



Final Product/Process Change Notification

Document #:FPCN25572Z42

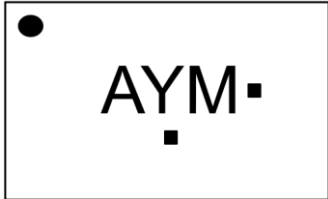
Issue Date:22 Nov 2024

Title of Change:	Update to FPCN25572Z - To include the reliability data of 9306 UQFN8 package devices for the Qualification of Vanguard Fab and Assembly related changes for Logic part	
Proposed Changed Material First Ship Date:	29 May 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:	18 Oct 2024	
PPAP Availability Date:	20 Nov 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 wire bonding	
Description and Purpose:		
With reference to FPCN25572Z , this FPCN presents the information solely for UQFN8 and the pertinent reliability data		
	From	To
Fab Site	Tower Semiconductor	Vanguard International Semiconductor (VIS)
Wafer Diameter	150mm	200mm

Assembly/Test related changes

	From	To
Assembly Site	onsemi Seremban	onsemi Tarlac
Test Site	onsemi Seremban	onsemi Tarlac
Wire	0.8 mil Au	0.8 mil PCC

Marking related changes

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

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.

Sites Affected:

onsemi Sites

onsemi Tarlac, Philippines

External Foundry/Subcon Sites

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.

Reliability Data Summary:

QV DEVICE NAME : NLA9306MUQ1TCG-Q
RMS : S94150
PACKAGE : UQFN 8

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
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

Note AEC-1pager is attached.

To view 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:

Maximum Ratings

EXISTING

Table 3. MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V _{ref(1)}	Reference Voltage (Note 2)	-0.5 to +7.0	V
V _{bias(ref)(2)}	Reference Bias Voltage (Note 3)	-0.5 to +7.0	V
V _{IN}	Input Voltage	-0.5 to +7.0	V
V _{IO}	Input / Output Pin Voltage	-0.5 to +7.0	V
I _{CH}	DC Channel Current	128	mA
I _{IK}	DC Input Diode Current V _{IN} < GND	-50	mA
T _{STG}	Storage Temperature Range	-65 to +150	°C
T _L	Lead Temperature, 1 mm from Case for 10 Seconds	T _L = 260	°C
T _J	Junction Temperature Under Bias	T _J = 150	°C
θ _{JA}	Thermal Resistance (Note 2)	θ _{JA} = 150	°C/W
P _D	Power Dissipation in Still Air at 85°C	P _D = 833	mW
MSL	Moisture Sensitivity	Level 1	
F _R	Flammability Rating Oxygen Index: 28 to 34	UL 94 V-0 @ 0.125 in	
V _{ESD}	ESD Withstand Voltage Human Body Mode (Note 3) Machine Model (Note 4) Charged Device Model (Note 5)	> 4000 > 400 N/A	V
I _{LATCHUP}	Latchup Performance Above V _{CC} and Below GND at 125°C (Note 6)	±100	mA

NEW

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V _{bias(ref)(2)}	Reference Bias Voltage (Note 3)	-0.5 to +7.0	V
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T _J	Junction Temperature Under Bias	T _J = 150	°C
θ _{JA}	Thermal Resistance (Note 2)	θ _{JA} = 150	°C/W
P _D	Power Dissipation in Still Air at 85°C	P _D = 833	mW
MSL	Moisture Sensitivity	Level 1	
F _R	Flammability Rating Oxygen Index: 28 to 34	UL 94 V-0 @ 0.125 in	
V _{ESD}	ESD Withstand Voltage Human Body Mode (Note 3) Machine Model (Note 4) Charged Device Model (Note 5)	> 2000 N/A > 1000	V
I _{LATCHUP}	Latchup Performance Above V _{CC} and Below GND at 125°C (Note 6)	±100	mA

DC Electrical Characteristic

EXISTING

Table 5. DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	T _A = -55°C to +125°C			Unit
			Min	Typ (Note B)	Max	
V _{IK}	Input Clamping Voltage	I _I = -18 mA; V _{I(EN)} = 0 V			-1.2	V
I _{IH}	High-Level Input Current	V _I = 5 V; V _{I(EN)} = 0 V			5	µA
C _{I(EN)}	EN Pin Input Capacitance	V _I = 3 V or 0 V		7.1		pF
C _{I(OFF)}	OFF-State I/O Pin Capacitance SCLn, SDAn	V _O = 3 V or 0 V; V _{I(EN)} = 0 V		4	6	pF
C _{I(OFF)}	ON-State I/O Pin Capacitance SCLn, SDAn	V _O = 3 V or 0 V; V _{I(EN)} = 3 V		9.3	12.5	pF
R _{ON}	ON-State Resistance ⁽²⁾⁽³⁾ SCLn, SDAn	V _I = 0 V; I _O = 64 mA V _{I(EN)} = 4.5 V V _{I(EN)} = 3 V V _{I(EN)} = 2.3 V V _{I(EN)} = 1.5 V		2.4 3.0 3.8 9.0	5.0 6.0 8.0 20	Ω
		V _I = 2.4 V; I _O = 15 mA V _{I(EN)} = 4.5 V V _{I(EN)} = 3 V		4.8 46	7.5 80	
		V _I = 1.7 V; I _O = 15 mA V _{I(EN)} = 2.3 V		40	80	

NEW

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V _{IK}	Input Clamping Voltage	I _I = -18 mA; V _{I(EN)} = 0 V			-1.2	V
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C _{I(EN)}	EN Pin Input Capacitance	V _I = 3 V or 0 V		7.1		pF
C _{I(OFF)}	OFF-State I/O Pin Capacitance SCLn, SDAn	V _O = 3 V or 0 V; V _{I(EN)} = 0 V		4	6	pF
C _{I(OFF)}	ON-State I/O Pin Capacitance SCLn, SDAn	V _O = 3 V or 0 V; V _{I(EN)} = 3 V		9.3	13.1	pF
R _{ON}	ON-State Resistance ⁽²⁾⁽³⁾ SCLn, SDAn	V _I = 0 V; I _O = 64 mA V _{I(EN)} = 4.5 V V _{I(EN)} = 3 V V _{I(EN)} = 2.3 V V _{I(EN)} = 1.5 V		2.4 3.0 3.8 9.0	5.0 6.0 8.0 20	Ω
		V _I = 2.4 V; I _O = 15 mA V _{I(EN)} = 4.5 V V _{I(EN)} = 3 V		4.8 46	7.5 80	
		V _I = 1.7 V; I _O = 15 mA V _{I(EN)} = 2.3 V		40	80	

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
NLVPCA9306AMUTCG	NLA9306MUQ1TCG-Q	NLA9306MUQ1TCG-Q