PCN Number:	20200203004.1A	PCN Date:	Mar 19, 2020
Title:	Qualification of TI Clark as an Alternate Assembly Site for Select Package Devices		
Customer Contact:	PCN Manager	Dept:	Quality Services
Proposed 1st Ship Date:	May 19, 2020	Estimated Sample Availability:	Provided upon Request

Change Type:

☒	Assembly Site	☐	Design	☐	Wafer Bump Site
☐	Assembly Process	☐	Data Sheet	☐	Wafer Bump Material
☒	Assembly Materials	☐	Part number change	☐	Wafer Bump Process
☐	Mechanical Specification	☐	Test Site	☐	Wafer Fab Site
☐	Packing/Shipping/Labeling	☐	Test Process	☐	Wafer Fab Materials
				☐	Wafer Fab Process

PCN Details

Description of Change:

Revision A is to announce the addition of new devices that were not included on the original PCN notification. These new devices are under **Group 2** of the Product affected section below. The expected first shipment date for these new devices will be 90 days from this notice (June 13, 2020) for these newly added devices only. The proposed 1st ship date of May 18, 2020 still applies for the original set of devices.

Texas Instruments is pleased to announce the qualification of TI Clark as an Alternate Assembly site for select package devices. Material differences as follows:

Group 1 Device:

	UTAC	TI Chengdu	TI Clark
Mount Compound	PZ0035	4207123	4207123
Mold Compound	CZ0289	4222198	4222198
Lead finish	NiPdAuAg	NiPdAu	NiPdAu

Group 2 Device:

	UTAC	TI Clark
Mold Compound	CZ0351	4222198
Lead finish	Matte Sn	NiPdAu

Reason for Change:

Continuity of Supply

Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):

None

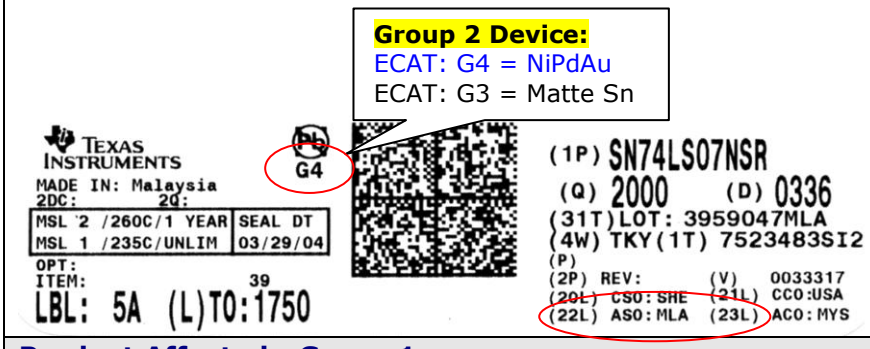
Anticipated impact on Material Declaration

☐	No Impact to the Material Declaration	☒	Material Declarations or Product Content reports are driven from production data and will be available following the production release. Upon production release the revised reports can be obtained at the site link below http://www.ti.com/quality/docs/materialcontentsearch.tsp

Changes to product identification resulting from this PCN:

Assembly Site		
UTAC	Assembly Site Origin (22L)	ASO: NSE
TI Chengdu	Assembly Site Origin (22L)	ASO: CDA
TI Clark	Assembly Site Origin (22L)	ASO: QAB

Sample product shipping label (not actual product label)



Product Affected : Group 1

FRE014RGZR	FRE014RHBR

Product Affected : Group 2

CSD59947QVM	CSD59987QVM	CSD95492QVMT	CSD95496QVM
CSD59957QVM	CSD59988QVM	CSD95495QVM	CSD95496QVMT
CSD59958QVM	CSD95492QVM	CSD95495QVMT	

Group 1: Qualification Data

Approved on 02/03/2020

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	Test Name / Condition	Duration	Qual Device: FRE014	QBS Package Reference: CC26X0RGZ	QBS Package Reference: 430FR5969IRGZR
HTSL	High Temp. Storage Bake, 150C	1000 Hours	-	3/231/0	3/229/0
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	3/231/0
TC	Temperature Cycle, -55/125C	700 Cycles	-	3/231/0	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/231/0
THB	Biased Temperature and Humidity, 85C/85%RH	1000 Hours	-	3/78/0	-
AC	Autoclave 121C	96 Hours	-	-	3/231/0
UHAST	Unbiased HAST, 110C/85%RH	264 Hours	-	3/231/0	-
WBP	Bond Pull	Wires	-	3/228/0	3/228/0
WBS	Ball Bond Shear	Wires	-	3/228/0	3/228/0

QBS: Qualification By Similarity

Qualification Device FRE014 is qualified at Moisture Sensitivity LEVEL3-260C.

Preconditioning was performed for Unbiased HAST, THB, Temperature Cycle, and HTSL.

Quality and Environmental data is available at TI's external Web site: http://www.ti.com/

The following are equivalent Temp Cycle options per JESD47 : -55C/125C/700 Cycles and -65C/150C/500 Cycles

Green/Pb-free Status:
Qualified Pb-Free(SMT) and Green

Group 2: Qualification Data

Approved on 02/27/2020

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	Test Name / Condition	Duration	Qual Device: CSD95495QVM	QBS Product Reference: CSD95495QVM	QBS Product Reference: CSD95495QVM	QBS Package Reference: CSD95480RWJ
AC	Autoclave 121C	96 Hours		3/231/0		-
ED	Electrical Characterization	Per Datasheet Parameters	Pass	-	Pass	Pass
HAST	Biased HAST, 110C/85%RH	264 Hours				3/231/0
HAST	Biased HAST, 130C/85%RH	96 Hours	3/231/0	3/231/0		-
HBM	ESD - HBM	2500 V		1/3/0	1/3/0	-
CDM	ESD - CDM	1500 V	1/3/0	1/3/0	1/3/0	-
HTOL	Life Test, 125C	1000 Hr				-
HTSL	High Temp Storage Bake 150C	1000 Hours		3/231/0		3/231/0
LU	Latch-up	Per JESD74		1/6/0	1/6/0	-
TC	Temperature Cycle, -55/125C	700 Cycles	3/231/0	3/231/0		3/231/0
UHAST	Unbiased HAST, 130C/85%RH	96 Hours	3/231/0			3/231/0

- QBS: Qual By Similarity
- Qual Device CSD95495QVM is qualified at LEVEL2-260C
- Device CSD95495QVM contains multiple dies.
- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable
- The following are equivalent HTOL options based on an activation energy of 0.7eV : 125C/1k Hours, 140C/480 Hours, 150C/300 Hours, and 155C/240 Hours
- The following are equivalent HTSL options based on an activation energy of 0.7eV : 150C/1k Hours, and 170C/420 Hours
- The following are equivalent Temp Cycle options per JESD47 : -55C/125C/700 Cycles and -65C/150C/500 Cycles

Quality and Environmental data is available at TI's external Web site: http://www.ti.com/

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