12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20241119007.1
Qualification of RFAB using qualified Process Technology, Die Revision, and additional Assembly Site/BOM options for select devices
Change Notification / Sample Request

Date: November 20, 2024
To: MOUSER PCN

Dear Customer:

This is an announcement of a change to a device that is currently offered by Texas Instruments (TI). The details of this change are on the following pages, and are in alignment with our standard product change notification (PCN) process.

TI requires acknowledgement of receipt of this notification within 30 days of the date of this notice. Lack of acknowledgement of this notice within 30 days constitutes acceptance and approval of this change. If samples or additional data are required, requests must be received within 30 days of this notification, given that samples are not built ahead of the change.

The Proposed First Ship date in this PCN letter is the earliest possible date that customers could receive the changed material. It is our commitment that the changed device will not ship before that date. If samples are requested within the 30 day sample request window, customers will still have 30-days to complete their evaluation regardless of the proposed 1st ship date.

Changes outlined in this notification underscore our commitment to product longevity and supply continuity, as well as our continued efforts to transition to newer, more efficient manufacturing processes and technologies. Specifically, this particular notification is related to TI's multiyear transition plan for our two remaining 150-millimeter production lines (DFAB in Dallas, Texas, and SFAB in Sherman, Texas). SFAB closure activities are expected to begin by the end of 2025. DFAB will remain open with a smaller set of 200mm technologies and GaN.

For questions regarding this notice or to provide acknowledgement of this PCN, you may contact your local Field Sales Representative or the Change Management team. For sample requests or sample related questions, contact your local Field Sales Representative. As always, we thank you for your continued business.

Change Management Team
SC Business Services

20241119007.1
Attachment: 1

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, you have recently purchased these devices. The corresponding customer part number is also listed, if available.

DEVICE	CUSTOMER PART NUMBER
TL431BIDCKR	TL431BIDCKR
TLVH431BCDCKT	NULL
TLVH431QDCKR	NULL
TLV431BCDCKR	NULL
TL431BCDCKR	TL431BCDCKR
TLV431BIDCKR	NULL
TL431QDCKT	TL431QDCKT
TL431QDCKR	TL431QDCKR
TLVH431BQDCKR	NULL
TLV431BIDCKT	NULL
TL431AQDCKR	TL431AQDCKR
TLV431BQDCKT	NULL
TLVH431AQDCKR	NULL
TL431BQDCKR	TL431BQDCKR
TLVH431AIDCKR	NULL
TL431BQDCKT	TL431BQDCKT
TLV431BQDCKR	TLV431BQDCKR
TLVH431BIDCKR	NULL
TLVH431AIDCKT	TLVH431AIDCKT
TL431AIDCKT	TL431AIDCKT
TL431AIDCKR	TL431AIDCKR
TL431ACDCKR	TL431ACDCKR
TLVH431BQDCKT	595-TLVH431BQDCKT

Technical details of this Product Change follow on the next page(s).

zPCN Number:	20241119007.1	PCN Date:	November 20, 2024
Title:	Qualification of RFAB using qualified Process Technology, Die Revision and additional Assembly Site/BOM options for select devices		
Customer Contact:	Change Management Team	Dept:	Quality Services
Proposed 1st Ship Date:	February 18, 2025	Sample requests accepted until:	December 20, 2024*

***Sample requests received after December 20, 2024 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 qualification of its RFAB fabrication facility as an additional Wafer Fab option in addition to Assembly site/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**
SFAB	JI1	150 mm	RFAB	TIB	300 mm
SFAB	JI2	150 mm			

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

Construction differences are as follows:

	UTL2	**CDAT**
Lead Finish	NiPdAu	Matte Sn
Mount Compound	SID#PZ0037	4207123
Mold Compound	SID#CZ0096	4222198
Device marking - Pin 1 ID	Stripe	Dot
Bond Wire composition/diameter	Au, 1.0 mil	Cu, 0.8 mil

Upon expiry of this PCN, TI will combine lead finish solutions in a single standard part number. For example, a customer order for 7500 units of a specific TI part number with 2500 units SPQ (Standard Pack Quantity per reel) may be fulfilled in the following ways:

- 3 reels of NiPdAu finish.
- 3 reels of Matte Sn finish
- 2 reels of Matte Sn and 1 reel of NiPdAu finish
- 2 reels of NiPdAu and 1 reel of Matte Sn finish

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-millimeter 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
SH-BIP-1	SHE	USA	Sherman
RFAB	**RFB**	**USA**	**Richardson**

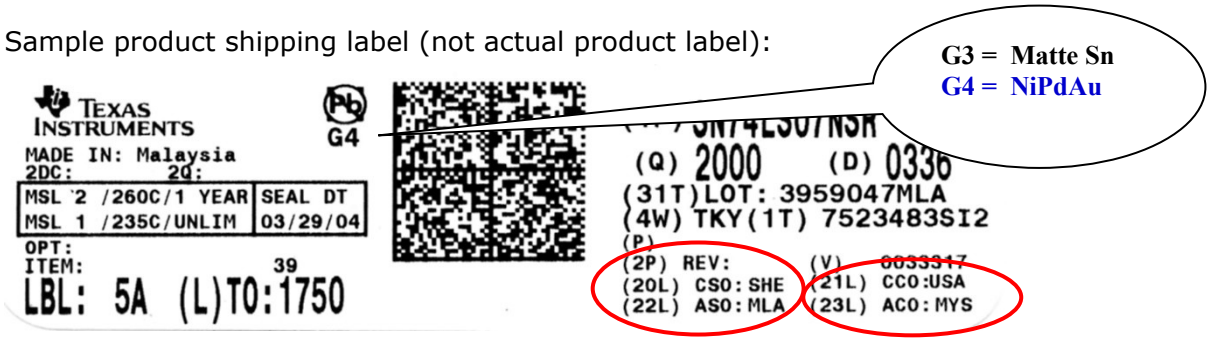
Die Rev:

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
UTL2	NS2	THA	Bangpakong, Chachoengsao
CDAT	**CDA**	**CHN**	**Chengdu**

Sample product shipping label (not actual product label):



Product Affected:

TL431ACDCKR	TL431BQDCKR	TLV431BQDCKT	TLVH431BIDCKR*
TL431AIDCKR*	TL431BQDCKT	TLVH431ACDCKR	TLVH431BIDCKT
TL431AIDCKT	TL431QDCKR	TLVH431ACDCKT	TLVH431BQDCKR*
TL431AQDCKR	TL431QDCKT	TLVH431AIDCKR	TLVH431BQDCKT
TL431AQDCKT	TLV431BCDCKR	TLVH431AIDCKT	TLVH431CDCKT
TL431BCDCKR	TLV431BCDCKT	TLVH431AQDCKR*	TLVH431IDCKR
TL431BCDCKT	TLV431BIDCKR*	TLVH431AQDCKT	TLVH431IDCKT
TL431BIDCKR	TLV431BIDCKT	TLVH431BCDCKR	TLVH431QDCKR*
TL431BIDCKT	TLV431BQDCKR	TLVH431BCDCKT	TLVH431QDCKT

*G4 part numbers are available and will remain on NiPdAu flows. This PCN does not apply to existing G4 materials. Please visit TI's labeling and symbolization page for more information on material designators.

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

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: TLVH431BQDCKR	Qual Device: TL431BQDCKR	QBS Reference: LM324BIPWR	QBS Reference: TPS3840PH30DBVRQ1	QBS Reference: TLVH432BQDBZR	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	-	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	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	-	-	3/231/0	3/135/0	-	-
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	-	-	3/2400/0	-	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	-	-

Type	#	Test Name	Condition	Duration	Qual Device: TLVH431BQDCKR	Qual Device: TL431BQDCKR	QBS Reference: LM324BIPWR	QBS Reference: TPS3840PH30DBVRQ1	QBS Reference: TLVH432BQDBZR	QBS Reference: TL331IDBVR
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	-	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	-	3/30/0	-	-
ESD	E2	ESD CDM	-	1000 Volts	1/3/0	1/3/0	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	-
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	-	-
CHAR	E5	Electrical Distributions	Per Datasheet Parameters	-	-	-	-	-	3/90/0	-
FTY	E6	Final Test Yield	-	-	-	-	-	-	1/1/0	-

- QBS: Qual By Similarity
- Qual Device TLVH431BQDCKR is qualified at MSL1 260C
- Qual Device TL431BQDCKR 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-2311-031

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