



Initial Product/Process Change Notification

Document #: IPCN25380X

Issue Date: 17 May 2023

Title of Change:	Qualification of Minigates Vanguard die in MicroPak and MicroPak 2 Package
Proposed First Ship date:	01 Feb 2024 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.
Type of Notification:	This is an Initial Product/Process Change Notification (IPCN) sent to customers. An IPCN is an advance notification about an upcoming change and contains general information regarding the change details and devices affected. It also contains the preliminary reliability qualification plan. The completed qualification and characterization data will be included in the Final Product/Process Change Notification (FPCN). This IPCN notification will be followed by a Final Product/Process Change Notification (FPCN) at least 90 days prior to implementation of the change. In case of questions, contact < PCN.Support@onsemi.com >
Marking of Parts/ Traceability of Change:	Custom source on label will show TW instead of US or JP to indicate new die source from Vanguard.
Change Category:	Test Change, Assembly Change, Wafer Fab Change
Change Sub-Category(s):	Manufacturing Site Transfer

Sites Affected:

onsemi Sites	External Foundry/Subcon Sites
None	STARS Microelectronics, Thailand
	Vanguard International Semiconductor, Taiwan

Description and Purpose:

This Initial Notification announces that onsemi is qualifying Vanguard wafer fabrication for MicroPak and MicroPak 2 packages.

Table below applies to all orderable parts except NC7SPU04L6X, NC7SP08L6X and NC7SV08FHX:

	Before Change Description	After Change Description
Die Source	TPSCO	Vanguard

There is no product marking change as a result of this change.



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For NC7SPU04L6X:

Material to be changed	Before Change (Existing flow)	After Change (New flow)
# Assy Site	Subcon Thailand (HANA)	Subcon Thailand (STARS)
Wire	Au	PCC
Lead frame	PS LGAB 6L LOGIC KINSUS 1X1.45X.13	LF MicroPak 6L 1.45x1.0 PPF+RT UPG COL
Mold Compound	MC NITTO GE100LFCG 14MMX4.6G	MC SUMITOMO EME G700LTD
Die Attach	DA FILM LI LE5003 P8AS 100ST	Die Attach Film, HR-5104 Non Cond
Die Source	On South Portland	Vanguard

For NC7SP08L6X:

Material to be changed	Before Change (Existing flow)		After Change (New flow)
# Assy Site	Subcon Thailand (HANA)	Subcon Thailand (UTAC)	Subcon Thailand (STARS)
Wire	Au	Au	PCC
Lead frame	LF UDFN 6L C7025 Cu COL 1.45X1.0 ETCHED UPPF	LF UDFN 6L C7025 1.45X1MM ETCHED PPF	LF MicroPak 6L 1.45x1.0 PPF+RT UPG COL
Mold Compound	MC CEL9220HF13H HF	SUMITOMO G770HCD	MC SUMITOMO EME G700LTD
Die Attach	DA EPOXY HE ABLEBOND 8006NS 10CC 14G NON CON	DA AB 8006NS 10CC	Die Attach Film, HR-5104 Non Cond
Die Source	On South Portland	On South Portland	Vanguard

For NC7SV08FHX:

Material to be changed	Before Change (Existing flow)		After Change (New flow)
# Assy Site	Subcon Thailand (HANA)	Subcon Thailand(UTAC)	Subcon Thailand (STARS)
Wire	Au	Au	PCC
Lead frame	LF UDFN 6L A194 COL 1.0X1.0 ETCHED PPF	LF UDFN 6L C7025 Cu 1X1MM ETCHED PPF	LF MicroPak2 6L 1x1 PPF+RT UPG CO
Mold Compound	MC CEL9220HF13H HF	SUMITOMO G770HCD	MC SUMITOMO EME G700LTD
Die Attach	DA EPOXY HE ABLEBOND 8006NS 10CC 14G NON CON	DA AB 8006NS 10CC	Die Attach Film, HR-5104 Non Cond
Die Source	On South Portland	On South Portland	Vanguard

Marking Change for NC7SPU04L6X, NC7SP08L6X and NC7SV08FHX:

	From	To
Product marking change	<p>Existing Plant Code is H and G</p>	<p>New Plant Code is S</p>

Qualification Plan:

QV DEVICE NAME: NC7SZ14L6X
 RMS: 87728
 PACKAGE: MicroPak 6L (SIP6)

Test	Specification	Condition	Interval
High Temperature Operating Life	JESD22-A108	Ta=125°C, max rated Vcc	1008 hours
High Temperature Storage Life	JESD22-A103	Ta= 150°C	1008 hours
Preconditioning	J-STD-020 JESD-A113	MSL 1 @ 260°C	-
Temperature Cycling	JESD22-A104	Ta= -65°C to +150°C	500 cycles
Highly Accelerated Stress Test	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hours
Unbiased Highly Accelerated Stress Test	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hours



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QV DEVICE NAME: NC7WZ14FHX
RMS: 87726
PACKAGE: MicroPak2 6L (UDFN-6)

Test	Specification	Condition	Interval
High Temperature Operating Life	JESD22-A108	Ta=125°C, max rated Vcc	1008 hours
High Temperature Storage Life	JESD22-A103	Ta= 150°C	1008 hours
Preconditioning	J-STD-020 JESD-A113	MSL 1 @ 260°C	-
Temperature Cycling	JESD22-A104	Ta= -65°C to +150°C	500 cycles
Highly Accelerated Stress Test	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hours
Unbiased Highly Accelerated Stress Test	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hours

QV DEVICE NAME: NC7SPU04L6X
RMS: 88230
PACKAGE: MicroPak 6L (SIP6)

Test	Specification	Condition	Interval
High Temperature Operating Life	JESD22-A108	Ta=125°C, max rated Vcc	1008 hours
High Temperature Storage Life	JESD22-A103	Ta= 150°C	1008 hours
Preconditioning	J-STD-020 JESD-A113	MSL 1 @ 260°C	-
Temperature Cycling	JESD22-A104	Ta= -65°C to +150°C	500 cycles
Highly Accelerated Stress Test	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hours
Unbiased Highly Accelerated Stress Test	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hours

QV DEVICE NAME: NC7SV08FHX
RMS: 90908
PACKAGE: MicroPak2 6L (UDFN-6)

Test	Specification	Condition	Interval
High Temperature Operating Life	JESD22-A108	Ta=125°C, max rated Vcc	1008 hours
High Temperature Storage Life	JESD22-A103	Ta= 150°C	1008 hours
Preconditioning	J-STD-020 JESD-A113	MSL 1 @ 260°C	-
Temperature Cycling	JESD22-A104	Ta= -65°C to +150°C	500 cycles
Highly Accelerated Stress Test	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hours
Unbiased Highly Accelerated Stress Test	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hours

Estimated date for qualification completion: 12 Dec 2023



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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](#).

Part Number	Qualification Vehicle
NC7SZ05FHX	NC7WZ14FHX, NC7SZ14L6X
NC7ST02L6X	NC7WZ14FHX, NC7SZ14L6X
NC7ST00L6X	NC7WZ14FHX, NC7SZ14L6X
NC7S86L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ05L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ18L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ19FHX	NC7WZ14FHX, NC7SZ14L6X
NC7SZ86FHX	NC7WZ14FHX, NC7SZ14L6X
NC7S02L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SP08L6X	NC7SPU04L6X, NC7SV08FHX
NC7SP14L6X	NC7SPU04L6X, NC7SV08FHX
NC7SPU04L6X	NC7SPU04L6X, NC7SV08FHX
NC7SZ32FHX	NC7WZ14FHX, NC7SZ14L6X
NC7SZ19L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SV08FHX	NC7SPU04L6X, NC7SV08FHX
NC7SV125L6X	NC7SPU04L6X, NC7SV08FHX
NC7SV157L6X	NC7SPU04L6X, NC7SV08FHX
NC7SV34L6X	NC7SPU04L6X, NC7SV08FHX
NC7ST08L6X	NC7WZ14FHX, NC7SZ14L6X
NC7S14L6X	NC7WZ14FHX, NC7SZ14L6X
NC7WZ04FHX	NC7WZ14FHX, NC7SZ14L6X
SC7SZU04FHX	NC7WZ14FHX, NC7SZ14L6X
NC7S00L6X	NC7WZ14FHX, NC7SZ14L6X
NC7S32L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ38L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ126FHX	NC7WZ14FHX, NC7SZ14L6X
NC7SZU04L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ02L6X	NC7WZ14FHX, NC7SZ14L6X
NC7WV17L6X	NC7SPU04L6X, NC7SV08FHX



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NC7SZ00FHX	NC7WZ14FHX, NC7SZ14L6X
NC7WZ14FHX	NC7WZ14FHX, NC7SZ14L6X
NC7SZ58FHX	NC7WZ14FHX, NC7SZ14L6X
NC7SZ57FHX	NC7WZ14FHX, NC7SZ14L6X
NC7SZ157L6X	NC7WZ14FHX, NC7SZ14L6X
NC7S04L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ175L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ32L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ14FHX	NC7WZ14FHX, NC7SZ14L6X
NC7SZ86L6X	NC7WZ14FHX, NC7SZ14L6X
NC7S08L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ18FHX	NC7WZ14FHX, NC7SZ14L6X
NC7SZ04FHX	NC7WZ14FHX, NC7SZ14L6X
NC7SZ08L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ57L6X	NC7WZ14FHX, NC7SZ14L6X
NC7WZ04L6X	NC7WZ14FHX, NC7SZ14L6X
NC7WZ07FHX	NC7WZ14FHX, NC7SZ14L6X
NC7SZ332L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ126L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ14L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ58L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ11L6X	NC7WZ14FHX, NC7SZ14L6X
NC7WZ17FHX	NC7WZ14FHX, NC7SZ14L6X
NC7SZ125FHX	NC7WZ14FHX, NC7SZ14L6X
NC7WZ16FHX	NC7WZ14FHX, NC7SZ14L6X
NC7SZ08FHX	NC7WZ14FHX, NC7SZ14L6X
NC7WZU04L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ02FHX	NC7WZ14FHX, NC7SZ14L6X
NC7SZU04FHX	NC7WZ14FHX, NC7SZ14L6X
NC7ST32L6X	NC7WZ14FHX, NC7SZ14L6X
NC7ST86L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SU04L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ38FHX	NC7WZ14FHX, NC7SZ14L6X
NC7WZ16L6X	NC7WZ14FHX, NC7SZ14L6X



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NC7SZ04L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ00L6X	NC7WZ14FHX, NC7SZ14L6X
NC7WZ07L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ157FHX	NC7WZ14FHX, NC7SZ14L6X
NC7WZ14L6X	NC7WZ14FHX, NC7SZ14L6X
NC7SZ125L6X	NC7WZ14FHX, NC7SZ14L6X
NC7WZ17L6X	NC7WZ14FHX, NC7SZ14L6X