



Final Product/Process Change Notification

Document #:FPCN25572Z47

Issue Date:02 Dec 2024

Title of Change:	To Update FPCN25572Z - To include the reliability data of UQFN12 Package Parts for the Qualification of Vanguard Fab and Assembly related changes for Logic Part.
Proposed Changed Material First Ship Date:	30 Jun 2025 or earlier if approved by customer
Current Material Last Order Date:	20 Nov 2023 <i>Orders received after the Current Material Last Order Date expiration are to be considered as orders for new changed material as described in this PCN. Orders for current (unchanged) material after this date will be per mutual agreement and current material inventory availability.</i>
Current Material Last Delivery Date:	N/A <i>The Current Material Last Delivery Date may be subject to change based on build and depletion of the current (unchanged) material inventory</i>
Product Category:	Active components – Integrated circuits
Contact information:	Contact your local onsemi Sales Office or logic.fpcn@onsemi.com
PCN Samples Contact:	Contact your local onsemi Sales Office to place sample order. Sample requests are to be submitted no later than 45 days after publication of this change notification. Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements.
Sample Availability Date:	22 Nov 2024
PPAP Availability Date:	30 Dec 2024
Additional Reliability Data:	Contact your local onsemi Sales Office or ChangKit.Mok@onsemi.com
Type of Notification:	This is a Final Product/Process Change Notification (FPCN) sent to customers. The change will be implemented at 'Proposed Change Material First Ship Date' in compliance to J-STD-46 or ZVEI, or earlier upon customer approval, or per our signed agreements. onsemi will consider this proposed change and it's conditions acceptable, unless an inquiry is made in writing within 45 days of delivery of this notice. To do so, contact PCN.Support@onsemi.com .
Change Category	
Category	Type of Change
Process - Wafer Production	Move of all or part of wafer fab to a different location/site/subcontractor, New wafer diameter
Test Flow	Move of all or part of electrical wafer test and/or final test to a different location/site/subcontractor
Equipment	Production from a new equipment/tool which uses a different basic technology or which due to its unique form or function can be expected to influence the integrity of the final product
Data Sheet	Change of datasheet parameters/electrical specification (min./max./typ. values) and/or AC/DC specification
Process - Assembly	Move of all or part of assembly to a different location/site/subcontractor., Change of mold compound, Die attach material, Change of leadframe base material, Change of wire bonding, Change of product marking

Description and Purpose:

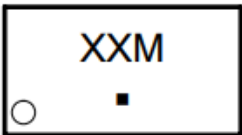
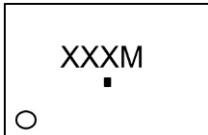
With reference to **FPCN25572Z**, this FPCN presents the information solely for UQFN12 package parts the pertinent reliability data.

	From		To
Fab Site	TPSCO	Tower	Vanguard International
Wafer Diameter	200 mm	150mm	200mm

Assembly Related Changes

	From		To	
Assy Site	UTAC 1	onsemi Tarlac	onsemi Tarlac	UTAC 3
Test Site	onsemi Seremban	onsemi Tarlac	onsemi Tarlac	UTAC 3
Leadframe	PPF (EFTEC)	PPF (EFTEC)	PPF (C7025)	PPF (C7025)
Die Attach	AB 8006NS	AB 8006NS	AB 8006NS	HR-5104
Wire	1 mil Au	0.8 mil PCC	0.8 mil PCC	0.8 mil CuPdAu
Mold	G770HCD	G760	G760	G770LTD

Marking Related Changes

	From	To
Marking	 XX = Device Code M = Date Code ■ or G = Pb-Free Package (Pb Free indication "G" or Microdot "■", may or may not be present)	 XXX = Device Code M = Date Code ■ or G = Pb-Free Package (Pb Free indication "G" or Microdot "■", may or may not be present)

Reason / Motivation for Change:	Source/Supply/Capacity Changes Process/Materials Change
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Anticipated impact on fit, form, function, reliability, product safety or manufacturability:	The device has been qualified and validated based on the same Product Specification. The device has successfully passed the qualification tests. Potential impacts can be identified, but due to testing performed by onsemi in relation to the PCN, associated risks are verified and excluded. No anticipated impacts.
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Sites Affected:

onsemi Sites	External Foundry/Subcon Sites
onsemi Tarlac, Philippines	UTAC, Thailand
	Vanguard International Semiconductor, Taiwan

Marking of Parts/ Traceability of Change:	Custom source on label will show TW instead of US/JP to indicate new die source from Vanguard. Changed material may be identified by plant code or lot code too.
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Reliability Data Summary:

QV DEVICE NAME : NL3X5004MU2TAG

RMS : O93553 / O95336

PACKAGE : uQFN12 (Tarlac)

Test	Specification	Condition	Interval	Results
High Temperature Operating Life	JESD22-A108	Ta= 125°C, 100 % max rated Vcc	1008 hrs	0/231
High Temperature Storage Life	JESD22-A103	Ta= 150°C	1008 hrs	0/231
Early Life Failure Rate	JESD22-A108	Ta=125°C, 100 % max rated Vcc	48 hrs	0/2400
Preconditioning	J-STD-020 JESD-A113	MSL 1@260°C, Pre TC, uHAST, HAST for surface mount pkgs only	-	0/693
Temperature Cycling	JESD22-A104	Ta= -65°C to +150°C	500 cyc	0/231
Highly Accelerated Stress Test	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0/231
Unbiased Highly Accelerated Stress Test	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/231

QV DEVICE NAME : NL3X5004MU2TAG

RMS : O95481

PACKAGE : uQFN12 (UTL)

Test	Specification	Condition	Interval	Results
High Temperature Operating Life	JESD22-A108	Ta= 125°C, 100 % max rated Vcc	1008 hrs	0/231
High Temperature Storage Life	JESD22-A103	Ta= 150°C	1008 hrs	0/231
Early Life Failure Rate	JESD22-A108	Ta=125°C, 100 % max rated Vcc	48 hrs	0/2400
Preconditioning	J-STD-020 JESD-A113	MSL 1@260°C, Pre TC, uHAST, HAST for surface mount pkgs only	-	0/693
Temperature Cycling	JESD22-A104	Ta= -65°C to +150°C	500 cyc	0/231
Highly Accelerated Stress Test	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0/231
Unbiased Highly Accelerated Stress Test	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/231

To view Embedded attachments:

1. Download pdf copy of the PCN to your computer
2. Open the downloaded pdf copy of the PCN
3. Click on the paper clip icon available on the menu provided in the left/bottom portion of the screen to reveal the Attachment field
4. Then click on the attached file.

Electrical Characteristics Summary:

See embedded electrical characteristic changes file.



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List of Affected Parts:

Note: Only the standard (off the shelf) part numbers are listed in the parts list. Any custom parts affected by this PCN are shown in the customer specific PCN addendum in the PCN email notification, or on the **PCN Customized Portal**.

Current Part Number	New Part Number	Qualification Vehicle
NLVSX5014MUTAG	NL3X5004MU2TAG-Q	NL3X5004MU2TAG
NLVSX5004MUTAG	NL3X5004MU2TAG-Q	NL3X5004MU2TAG