

<b>PCN Number:</b>	20231128000.1A	<b>PCN Date:</b>	December 07, 2023
<b>Title:</b>	Qualification of RFAB as an additional Fab site option and Assembly Site (HFTF) and BOM options for select devices		
<b>Customer Contact:</b>	Change Management Team	<b>Dept:</b>	Quality Services
<b>Proposed 1<sup>st</sup> Ship Date:</b>	Feb 27, 2024	<b>Sample requests accepted until:</b>	Jan 08, 2024 for rev A devices*

**\*Sample requests received after Jan 08, 2024 will not be supported.**

Change Type:					
<input checked="" type="checkbox"/>	Assembly Site	<input checked="" type="checkbox"/>	Design	<input type="checkbox"/>	Wafer Bump Material
<input checked="" type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet	<input type="checkbox"/>	Wafer Bump Process
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change	<input checked="" type="checkbox"/>	Wafer Fab Site
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Test Site	<input checked="" type="checkbox"/>	Wafer Fab Material
<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<input checked="" type="checkbox"/>	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 highlighted and **bolded** in the device list below. The expected first shipment date for these new devices will be 90 days (Mar 08, 2024) from this notice for these newly added devices only.

Texas Instruments is pleased to announce the qualification of its RFAB fabrication facility as an additional Wafer Fab option in addition to Assembly site (HFTF) and BOM options for the devices listed below.

Current Fab Site			Additional Fab site		
Current Fab Site	Process	Wafer Diameter	Additional Fab site	Process	Wafer Diameter
FR-BIP-1	ASLC10	200mm	RFAB	LBC7	300mm

The die was also changed as a result of the process change to accommodate the change in Assembly technology

Construction differences are as follows:

#### Group 1 Device:

	HIT	HNA	HNA (new)	HFTF
Bond wire composition, diameter	Au, 1.0 mil	Au, 1.0 mil	Cu, 0.8 mil	Cu, 0.8 mil
Mount Compound	RZ241C	400728	400180	A-18
Mold Compound	G600K	450420	450596	R-30
Lead finish	NiPdAu	NiPdAu	NiPdAu	Matte Sn

#### Group 2 Device:

	HIT	HNA	HFTF
Bond wire composition, diameter	Au, 0.8 mil	Au, 0.8 mil	Cu, 0.8 mil
Mount Compound	RZ241C	400180	A-18
Mold Compound	RM500F	450207	R-31

Lead finish	Matte Sn	NiPdAu	Matte Sn
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**Reason for Change:**

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.

<b>RoHS</b>	<b>REACH</b>	<b>Green Status</b>	<b>IEC 62474</b>
<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> 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
FR-BIP-1	TID	DEU	Freising
<b>RFAB</b>	<b>RFB</b>	<b>USA</b>	<b>Richardson</b>


**Die Rev:**

<b>Current</b>	<b>New</b>
Die Rev [2P]	Die Rev [2P]
-	A

**Assembly Site Information:**

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
HNA	HNT	THA	Ayutthaya
HIT	HTC	JPN	Kitatsugaru, Aomori
<b>HFTF</b>	<b>HFT</b>	<b>CHN</b>	<b>Hefei</b>

Sample product shipping label (not actual product label):




TEXAS INSTRUMENTS  
MADE IN: Malaysia  
2DC: 20:

MSL 2 / 260C / 1 YEAR	SEAL DT
MSL 1 / 235C / UNLIM	03/29/04

OPT:  
ITEM: 39  
LBL: 5A (L)T0:1750

G4



(1P) SN74LS07NSR  
(Q) 2000 (D) 0336  
(31T) LOT: 3959047MLA  
(4W) TKY (1T) 7523483SI2  
(P)  
(2P) REV: (V) 0033317  
(20L) CSO: SHE (21L) CCO: USA  
(22L) ASO: MLA (23L) ACO: MYS

**Group 1 Product Affected: Fab site, Assembly site, BOM update**

TXS0102DCTR	<b>TXS0102DCTT</b>
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**Group 2 Product Affected: Fab site, Assembly site**

TXS0102DCUR	<b>TXS0102DCUT</b>
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# Group 1 Qualification Report

Approve Date 30-SEPTEMBER-2023

## Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: <u>TXS0102DCTR</u>	QBS Reference: <u>SN3257QDYRQ1</u>	QBS Reference: <u>OPA2991QDGKRO1</u>	QBS Reference: <u>TXS0102DCTR</u>	QBS Reference: <u>TXS0102DCUR</u>
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	3/231/2	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	3/231/0	3/231/0	1/77/0	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	0/0/0	0/0/0	0/0/0	1/77/0	1/77/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	3/135/0	-	1/77/0	-
HTSL	A6	High Temperature Storage Life	175C	630 Hours	-	-	3/135/0	-	-
HTOL	B1	Life Test	150C	300 Hours	-	3/231/0	-	-	-
HTOL	B1	Life Test	150C	408 Hours	-	-	3/231/1 <sup>1</sup>	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	3/2400/4 <sup>2</sup>	-	-
ELFR	B2	Early Life Failure Rate	150C	24 Hours	-	3/2400/0	-	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	1/15/0	1/15/0	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	1/15/0	1/15/0	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	1/22/0	-	-	-	1/22/0
PD	C4	Physical Dimensions	Cpk>1.67	-	-	3/30/0	3/30/0	-	-
ESD	E2	ESD CDM	-	1500 Volts	-	1/3/0	-	-	-
ESD	E2	ESD CDM	-	250 Volts	-	-	-	-	1/3/0
ESD	E2	ESD HBM	-	1000 Volts	-	-	-	-	1/3/0
ESD	E2	ESD HBM	-	2000 Volts	-	1/3/0	1/3/0	-	-
LU	E4	Latch-Up	Per JESD78	-	-	1/6/0	1/6/0	-	1/3/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	-	-	1/30/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	3/90/0	3/90/0	-	-

QBS: Qual By Similarity

Qual Device TXS0102DCTR is qualified at MSL1 260C

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/>

## Group 2 Qualification Report

Approve Date 30-September-2023

### Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: TXS0102DCUR	QBS Reference: TPS2543QRTETQ1	QBS Reference: TCA39306DCUR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	1/77/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	1/77/0
UHAST	A3	Autoclave	130C/85%RH	96 Hours	-	3/231/0	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	1/77/0	3/231/0	1/77/0
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	1/77/0
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	3/135/0	-
HTOL	B1	Life Test	125C	1000 Hours	-	3/231/0	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	3/2400/0	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	1/15/0	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	1/22/0	-	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	3/30/0	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	1/3/0
ESD	E2	ESD CDM	-	500 Volts	-	1/3/0	-
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	-	1/3/0
ESD	E2	ESD HBM	-	2000 Volts	-	1/3/0	-
LU	E4	Latch-Up	Per JESD78	-	1/3/0	1/6/0	1/3/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	1/30/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	3/90/0	-

QBS: Qual By Similarity

Qual Device TXS0102DCUR is qualified at MSL1 260C

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/>

For questions regarding this notice, e-mails can be sent to the Change Management team or your local Field Sales Representative.

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