Final Product/Process Change Notification

Document #:FPCN24911XC
Issue Date: 03 Aug 2023

Title of Change:	Qualify JCET/ISMF as alternative site for process of Bump and Silicon etch for x4DFN products.
Proposed First Ship date:	10 Nov 2023 or earlier if approved by customer
Contact Information:	Contact your local onsemi Sales Office or Lan.Vu@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 Nicky.Siu@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:	No change in device marking. Affected parts can be identified by the date code or lot code.
Change Category:	Assembly Change
Change Sub-Category(s):	Manufacturing Site Addition

Sites Affected:

onsemi Sites	**External Foundry/Subcon Sites**
onsemi, ISMF Malaysia	JCET, China

Description and Purpose:

This Final Product Change Notification (FPCN) is to announce the qualification of JCET (China) and ISMF (Malaysia) for bumping and Silicon-etching process of devices in X4DFN package (molded- WLCSP).

Upon expiration of this FPCN, new manufacturing flow of JCET/ISMF will be utilized as an alternative flow to produce X4DFN products.

There are no product marking changes as a result of this change.

	From	**To**	
Bumping/Silicon etching	Niigata/Niigata	Niigata/Niigata	JCET/ISMF
Bump/Pillar Structure	CuSnAg	No change	CuSnAg
Polymer Material, Thickness	WPR5100, 10um	No change	HD4100, 10um
Bump/Pillar Height	15um	No change	15um
UBM Material, Thickness, Diameter	TiCu 1750/3500	No change	TiCu 1000/4000

Reliability Data Summary:

QV DEVICE NAME : ESDL3552BPFCT5G
RMS : S87362, S90392
PACKAGE : X4DFN-3, 0.62x0.32mm, 0.225P

Test	Specification	Condition	Interval	Results
High Temperature Reverse Bias	JESD22-A108	Ta = 150°C, 100% max rated V	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 IOL, TC, uHAST, HAST for surface mount pkgs only		0/693
Temperature Cycling	JESD22-A104	Ta = -40°C to +125°C	1700 cycs	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
Physical Dimensions	JESD22-B120			0/30

QV DEVICE NAME : ESDL4151MX4T5G
RMS : S87366
PACKAGE : X3DFN-2, 1.0x0.6mm, 0.65P

Test	Specification	Condition	Interval	Results
High Temperature Reverse Bias	JESD22-A108	Ta = 150°C, 100% max rated V	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 IOL, TC, uHAST, HAST for surface mount pkgs only		0/693
Temperature Cycling	JESD22-A104	Ta = -40°C to +125°C	1700 cycs	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
Physical Dimensions	JESD22-B120			0/30

Electrical Characteristics Summary:

Electrical characteristics are not impacted.

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
ESDL1012MX4T5G	ESDL3552BPFCT5G/ESDL4151MX4T5G
ESDM2032MX4T5G	ESDL3552BPFCT5G/ESDL4151MX4T5G
ESDM1121MX4T5G	ESDL3552BPFCT5G/ESDL4151MX4T5G
ESDM1051MX4T5G	ESDL3552BPFCT5G/ESDL4151MX4T5G
ESDL1531MX4T5G	ESDL3552BPFCT5G/ESDL4151MX4T5G

Appendix A: Changed Products

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DIKG: DIGI-KEY

Product	Customer Part Number	Qualification Vehicle	New Part Number	Replacement Supplier
ESDM2032MX4T5G		ESDL3552BPFCT5G/ESDL4151MX4T5G	NA	
ESDM1121MX4T5G		ESDL3552BPFCT5G/ESDL4151MX4T5G	NA	
ESDL1531MX4T5G		ESDL3552BPFCT5G/ESDL4151MX4T5G	NA	
ESDM1051MX4T5G		ESDL3552BPFCT5G/ESDL4151MX4T5G	NA	