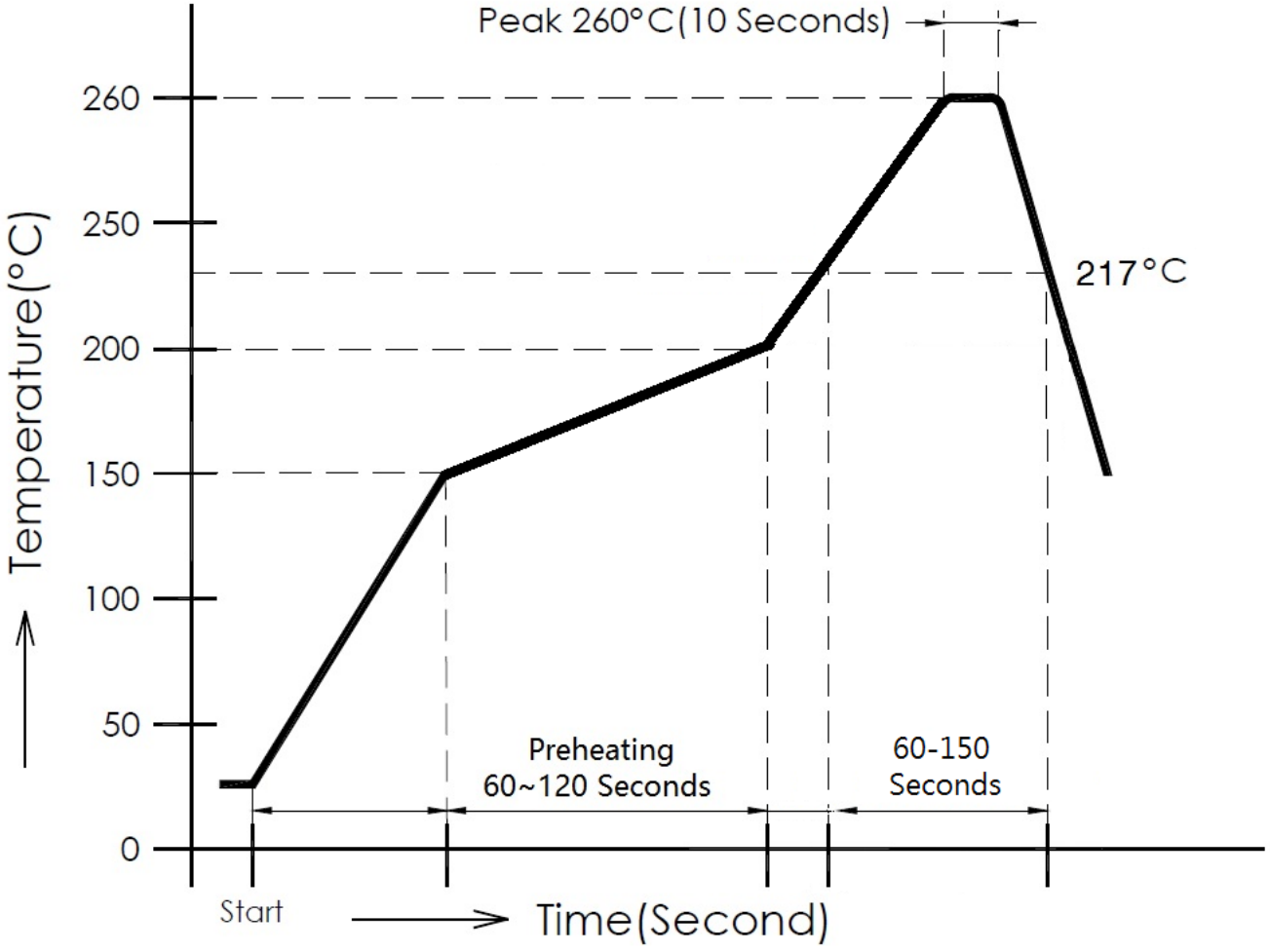
6. FPC Retention Force 端子保持力	Pin X 0.2N Min. 最小 Pin X 0.2N	Insert the actuator, pull the FPC at a rate of 25±3mm per minute. Per EIA-364-13 將蓋子蓋上，與 FPC 連接，以操作速度每分鐘位移 25±3mm 進行 FPC 保持力測試 適用：EIA-364-13
7. Contact Retention Force 端子保持力	0.8N/Pin. Min. 最小 0.8N/Pin	Apply axial pull out force at a speed of 25±3 mm/minute on the contact assembled in the housing. Per EIA-364-29 以 25±3mm/分鐘的速度施加軸向拉力從塑膠本體上拔出端子 適用：EIA-364-29
8. Durability 耐久性	After testing, no physical damage. Contact Resistance 100 mΩ max. 測試後，產品外觀無損壞，接觸阻抗最大 100 mΩ	Insert and withdraw actuator up to 20 cycles at the speed rate of less than 10 cycles/ minute. Per EIA-364-09 將蓋子與 FPC 反覆連接，以每分鐘小於 10 次連續操作 20 次 適用：EIA-364-09
9. Vibration 振動	After testing, no physical damage. Contact Resistance 100 mΩ max. No electrical discontinuity greater than 1μs shall occur. 測試後，產品外觀無損壞，接觸阻抗最大 100 mΩ，不允許出現超過 1 μs 的瞬間斷開	Subject mated connector to 10-55-10 Hz traversed in 1 minute at 1.5 mm amplitude, 2 hours each of 3 mutually perpendicular plane, 1 mA potential applied. Per EIA-364-28. 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 1 mA 適用：EIA-364-28
10. Mechanical Shock 機械冲擊	After testing, no physical damage. Contact Resistance 100 mΩ max. No electrical discontinuity greater than 1μs shall occur. 測試後，產品外觀無損壞，接觸阻抗最大 100 mΩ，不允許出現超過 1 μs 的瞬間斷開	Mate applicable FPC and subject, 3 times of shocks shall be applied for each 6 directions along 3 mutually perpendicular axes, DC 1 mA current during the test. (Total of 18 shocks) Peak value : 490m/s^2 {50G} Per EIA-364-27 將樣品與適合之 FPC 連接，通過 DC 1 mA 測試條件，連續測試 3 次。在 X、Y、Z 面上的 6 個垂直方向施予重力加速度 490m/s^2 {50G} 適用：EIA-364-27

11. Thermal Shock 溫度沖擊	After testing, no physical damage. Contact Resistance 100 mΩ max. 測試後，產品外觀無損壞，接觸阻抗最大 100 mΩ	Temperature range from -55±3℃ to +105±3℃. Start from -55±3℃, after 30 minutes, change to +105±3℃; total 5 cycles. Per EIA-364-32. 溫度變化範圍：-55±3℃~ +105±3℃。從-55±3℃開始，30 分鐘後換到+105±3℃，共 5 個循環 適用：EIA-364-32
12. Humidity 恆溫恆濕	After testing, no physical damage. Contact Resistance 100 mΩ max. Dielectric Strength should be OK. 測試後，產品外觀無損壞，接觸阻抗最大 100 mΩ，耐電壓測試OK	Temperature：60±2℃ Relative Humidity：90-95%. Duration：96 Hours. Per EIA-364-31. 溫度：60±2℃ 相對濕度：90-95% 持續時間：96 小時 適用：EIA-364-31
13. High Temperature Life 高溫老化	After testing, no physical damage. Contact Resistance 100 mΩ max. 測試後，產品外觀無損壞，接觸阻抗最大 100 mΩ	Subject product to 105±2℃ for 96 hours continuously. Per EIA-364-17. 產品置於 105±2℃，連續 96 小時 適用：EIA-364-17
14. Cold Resistance 耐寒性	After testing, no physical damage. Contact Resistance 100 mΩ max. 測試後，產品外觀無損壞，接觸阻抗最大 100 mΩ	Subject product to -55±2℃ for 96 hours continuously. Per EIA-364-59 產品置於-55±2℃，連續 96 小時 適用：EIA-364-59
15. Salt Spray 鹽霧	After testing, no physical damage. 測試後，產品外觀無損壞	5±1% salt concentration, 48±4 hours, 35±2℃. Per EIA-364-52. 鹽水濃度 5±1%，時間 48±4 小時，溫度 35±2℃ 適用：EIA-364-52
16. Solder-ability 可焊性	There shall have a solder coverage of 95% minimum. 產品在測試完成後,焊接部位粘錫面積大於 95%	Soldering time：5±0.5 seconds. Temperature：245±5℃ Per EIA-364-52. 焊接時間：5±0.5 秒 溫度：245±5℃ 適用：EIA-364-52

Table Ⅱ ：Reflow Soldering Profile

附表二：回流焊接曲線圖

Parameter 參數	Reference 參考	Specification 規格
Ramp-up (升溫區)	25℃ ~150℃	3℃ /S Max
Pre-heating (預熱區)	150℃ ~200℃	60~120 sec
Time maintained above(保持時間)	217℃	60-150 sec
Peak Temperature	260+0/-5℃	10 sec



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。