PCN Number:	20231031006.1	**PCN Date:**	October 31, 2023
Title:	Qualification of RFAB using qualified Process Technology, Die Revision, Datasheet and additional Assembly site/BOM options for select devices		
Customer Contact:	Change Management Team	**Dept:**	Quality Services
Proposed 1st Ship Date:	Jan 31, 2024	**Sample requests accepted until:**	Dec 1, 2023*

***Sample requests received after December 1, 2023 will not be supported.**

Change Type:

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

PCN Details

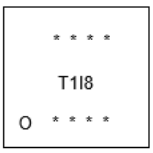
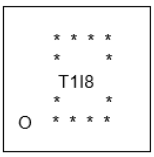
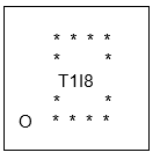
Description of Change:

Texas Instruments is pleased to announce the addition of RFAB using the TIB qualified process technology and additional Assembly site (CDAT) and BOM options for select devices 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**
CFAB	JI3	200 mm	RFAB	TIB	300 mm

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

Construction differences are as follows **(C2305209)**:

	TIPI	TIPI (new)	CDAT
Lead finish	NiPdAu	NiPdAu	Matte Sn
Marking differences			

Qual details are provided in the Qual Data Section.

Reason for Change:

Continuity of supply

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
CFAB	CU3	CHN	Chengdu
RFAB	**RFB**	**USA**	**Richardson**

Die Rev:

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

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
TI Philippines	PHI	PHL	Baguio City
TI Chengdu	**CDA**	**CHN**	**Chengdu**

Sample product shipping label (not actual product label)

Product Affected:

TL331IDBVR	TL331IDBVT	TL331KDBVR	TL331KDBVT

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: TL331IDBVR	QBS Reference: LM2901BIPWR	QBS Reference: TLV1805QDBVRQ1	QBS Reference: LM324BIPWR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	3/231/0	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	3/231/0	-
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	-	3/135/0	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	3/231/0
HTOL	B1	Life Test	150C	300 Hours	-	1/77/0	-	-
SD	C3	PB 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)	-	-	-	1/15/0	-
ESD	E2	ESD CDM	-	750 Volts	1/3/0	-	-	-
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	-	-	-
LU	E4	Latch-Up	Per JESD78	-	1/3/0	-	-	-

Type	#	Test Name	Condition	Duration	Qual Device: TL331IDBVR	QBS Reference: LM2901BIPWR	QBS Reference: TLV1805QDBVRQ1	QBS Reference: LM324BIPWR
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30	-	-	-

- QBS: Qual By Similarity
- Qual Device TL331IDBVR 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/

TI Qualification ID: R-CHG-2301-059

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: TL331IDBVR	QBS Reference: LM324BIPWR	QBS Reference: TLV9061IDBVR	QBS Reference: LM2901BQPWRQ1	QBS Reference: TPS3840PH30DBVRQ1	QBS Reference: TL331IDBVR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	-	3/231/0	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	3/231/0	-	3/231/0	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	3/231/0	-	3/231/0	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	-	3/135/0	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	3/231/0	-	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	3/231/0	-	-	3/231/0	-
HTOL	B1	Life Test	150C	300 Hours	-	-	-	1/77/0	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	-	-	-
ESD	E2	ESD CDM	-	750 Volts	1/3/0	-	-	-	-	-

ESD	E2	ESD HBM	-	1000 Volts	-	-	-	-	-	1/3/0
LU	E4	Latch-Up	Per JESD78	-	-	-	-	-	-	1/3/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	-	-	-	1/30/0

- QBS: Qual By Similarity
- Qual Device TL331IDBVR 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/

TI Qualification ID: R-CHG-2301-053

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