



Final Product/Process Change Notification

Document #:FPCN25572X41

Issue Date:02 Dec 2024

Title of Change:	Update for FPCN25572X - To include the reliability data of TSSOP8 package devices for the Qualification of Vanguard Fab and Assembly related changes for Logic Part.	
Proposed First Ship date:	09 Mar 2025 or earlier if approved by customer	
Contact Information:	Contact your local onsemi Sales Office or logic.fpcn@onsemi.com	
PCN Samples Contact:	Contact your local onsemi Sales Office. Sample requests are to be submitted no later than 30 days from the date of first notification, Initial PCN or Final PCN, for this change. Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements.	
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. FPCNs are issued 90 days prior to implementation of the change. onsemi will consider this change accepted, unless an inquiry is made in writing within 30 days of delivery of this notice. To do so, contact PCN.Support@onsemi.com	
Marking of Parts/ Traceability of Change:	Custom source on label will show TW instead of IL/US to indicate new die source from Vanguard. Changed material may be identified by plant code or lot code too.	
Change Category:	Assembly Change, Wafer Fab Change	
Change Sub-Category(s):	Manufacturing Site Transfer, Datasheet/Product Doc change, Material Change	
Sites Affected:		
onsemi Sites	External Foundry/Subcon Sites	
onsemi Carmona, Philippines	Vanguard International Semiconductor, Taiwan	
Description and Purpose:		
This update notification to FPCN25572X is to provide the reliability data for the TSSOP8 parts listed in this notification		
	From	To
Fab Site	Tower Semiconductor	Vanguard International Semiconductor (VIS)
Wafer Diameter	150mm	200mm
	From	To
Assembly Site	Stars	onsemi Carmona
Die Attach	Ablestik 8390	CRM 1076
Wire	0.8 mil Au	1 mil PCC
Mold Compound	G600	G700

Reliability Data Summary:

QV DEVICE NAME : NLA9306DTR2G
RMS : 094149
PACKAGE : TSSOP8

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

Electrical Characteristics Summary:

Maximum Ratings

EXISTING

Symbol	Parameter	Value	Unit
V _{ref(1)}	Reference Voltage (Note 2)	-0.5 to +7.0	V
V _{base(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

Symbol	Parameter	Value	Unit
V _{ref(1)}	Reference Voltage (Note 2)	-0.5 to +7.0	V
V _{base(ref(2))}	Reference Bias Voltage (Note 3)	-0.5 to +7.0	V
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I _{CH}	DC Channel Current	128	mA
I _{IK}	DC Input Diode Current V _{IN} < GND	-50	mA
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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

Symbol	Parameter	Conditions	T _A = -55°C to +125°C			Unit
			Min	Typ (Note 8)	Max	
V _{IK}	Input Clamping Voltage	I _I = -18 mA; V _{ISEN} = 0 V			-1.2	V
I _{II}	High-Level Input Current	V _I = 5 V; V _{ISEN} = 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 _{ISEN} = 0 V		4	6	pF
C _{I(OFF)}	ON-State I/O Pin Capacitance SCLn, SDAn	V _O = 3 V or 0 V; V _{ISEN} = 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 _{ISEN} = 4.5 V V _{ISEN} = 3 V V _{ISEN} = 2.3 V V _{ISEN} = 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 _{ISEN} = 4.5 V V _{ISEN} = 3 V		4.4 4.6	7.5 8.0	Ω
		V _I = 1.7 V; I _O = 15 mA V _{ISEN} = 2.3 V		40	80	Ω

NEW

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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 _{ISEN} = 0 V		4	6	pF
C _{I(OFF)}	ON-State I/O Pin Capacitance SCLn, SDAn	V _O = 3 V or 0 V; V _{ISEN} = 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 _{ISEN} = 4.5 V V _{ISEN} = 3 V V _{ISEN} = 2.3 V V _{ISEN} = 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 _{ISEN} = 4.5 V V _{ISEN} = 3 V		4.8 4.6	7.5 8.0	Ω
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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
PCA9306DTR2G	NLA9306DTR2G	NLA9306DTR2G