Final Product/Process Change Notification

Document #:FPCN25591X
Issue Date:15 Apr 2024

Title of Change:	Additional wafer fabrication sites for the Eco SWITCH family of products using ONC25HV technology for the controller die at onsemi Aizu facility and using T6 technology for the FET die at onsemi East Fishkill facility.
Proposed First Ship date:	22 Jul 2024 or earlier if approved by customer
Contact Information:	Contact your local onsemi Sales Office or Eric.Andrade@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 Jim.Workman@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:	Changed material may be identified by date code.
Change Category:	Wafer Fab Change
Change Sub-Category(s):	Datasheet/Product Doc change, Manufacturing Site Addition

Sites Affected:

onsemi Sites	**External Foundry/Subcon Sites**
onsemi Aizu, Japan	None
onsemi East Fishkill, New York, United States	

Description and Purpose:

This FPCN is to announce the qualification completion of additional wafer fabrication sites for the Eco SWITCH family of products. Eco SWITCH products contain 2 distinct parts namely, a controller and a FET. The controller which utilizes onsemi ONC25HV technology is being qualified at onsemi Aizu located in Aizu, Japan as an additional site. The FET which utilizes onsemi Trench 6 technology is being qualified at onsemi East Fishkill facility located in East Fishkill, US as an additional site for the FET die.

The Probe and Backgrind process for the East Fishkill T6 FET will be done at East Fishkill, US.

	From	To
Fab Site – Controller die	onsemi Gresham, US	onsemi Gresham, US or onsemi Aizu, Japan
Fab Site – FET die	onsemi Aizu, Japan	onsemi Aizu, Japan or onsemi East Fishkill, US
Wafer Size – FET die	200mm at onsemi Aizu, Japan	200mm at onsemi Aizu, Japan or 300mm at onsemi East Fishkill, US
Probe Site – FET die	200mm at onsemi Seremban, Malaysia	200mm at onsemi Seremban, Malaysia or 300mm at onsemi East Fishkill, US
Backgrind Site – FET die	200mm at onsemi ISMF, Malaysia	200mm at onsemi ISMF, Malaysia or 300mm at onsemi East Fishkill, US

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

Reliability Data Summary:

QV DEVICE NAME: NCP45790IMN24RTWG, NCP45770IMN24TWG (FET only)
RMS: O91749, O91750 (FET only)
PACKAGE: DFN14 4x4

Test	Specification	Condition	Interval	Results
Intermittent Operating Life (FET only)	MIL-STD-750 mtd 1037	Ta=+25°C, delta Tj=100°C max, 3.5min = Ton = Toff	15,000 cyc	0/135
High Temperature Gate Bias (FET only)	JESD22-A108	Tj=150°C (Max rate for FET), bias = 100% of rated V	1008 hrs	0/231
High Temperature Reverse Bias (FET only)	JESD22-A108	Tj=150°C (Max rate for FET), bias = 100% of rated V	1008 hrs	0/231
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
Moisture Preconditioning	J-STD-020 JESD-A113	MSL3 @ 260°C	-	0/1232
Temperature Cycling	JESD22-A104	-65°C to +150°C	500 cyc	0/231
Highly Accelerated Stress Test	JESD22-A110	110°C, 85% RH, 17.7psig, bias	264 hrs	0/231
Unbiased Highly Accelerated Stress Test	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs	0/231
Electrostatic Discharge Human Body Model	JS-001	Test up to 3kV 3 parts per V-step	500 V	0/3
			1000 V	0/3
			1500 V	0/3
			2000 V	0/3
			2500 V	0/3
			3000 V	0/3
Electrostatic Discharge Charged Device Model	JS-002	Test up to 750V 3 parts per V-step	125 V	0/3
			250 V	0/3
			500 V	0/3
			750 V	0/3
Latch Up	JESD78 Class II	Tj max, +/- 100mA, 1.5x VDD	-	0/6
Scanning Acoustic Analysis	J-STD-020	Compare pre/post PC devices	-	0/88
Bond Pull Strength	MIL-STD883 mtd 2011	Min Cpk 1.33	-	0/30

Electrical Characteristics Summary:

Affected parts will have datasheet updates to the following:

	From	To
Over-Current Protection Trip (R_{OCP}=open),I_{TRIP}	MAX (refer to datasheet per OPN)	MAX + 200mA
Power Good Turn-On Time (All conditions), $T_{PG,ON}$	MAX (refer to datasheet per OPN)	MAX + 1.5ms

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
NCP45750IMN24TWG	NCP45790IMN24RTWG
NCP45760IMN24RTWG	NCP45790IMN24RTWG
NCP45770IMN24TWG	NCP45790IMN24RTWG
NCP45780IMN24RTWG	NCP45790IMN24RTWG
NCP45790IMN24RTWG	NCP45790IMN24RTWG

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Appendix A: Changed Products

PCN#: FPCN25591X
Issue Date: Apr 14, 2024

DIKG: DIGI-KEY

Product	Customer Part Number	Qualification Vehicle	New Part Number	Replacement Supplier
NCP45750IMN24TWG		NCP45790IMN24RTWG	#NONE	
NCP45770IMN24TWG		NCP45790IMN24RTWG	#NONE	
NCP45780IMN24RTWG		NCP45790IMN24RTWG	#NONE	
NCP45790IMN24RTWG		NCP45790IMN24RTWG	#NONE	
NCP45760IMN24RTWG		NCP45790IMN24RTWG	#NONE	