12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20250730000.1
Qualification of an additional assembly site using qualified BOM options for select devices
Change Notification / Sample Request

Date: July 30, 2025
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 60 days of the date of this notice. Lack of acknowledgement of this notice within 60 days constitutes acceptance and approval of this change. If samples or additional data are required, requests must be received within 60 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 60 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.

TI values customer engagement and feedback related to TI changes. Customers should contact TI if there are questions or concerns regarding a change notification.

Change Management Team
SC Business Services

20250730000.1
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
TLV2231IDBVR	NULL
TLV2731IDBVR	NULL

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

PCN Number:	20250730000.1	PCN Date:	July 30, 2025
Title:	Qualification of an additional assembly site using qualified BOM options for select devices		
Customer Contact:	Change Management Team	Dept:	Quality Services
Proposed 1st Ship Date:	October 28, 2025	Sample requests accepted until:	September 28, 2025*

***Sample requests received after September 28, 2025 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 an additional assembly sita and BOM options for the devices listed below.

Construction differences are as follows:

	Current	Proposed
Assembly site	TIPI	CDAT
Lead Frame Finish	NiPdAu	Matte Sn
Mount Compound	8095733	TLV2731:4229877 TLV2231: 8095733

The datasheets will be changing as a result of the above mentioned changes. The datasheet change details can be reviewed in the datasheet revision history. For additional information, the standard data package (SDP) should be requested. The request can be sent to pcn_ww_admin_team@list.ti.com

The links to the revised datasheets are available in the table below:

Changes from Revision D (April 2001) to Revision E (July 2025) **Page**

- Updated the numbering format for tables, figures, and cross-references throughout the document..... 1
- Added *Applications*, *Pin Configuration and Functions*, *Specifications*, *Application and Implementation*, *Device and Documentation Support*, and *Mechanical, Packaging, and Orderable Information* sections..... 1
- Deleted TLV2231Y device and associated content from data sheet..... 1
- Deleted "Macromodel Included" from *Features* 1
- Deleted equivalent schematic..... 2
- Deleted input offset voltage long-term drift and associated table note..... 4
- Deleted common-mode input voltage range typical value..... 4
- Deleted common-mode input voltage range for full temperature range..... 4
- Changed differential input resistance typical value from $10^{12}\Omega$ to 540GΩ..... 4
- Changed unit of common-mode input resistance from $10^{12}\Omega$ to 1TΩ..... 4
- Changed common-mode input capacitance typical value from 6pF to 1pF..... 4
- Changed output impedance from closed-loop to open-loop..... 4
- Changed output impedance test condition from A_V = 1 to I_O = 0A..... 4
- Changed output impedance from 156Ω to 525Ω..... 4
- Changed CMRR minimum value for room temperature from 60dB to 54dB..... 4
- Changed CMRR minimum value for full temperature range from 55dB to 54dB..... 4
- Added table note 2 to input bias current and input offset current..... 4
- Changed slew rate typical value for room temperature from 1.25V/µs to 0.25V/µs..... 5

- Changed slew rate minimum value for room temperature from 0.75V/µs to 0.24V/µs....5
- Changed slew rate minimum value for full temperature range from 0.5V/µs to 0.24V/µs....5
- Deleted equivalent input noise voltage for f = 10Hz....5
- Deleted peak-to-peak equivalent input noise voltage for f = 0.1Hz to 1Hz....5
- Changed peak-to-peak equivalent input noise voltage for f = 0.1Hz to 10Hz from 1.5µV to 1.8µV....5
- Changed equivalent input noise current typical value from 0.6fA/$\sqrt{Hz}$ to 2fA/$\sqrt{Hz}$ 5
- Deleted THD+N test conditions and changed values to "see *Typical Characteristics*"....5
- Deleted settling time....5
- Deleted gain margin....5
- Deleted input offset voltage long-term drift and associated table note....6
- Deleted common-mode input voltage range typical value....6
- Deleted common-mode input voltage range for full temperature range....6
- Changed differential input resistance typical value from $10^{12}\Omega$ to 540GΩ....6
- Changed common-mode input resistance from $10^{12}\Omega$ to 1TΩ....6
- Changed common-mode input capacitance from 6pF to 1pF....6
- Changed output impedance from closed-loop to open-loop....6
- Changed output impedance test condition from A_V = 1 to I_O = 0A....6
- Changed output impedance typical value from 138Ω to 525Ω....6
- Added table note to input bias current and input offset current....6
- Deleted equivalent input noise voltage for f = 10Hz....7
- Deleted peak-to-peak equivalent input noise voltage for f = 0.1Hz to 1Hz....7
- Changed peak-to-peak equivalent input noise voltage for f = 0.1Hz to 10Hz from 1.5µV to 1.8µV....7
- Changed equivalent input noise current typical value from 0.6fA/$\sqrt{Hz}$ to 2fA/$\sqrt{Hz}$ 7
- Deleted THD+N test conditions and changed values to "see *Typical Characteristics*"....7
- Deleted settling time....7
- Deleted gain margin....7
- Deleted Figures 9, 10, 12, 16, 17, 19–21, 24–27, 34, 35, 48–55, ...8
- Updated Figure 6-31, 6-32, and 6-33....8
- Updated *Driving Large Capacitive Loads* section....15
- Deleted *Macromodel Information* section....15

Changes from Revision A (March 2001) to Revision B (July 2025) **Page**

- Updated the numbering format for tables, figures, and cross-references throughout the document....1
- Added *Applications*, *Pin Configuration and Functions*, *Specifications*, *Application and Implementation*, *Device and Documentation Support*, and *Mechanical, Packaging, and Orderable Information* sections....1
- Deleted TLV273Y device and associated content from data sheet....1
- Deleted "Macromodel Included" from *Features* 1
- Added *Applications* section....1
- Deleted TLV2731Y chip information....2
- Deleted equivalent schematic....2
- Updated formatting based on the latest standards....3
- Deleted input offset voltage long-term drift and associated table note 4....4
- Deleted common-mode input voltage range typical value....4
- Deleted common-mode input voltage range for full temperature range....4
- Changed differential input resistance typical value from $10^{12}\Omega$ to 540GΩ....4
- Changed common-mode input resistance unit typical value from $10^{12}\Omega$ to 1TΩ....4
- Changed common-mode input capacitance typical value from 6pF to 1pF....4
- Changed output impedance from closed-loop to open-loop....4
- Changed open-loop output impedance test condition from A_V = 1 to I_O = 0A....4
- Changed output impedance typical value from 156Ω to 525Ω....4
- Changed CMRR minimum value for room temperature from 60dB to 54dB....4

- Changed CMRR minimum value for full temperature range from 55dB to 54dB....4
- Added table note 2 to input bias current and input offset current....4
- Changed slew rate typical value for room temperature from 1.25V/µs to 0.25V/µs....5
- Changed slew rate minimum value for room temperature from 0.75V/µs to 0.24V/µs....5
- Changed slew rate minimum value for full temperature range from 0.5V/µs to 0.24V/µs....5
- Deleted equivalent input noise voltage for f = 10Hz....5
- Deleted peak-to-peak equivalent input noise voltage for f = 0.1Hz to 1Hz....5
- Changed peak-to-peak equivalent input noise voltage for f = 0.1Hz to 10Hz from 1.5µV to 1.8µV....5
- Changed equivalent input noise current typical value from 0.6fA/$\sqrt{Hz}$ to 2fA/$\sqrt{Hz}$....5
- Deleted THD+N test conditions and changed values to "see *Typical Characteristics*"....5
- Deleted settling time....5
- Deleted gain margin....5
- Deleted input offset voltage long-term drift and associated table note 4....6
- Deleted common-mode input voltage range typical value....6
- Deleted common-mode input voltage range for full temperature range....6
- Changed differential input resistance typical value from $10^{12}\Omega$ to 540GΩ....6
- Changed common-mode input resistance from $10^{12}\Omega$ to 1TΩ....6
- Changed common-mode input capacitance from 6pF to 1pF....6
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- Changed equivalent input noise current typical value from 0.6fA/$\sqrt{Hz}$ to 2fA/$\sqrt{Hz}$....7
- Deleted THD+N test conditions and changed values to "see *Typical Characteristics*"....7
- Deleted settling time....7
- Deleted gain margin....7
- Deleted Figures 8, 9, 11, 15, 16, 18–20, 23–26, 33, 34, 47–54, ...8
- Updated Figure 5-31, 5-32, and 5-33....8
- Updated *Driving Large Capacitive Loads* section....15
- Deleted *Macromodel Information* 15

Product Folder	Current Datasheet Number	New Datasheet Number	Link to full datasheet
TLV2231	SLOS158D	**SLOS158E**	http://www.ti.com/product/TLV2231
TLV2731	SLOS198A	**SLOS198B**	http://www.ti.com/product/TLV2731

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 200-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

Changes to product identification resulting from this PCN:

Sample product shipping label (not actual product label)

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
TIPI	PHI	PHL	Baguio CityMLA
CDAT	**CDA**	**CHN**	**Chengdu**

Product Affected

TLV2231IDBVR TLV2731IDBVR

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: TLV2731IDBVR	QBS Product Reference: OPA991QDBVRQ1	QBS Process Reference: TLV9302IDR	QBS Package Reference: LM74700QDBVRQ1	QBS Package Reference: UCC287502DBVR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	1/77/0	3/231/0	3/231/0	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	1/77/0	-	-	3/231/0
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	3/231/0	3/231/0	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	1/77/0	3/231/0	3/231/0	3/231/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	1/45/0	3/231/0	3/135/0	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	3/231/0	-	-
HTOL	B1	Life Test	150C	300 Hours	-	-	-	1/77/0	-
HTOL	B1	Life Test	150C	408 Hours	-	1/77/0	-	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: TLV2731IDBVR	QBS Product Reference: OPA991QDBVRQ1	QBS Process Reference: TLV9302IDR	QBS Package Reference: LM74700QDBVRQ1	QBS Package Reference: UCC287502DBVR
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	-	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	-	2500 Volts	-	1/3/0	-	-	-
LU	E4	Latch-Up	Per JESD78	-	-	1/6/0	1/3/0	-	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	-	3/90/0	1/30/0	1/30/0	1/30/0
FTY	E6	Final Test Yield	-	-	1/Pass	1/Pass	-	-	-

- QBS: Qual By Similarity, also known as Generic Data
- Qual Device TLV2731IDBVR 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-2502-056

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: TLV2231IDBVR	QBS Product Reference: OPA991IDBVR	QBS Process Reference: S1508017C1PLNR	QBS Reference: TPS3840PH30DBVRQ1	QBS Reference: TL331QDBVRQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	3/231/0	3/231/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	-	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	3/231/0	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	175C	500 Hours	-	-	-	-	1/45/0
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	-	-

Type	#	Test Name	Condition	Duration	Qual Device: TLV2231IDBVR	QBS Product Reference: OPA991IDBVR	QBS Process Reference: S1508017C1PLNR	QBS Reference: TPS3840PH30DBVRQ1	QBS Reference: TL331QDBVRQ1
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	1/15/0	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	1/15/0
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	3/30/0	3/30/0	3/30/0
ESD	E2	ESD CDM	-	250 Volts	-	1/3/0	-	-	-
ESD	E2	ESD CDM	-	500 Volts	-	-	1/3/0	-	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	-	-	1/3/0	1/6/0	-	1/6/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	-	1/30/0	3/90/0	3/90/0	1/30/0
FTY	E6	Final Test Yield	-	-	1/Pass	-	-	-	-

- QBS: Qual By Similarity, also known as Generic Data
- Qual Device TLV2231IDBVR 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-2505-004

In performing change qualifications, Texas Instruments follows integrated circuit industry standards in performing defect mechanism analysis and failure mechanism-based accelerated environmental testing to ensure wafer fab process, assembly process and product quality and reliability. As encouraged by these standards, TI uses both product-specific and generic (family) data in qualifying its changes. For devices to be categorized as a 'product qualification family' for generic data purposes, they must share similar product, wafer fab process and assembly process elements. The applicability of generic data (also known at TI as Qualification by Similarity (QBS)) is determined by the Reliability Engineering function following these industry standards. Generic data is shown in the qualification report in columns titled "QBS Process" (for wafer fab process), "QBS Package" (for assembly process) and "QBS Product" (for product family).

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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