

Subject: Nexperia Product Change Notification: CN-202505015F



Product Change Notification

CN-202505015F

Issue date: 03 Jul 2025

Effective date: 01 Oct 2025

Here's your personalized quality information concerning products our customers and partners purchased from Nexperia.

For more details please contact your respective Nexperia CSR/AM.



Introduction of HC types in C110 wafer process at 12" Wingskysemi (WSS)

Change Category

☒ Wafer Fab Process	☐ Assembly Process	☒ Product Marking	☐ Test Location	☒ Design
☒ Wafer Fab Materials	☐ Assembly Materials	☐ Mechanical Specification	☐ Test Process	☐ Errata
☒ Wafer Fab Location	☐ Assembly Location	☐ Packing/Shipping/Labeling	☐ Test Equipment	☐ Electrical spec./Test coverage

Details of this change

Redesign of HC types from 8" PC3xx process to 12" mature C110 wafer process Wingskysemi (WSS) Shanghai Dingtai Jiangxin Technology Co., Ltd. China.

- Qualification in accordance JEDEC and Automotive Electronics Council Q100 grade 1
- No change in form, function, quality, workability and reliability anticipated
- Schmitt trigger action added at all inputs to make the circuit tolerant of slower input rise and fall times
- Lower supply and leakage currents
- No change in data sheet and test limits
- Improved Cpk performance
- No change in ordering code 12NC (sales part number)

SQR_PCN_CN-202505015F_WSS_C110_HC-types.pdf: https://qcm.nexperia.com/Document/DOC-597517/SQR_PCN_CN-202505015F_WSS_C110_HC-types.pdf

Why do we implement this change?

- This is part of our long-term plan to move mature products from 8" to 12" foundries to advanced manufacturing processes and technologies.
- It is a commitment to portfolio longevity and supply continuity.
- The current HC types are produced in older PC3xx processes that are not suitable for transfer to modern 12" wafer fabs.

- Types have been redesigned in the existing and proven C110 process which is in production using 12" wafers.
- This guarantee continued supply of products in the HC logic types.

Identification of affected products

- The traceability is given by the diffusion location identifier which is indicated on product marking (if space permits) and in Product Manufacturing Code (PMC) on reel and box labels.
- Diffusion location identifier on product marking and PMC on reel and box labels code 1st character represent the diffusion location, "w" for Wingskysemi (WSS).

Management summary

Introduction of HC types in C110 wafer process at 12" Wingskysemi (WSS)

Product availability

Production

Planned first shipment: 01 Oct 2025

Existing inventory will be shipped until depleted

Sample information

Samples are available upon request

Impact

No impact to the product's functionality anticipated

- No change in form, function, quality, workability and reliability anticipated
- No change in data sheet and test limits
- No change in ordering code 12NC (sales part number)

Data sheet revision

No impact to existing datasheet

Feedback

Your acknowledgement of this change, conform JEDEC J-STD-046, is expected till 02 Aug 2025. Lack of acknowledgement of the PCN constitutes acceptance of the change.

Additional information

[View Change Notification Online](#)

Remarks

Wafer fab diffusion location identifier on product (topside) marking (if space permits) and on reel and box labels: "w"= Wingskysemi (WSS) Shanghai Dingtai Jiangxin Technology Co., Ltd. China. PCN samples are available upon request via Helpdesk+ from BG IC Solutions sample store in Nijmegen, The Netherlands. Maximum sample order 300 pieces per type.

Contact and support

For all Quality Notification content inquiries, please contact your local Nexperia Sales Support Team.

For specific questions on this notice or the products affected please contact our specialist directly:

In case of distribution, please contact you distribution partner.

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PCN CN-202505015F

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Revision: 03 July 2025

Qualification Report

Document Information

Information	Content
Author	
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03 July 2025	New document

Contact Information

For more information, please contact:



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Introduction of HC types in C110 wafer process at 12" Wingskysemi (WSS)

1. Subject

This Qualification Report gives background information about the next release in C110 process at Wingskysemi (WSS) Shanghai China as a new fab location for the HC types. It provides details of the qualification results to support PCN CN-202505015F

2. Diffusion factory details

2.1 Wingskysemi (WSS) Shanghai Dingtai Jiangxin Technology Co., Ltd. China

Shanghai Dingtai Jiangxin Technology Co., Ltd. (Wingskysemi) is one of the major projects in Shanghai with a total investment of more than 12 billion RMB. It is also the first 12-inch automotive grade semiconductor wafer fab in China. Wingskysemi in accordance with the international top standard construction and the introduction of standard production equipment to achieve a high degree of automation to create the world's super intelligent factory and research and development center. As said, the Nexperia products will be manufactured in WSS 12-inch wafer fab situated in Shanghai China. WSS has been certified for IATF 16949 since 2024.

2.2 Wafer fab location and process

Wingskysemi (WSS) 12" wafer fab location in Shanghai China and process C110.

2.3 Affected assembly locations

No change in the existing assembly locations.

3. Reliability test program

In line with the Nexperia General Quality Specification, an extensive qualification program was performed to validate the Wingskysemi (WSS) wafer fab location in Shanghai China on quality and reliability performance on C110 process. The qualification program is compliant to AEC-Q100 (Grade 1) and AEC-Q006.

3.1 Qualification strategy

Based on Nexperia General Quality Specification standards Nexperia have evaluated the proposed change and determined the reliability tests needed to demonstrate that form, function, quality and reliability is unchanged. The reliability test results are summarised in chapter 4. The qualification was carried out according to AEC-Q100 (Grade 1), AEC-Q006 and included extended read-points to show robustness.

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4. Reliability Report

The qualification as reported in the embedded file below was carried out to release all product types mentioned in PCN CN-202505015F



5. Electrical and thermal performance

5.1 Electrical performance

- For all parameters electrical distributions achieve $C_{pk} > 1.67$ at $-40, 25, 85$ and $125\text{ }^{\circ}\text{C}$ w.r.t. datasheet limits.
- Schmitt trigger action added at all inputs to make the circuit tolerant of slower input rise and fall times.

5.2 Thermal performance

No change in thermal performance.

6. Comparison of visual appearance

There will be no change of visual appearance.

7. Traceability

The traceability is given by the diffusion fab location indicator (identifier) which is indicated on the reel and box labels: "w"= Wingskysemi (WSS) Shanghai Dingtai Jiangxin Technology Co., Ltd. China.

8. Conclusion

Based on the reliability qualification results, the C110 process in Wingskysemi (WSS) can be released for the HC types announced via PCN CN-202505015F. The results comply with the requirements for product release to AEC-Q100/Q006 grade 1

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