

文件编号 Document No.	ESP-00-2-007-03	文件名称 Document Name	产品/工艺变更通知 Product/Process Change Notice (PCN)
文件版本 Document Version	1.1	保存期限 Retention Period	3 年 3 years

**增加 NittoEM-350 作为 ESP32-PICO-D4 的备用 DAF 材料**

**Add NittoEM-350 as the alternative DAF material for ESP32-PICO-D4**

PCN 编号 PCN No.	PCN-2020-006	提出日期 Issue Date of PCN	2020/6/16
产品名称 Product Name	ESP32-PICO-D4	变更日期 Proposed Date of Change	2020/6/16
封装类型/尺寸 Package Type/Size	LGA 7x7	首次出货日期 Proposed Date of First Shipment	2020/9/15

客户批准/Customer Consent: 需要批准/Approval Required  
通知, 无需批准/Notification, Approval Not Required

变更等级/Classification of Change: 主要变更/Major 轻微变更/Minor

变更原因/Reason for Change:

乐鑫的封测供应商: 江苏长电科技股份有限公司建议为 ESP32-PICO-D4 芯片引入一款 2<sup>nd</sup> source Die Attach Film (DAF) 材料以提升供应链的多样性。乐鑫在完成了该材料的可靠性测试后, 同意引入该款 2<sup>nd</sup> source DAF 材料作为 ESP32-PICO-D4 的备用材料。

Espressif's assembly and test (A/T) vendor, Jiangsu Changdian Technology Co., Ltd., recommended introduction of a 2<sup>nd</sup> source Die Attach File (DAF) material for ESP32-PICO-D4 chip to diversify the supply sources. Espressif has completed the reliability tests to qualify this DAF material on ESP32-PICO-D4 and will be introducing this 2<sup>nd</sup> source DAF as an alternative material for ESP32-PICO-D4.

变更描述/Description of Change:

引入料号为 NittoEM-350 的 Die Attach Film (DAF) 材料作为 ESP32-PICO-D4 芯片上替换 HitachiHR-5104 的备用 DAF 材料。

A new Die Attach Film (DAF), Part Number: NittoEM-350, will be introduced as an alternative to existing DAF material, part Number: Hitachi HR-5104, for ESP32-PICO-D4.

影响产品/Impacted Products:

ESP32-PICO-D4

变更影响/Impact of Change:

NittoEM-350 符合 RoHS 标准, 且该变更对 ESP32-PICO-D4 的品质、成本、交期和性能没有影响。

NittoEM-350 meets RoHS requirements. And this change has no impact on quality, cost, delivery and

performance for ESP32-PICO-D4.

变更验证结果/Test Verification Result:

NittoEM-350 在 ESP32-PICO-D4 上通过了包含 HTST, LTST, Pre-conditon L3, TCT, uHast, solderability 和 SHT 这些项目的可靠性测试, 具体结果请见如下表格。

NittoEM-350 has passed the reliability tests on the ESP32-PICO-D4 consisting of HTST, LTST, Pre-conditon L3, TCT, uHAST, solderability, and SHT. Please refer to the following table for details.

试验项目 Test Items	试验条件 Test Conditions	数量 S.S.	判定 Acc/Re	SAT Result	外观 VI Result		电性测试 ET Result		结论 Conclusion
					Fail	Pass	Fail	Pass	
					HTST	Ta=150°C, 500/1000h	77	0/1	
LTST	Ta=-40°C, 500/1000h	77	0/1	N/A	0	77	0	77	PASS
Precondition L3	Bake: 125°C, 24h Soak: 30°C, 60%RH, 192h Reflow: 260°C, 3times	154	0/1	PASS	0	154	0	154	PASS
TCT	-65°C ~ 150°C, soak mode3, 30min/cycle, 200/500 Cycles	77	0/1	N/A	0	77	0	77	PASS
uHAST	130°C, 85%RH, 96h	77	0/1	N/A	0	77	0	77	PASS
Solderability	Steam aging: 1h; 245°C, 5s	15	0/1	N/A	0	15	NA	NA	PASS
SHT	270°C, 10S	10	0/1	N/A	0	10	0	10	PASS

变更识别方式/ Change Identification Method:

NA

变更前后产品处理/:How to Deal with Products:

- 先进先出 (FIFO).  
First in First out (FIFO).
- 如需乐鑫提供 NittoEM-350 的 RoHS 报告, 请联系乐鑫的商务支持部门。  
Please contact Espressif's Business Support team for a copy of the RoHS report for NittoEM-350.

相关报告/Report(s) Attached:

- Related ECN No.: ECN-2020-018
- Reliability Report or Plan: SP191225-144.pdf
- Function Test Report: \_\_\_\_\_
- RoHS/HF Test Report: EM-350 RoHS6 CE\_2019\_46516A 20190506.pdf
- Other Reports (Pls specify): \_\_\_\_\_

**邮件订阅****Espressif Email Notifications**

乐鑫为注册用户提供电子邮件通知服务，用户可通过[乐鑫订阅系统](#)接收技术文档更新、新闻通讯、PCN 等邮件通知。

Espressif sends email notifications of technical documentation changes, along with newsletters, PCNs and other valuable information, to subscribed customers only. If you wish to stay updated on our products and services, please subscribe [here](#).

**客户响应要求****Customer Response Requirements**

客户须按照如下要求给予 Espressif PCN 反馈:

Customers are required to respond to Espressif, according to the following guidelines, and confirm receipt of the PCN:

**主要变更/For Major Changes:**

a) 客户须在乐鑫发出 PCN 后的 30 天内告知已收到 PCN。

Customers should confirm receipt of the PCN within 30 calendar days from the date Espressif sends it to them.

b) 如客户未在接收到 PCN 后的 30 天内告知已收到，则视为客户接受变更。

If customers do not confirm receipt of the PCN within 30 calendar days, they will be regarded as having accepted the proposed changes.

c) 客户告知确认收到 PCN 后，如未在 90 天内反馈其他要求，则视为客户接受变更。

After the customers confirm receipt of the PCN, the lack of any additional responses on their part within 90 calendar days constitutes acceptance of the proposed changes.

**轻微变更/For Minor Changes:**

a) 如客户未在接收到 PCN 后的 7 天内告知已收到，则视为客户接受变更。

If customers do not confirm receipt of the PCN within 7 calendar days, they will be regarded as having accepted the proposed changes.

请反馈至 [pcn@espressif.com](mailto:pcn@espressif.com)。

Please send feedback to [pcn@espressif.com](mailto:pcn@espressif.com).

**客户批准/确认信息****Customer Approval/Acknowledgement and Remarks**

客户公司全称:

Customer's Company Name:

PCN 评审结果/PCN Review Result:

批准/Approval

不批准/Disapproval

需要分析/Further Analysis Required

客户意见/Comment:			
公司代表人姓名 Representative's Name:		公司代表人职责 Representative's Job Title:	
公司代表人签名 Representative's Signature:		日期 Date:	