



PRODUCT SPECIFICATION

產品規格書

產品名稱 Description	產品料號 Part No.	圖號 Drawing No.
8976-C Series USB 4 Gen3 Type C, 40Gbps SMD Type	8976-C24G00DB4T	S1820231107-02

PRODUCT NAME 產品名稱	DOCUMENT No.: 文件編號	Rev. 版本	OUPIIN
8976-C Series USB 4 Gen3 Type C, 40Gbps SMD Type (RoHS)	Q8976-PSS-I001	A (I619)	歐品電子
	Approved 核准	Checked 審核	Prepared 製作
	Q.A. Section Chief	Ruru Chen	2024.03.12



PRODUCT SPECIFICATION OF OUPIIN

1. SCOPE 適用範圍

This product specification defines the product performance and the test methods to ascertain the performance of the 8976-C Series USB 4 Gen3 Type C, 40Gbps SMD 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 8976-C Series USB 4 Gen3 Type C, 40Gbps SMD 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。



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3.6. RATING CURRENT AND RATING VOLTAGE 額定電流與額定電壓

Rating Current : 5A for collectively power supply Pin (A1, A4, A9, A12, B1, B4, B9, B12);
1.25A for VCONN Pin;
0.25A for others.

Rating Voltage : 30V AC.

額定電壓 : 5A for collectively power supply Pin (A1, A4, A9, A12, B1, B4, B9, B12);
1.25A for VCONN Pin;
0.25A for others.

額定電壓 : 30V AC

3.7. STORAGE AND OPERATING TEMPERATURE 儲存與使用溫度

Temperature range : -40°C ~+85°C

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 ~+85°C

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 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準。

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。



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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.

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 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	40 mΩ Max. Initial 初始值最大 40 mΩ	Subject mated contacts assembled in housing of 100 mA max and 20 mV max. Per EIA-364-23 所述固定在外殼裡的端子測試：電流 100 mA，電壓 20 mV max。 適用：EIA-364-23
3. Insulation Resistance 絕緣阻抗	100 MΩ Min. 最小 100 MΩ	Apply 500V DC for 1 minute between the adjacent contacts in the mated connector. Per EIA-364-21 (500 V DC±10%). 施加 500V DC 一分鐘，測試產品相鄰端子間的電阻。 適用：EIA-364-21
4. Dielectric Withstanding Voltage 耐電壓	There shall be no breakdown or flashover, current leakage must be 0.5mA Max 產品應無擊穿或閃燃，漏電流不大於 0.5 mA。	Measure by applying test potential of 100V AC between the adjacent contacts for 1 minute. Per EIA-364-20. 樣品相鄰端子間施加測試電壓 100V AC，時間一分鐘。 適用：EIA-364-20
5. Durability 耐久性	After testing, no physical damage. Contact Resistance 40 mΩ Max. 測試後，產品外觀無損壞，接觸阻抗最大 40 mΩ。	Repeat mate and unmated for connector 10000 cycles, at a rate of 500±50 cycles/hour. Per EIA-364-09 重複進行配合產品 10000 次插拔，速度 500±50 次/小時。 適用：EIA-364-09



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<p>6. Mating/Un-mating Force 插入力/拔出力</p>	<p>Mating force : 5~20N. Un-mating force : 8~20N, after 10000 cycles 6~20N. 插入力：5~20N 拔出力：8~20N，10000 次循環後 6~20N。</p>	<p>At a speed of 12.5mm/minute, apply axial insert the mating part into fully or pull out from the subject product. Per EIA-364-13 以 12.5mm/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。 適用：EIA-364-13</p>
<p>7. Thermal Shock 溫度沖擊</p>	<p>After testing, no physical damage. 測試後，產品外觀無損壞。</p>	<p>Temperature range from -40°C to +85°C. Start from -40°C, after 30 minutes, change to +85°C; total 10 cycles. Per EIA-364-32. 溫度變化範圍：-40°C~ +85°C。從 -40°C 開始，30 分鐘後換到+85°C，共 10 個循環。 適用：EIA-364-32</p>
<p>8. Salt Spray 鹽霧</p>	<p>After testing, no detrimental corrosion allowed in contact area and base metal exposed. 測試後，接觸區域和裸露的金屬不允許有有害的腐蝕。</p>	<p>5±1% salt concentration, 24 hours, 35±2°C Per EIA-364-26 鹽水濃度 5±1%，時間 24 小時，溫度 35±2°C。 適用：EIA-364-26</p>
<p>9. Solder-ability 可焊性</p>	<p>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%。</p>	<p>Soldering time : 3 to 5 Seconds Soldering Temperature : 245±5°C. Per EIA-364-52 焊接時間：3~5 秒 焊接溫度：245±5°C 適用：EIA-364-52</p>

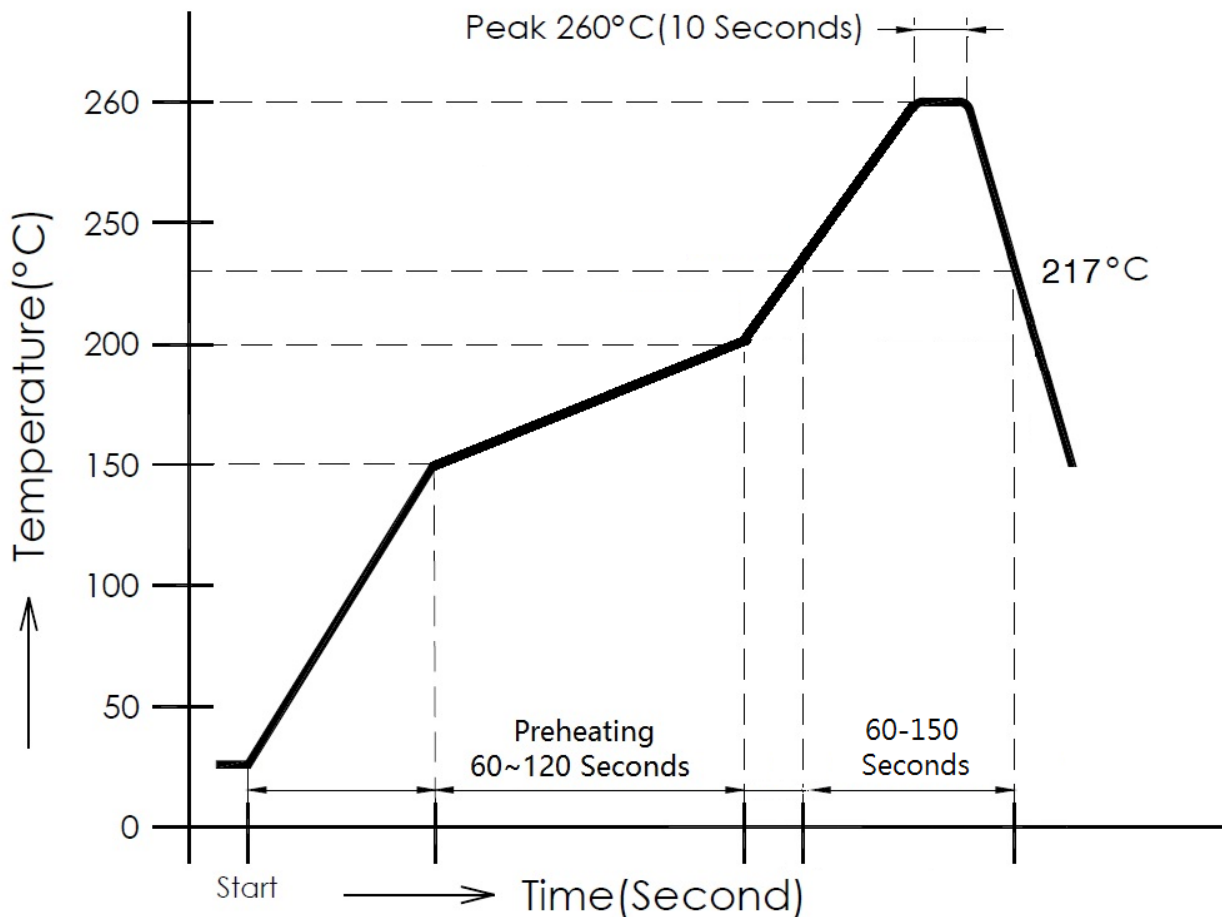


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Table II : Reflow Soldering Profile

附表二：回流焊曲線圖

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