PCN Number:	20221216006.1	**PCN Date:**	December 21, 2022
Title:	Qualification of new Fab site (RFAB) using qualified Process Technology, Die Revision, and additional Assembly site/BOM options for select devices		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	Mar 21, 2023	**Sample Requests accepted until:**	Jan 21, 2023

***Sample requests received after January 21, 2023 will not be supported.**

Change Type:

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

PCN Details

Description of Change:

Texas Instruments is pleased to announce the qualification of a new fab & process technology (RFAB, LBC9) die revision, and Assembly site/BOM options for selected devices as listed below in the product affected section.

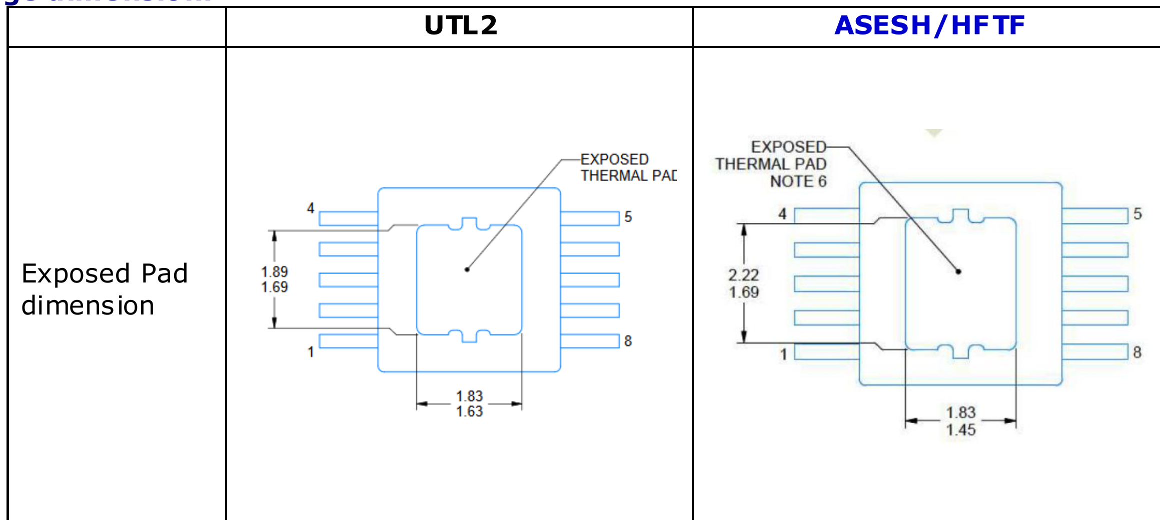
Current Fab Site			Additional Fab Site		
Current Fab Site	**Process**	**Wafer Diameter**	**Additional Fab Site**	**Process**	**Wafer Diameter**
DL-LIN	LBC4	200 mm	RFAB	LBC9	300 mm

The die was also changed as a result of the process change.

Construction differences between the Assembly sites are as follows:

	UTL2	ASESH	HFTF
Mount Compound	PZ0013	EY1000063	A-24
Mold Compound	CZ0094	EN2000515	R-32

Package dimension:

	UTL2	ASESH/HFTF
Exposed Pad dimension		

Qual details are provided in the Qual Data Section.

Reason for Change:

These changes are part of our multiyear plan to transition products from our 150-milimeter factories to newer, more efficient manufacturing processes and technologies, underscoring our commitment to product longevity and supply continuity.

Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):
None

Impact on Environmental Ratings

Checked boxes indicate the status of environmental ratings following implementation of this change. If below boxes are checked, there are no changes to the associated environmental ratings.

RoHS	REACH	Green Status	IEC 62474
☒ No Change	☒ No Change	☒ No Change	☒ No Change

Changes to product identification resulting from this PCN:

Fab Site Information:

Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
DL-LIN	DLN	USA	Dallas
RFAB	**RFB**	**USA**	**Richardson**

Die Rev:

Current	**New**
Die Rev [2P]	**Die Rev [2P]**
A	**A**

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
UTL2	NS2	THA	Bangpakong, Chachoengsao
ASESH	**ASH**	**CHN**	**Shanghai**
HFTF	**HFT**	**CHN**	**Hefei**

Sample product shipping label (not actual product label)

Product Affected:

TPS40210DGQ	TPS40210DGQR

For alternate parts with similar or improved performance, please visit the product page on [TI.com](TI.com)

Qualification Report

Approved 29-Nov-2022

Qualification Results

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

Type	#	Test Name	Test Name / Condition	Duration	Qual Device: TPS40210DGQR	QBS Product Reference: TPS40210QDGQRQ1	QBS Product Reference: TPS40210QDGQRQ1	QBS Process Reference: TLC6C5816QPWPRQ1	QBS Package Reference: TPS7B8250QDGNRQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	3/231/0	3/231/0	3/231/0
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	3/231/0	3/231/0	3/231/0	-
TC	A4	Temperature Cycle	-65/150C	500 Cycles	-	3/231/0	3/231/0	3/231/0	3/231/0
HTSL	A6	High Temp. Storage Bake	170C	420 Hours	-	3/135/0	3/135/0	3/231/0	3/135/0
HTOL	B1	Life Test	125C	1000 Hours	-	-	1/77/0	2/154/0	-
ELFR	B2	Early Life Failure Rate	150C	48 Hours	-	-	-	3/2400/0	-
SD	C3	Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB Solder;)	Pb	-	-	1/15/0	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-free Solder;)	Pb-Free	-	-	1/15/0	-	-
PD	C4	Physical Dimensions	(per mechanical drawing)	--	-	-	3/30/0	-	3/30/0
HBM	E2	ESD - HBM	-	3000 V	-	-	1/3/0	1/3/0	1/3/0
CDM	E3	ESD - CDM	-	1000 V	-	-	1/3/0	1/3/0	1/3/0
LU	E4	Latch-up	Per JESD78	-	-	-	1/6/0	1/6/0	1/6/0
CHAR	E5	Electrical characterization	Per Datasheet Parameter	-	-	-	3/90/0	3/90/0	3/90/0

- 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/

Green/Pb-free Status:

Qualified Pb-Free (SMT) and Green TI

Qualification Report

Approved 29-Nov-2022

Qualification Results

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

Type	#	Test Name	Test Name / Condition	Duration	Qual Device: TPS40210DGQR	QBS Product Reference: TPS40210QDGQRQ1	QBS Product Reference: TPS40210QDGQRQ1	QBS Process Reference: TLC6C5816QPWPRQ1	QBS Package Reference: TCA39306DCURQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	3/231/0	3/231/0	3/231/0
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	3/231/0	3/231/0	3/231/0	-
TC	A4	Temperature Cycle	-65/150C	500 Cycles	-	3/231/0	3/231/0	3/231/0	3/231/0
HTSL	A6	High Temp. Storage Bake	170C	420 Hours	-	-	3/135/0	3/231/0	3/135/0
HTOL	B1	Life Test	125C	1000 Hours	-	-	1/77/0	2/154/0	-
ELFR	B2	Early Life Failure Rate	150C	48 Hours	-	-	-	3/2400/0	-
SD	C3	Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB Solder;)	Pb	-	-	1/15/0	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-free Solder;)	Pb-Free	-	-	1/15/0	-	-
PD	C4	Physical Dimensions	(per mechanical drawing)	--	-	-	3/30/0	-	3/30/0
HBM	E2	ESD - HBM	-	3000 V	-	-	1/3/0	1/3/0	1/3/0
CDM	E3	ESD - CDM	-	1000 V	-	-	1/3/0	1/3/0	1/3/0
LU	E4	Latch-up	Per JESD78	-	-	-	1/6/0	1/6/0	1/6/0
CHAR	E5	Electrical characterization	Per Datasheet Parameter	-	-	-	3/90/0	3/90/0	3/90/0

- 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
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- 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/

Green/Pb-free Status:

Qualified Pb-Free (SMT) and Green TI

For questions regarding this notice, e-mails can be sent to the contacts shown below or your local Field Sales Representative.

Location	**E-Mail**
WW Change Management Team	PCN_ww_admin_team@list.ti.com

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