



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20231219011.1

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

Date: December 22, 2023

To:

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.

This particular PCN is related to TI's multiyear transition plan for our two remaining factories with 150-millimeter production (DFAB in Dallas, Texas, and SFAB in Sherman, Texas). DFAB will remain open, but will focus on 200-mm production, with a smaller set of technologies. SFAB will close no earlier than 2024 and no later than 2025. As referenced in the "reason for change" below, these changes are part of our multiyear plan to transition these products to newer, more efficient manufacturing processes and technologies, underscoring our commitment to product longevity and supply continuity.

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

20231219011.1
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
LP2981A-33DBVR	null
LP2981A-50DBVR	null
LP2992AIM5-1.8/NOPB	null
LP2981-30DBVR	null
LP2981-33DBVR	null
LP2981-50DBVR	null
LP2981AIM5-3.3/NOPB	null
LP2981AIM5-5.0/NOPB	null
LP2981AIM5X-3.6/NOPB	null
LP2981AIM5X-5.0/NOPB	null
LP2981IM5-3.3/NOPB	null
LP2981IM5-5.0/NOPB	null
LP2981IM5X-3.0/NOPB	null
LP2981IM5X-3.3/NOPB	null
LP2981IM5X-5.0/NOPB	null
LP2982AIM5-3.3/NOPB	null
LP2982AIM5-5.0/NOPB	null
LP2982IM5-3.3/NOPB	null
LP2982IM5-5.0/NOPB	null
LP2992AIM5-2.5/NOPB	null
LP2992AIM5-3.3/NOPB	null
LP2992AIM5-5.0/NOPB	null
LP2992AIM5X-3.3/NOPB	null
LP2992AIM5X-5.0/NOPB	null
LP2992IM5-1.8/NOPB	null
LP2992IM5-3.3/NOPB	null
LP2992IM5-5.0/NOPB	null
LP2992IM5X-3.3/NOPB	null
LP2992IM5X-5.0/NOPB	null
LP2981AIM5X-3.3/NOPB	null
LP2981IM5X-3.6/NOPB	null
LP2981IM5X-36C	null
LP2982AIM5X-5.0/NOPB	null
LP2982IM5X-3.3/NOPB	null
LP2992IM5X-1.8/NOPB	null
LP2981A-30DBVR	null
LP2982IM5X-3.0/NOPB	null

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

PCN Number:	20231219011.1	PCN Date:	December 22, 2023
Title:	Qualification of RFAB using qualified Process Technology, Die Revision and Assembly Site/BOM options for select devices		
Customer Contact:	Change Management team	Dept:	Quality Services
Proposed 1st Ship Date:	Mar 20, 2024	Estimated Sample Availability:	Jan 20, 2024*

***Sample requests received after January 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 Materials
☒ 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 LBC7 qualified process technology and additional Assembly/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	J11	150 mm	RFAB	LBC7	300 mm
GFAB	VIP1P	150 mm/200 mm			
DFAB	VIP1P	200 mm			

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

For more information on the performance of the LBC7 die (new chip) and any differences with the J11/VIP1P die (legacy chip), please consult the datasheet revisions listed below.

An example of that comparison is shown below:

LP2992

SNVS171K – NOVEMBER 2001 – REVISED DECEMBER 2023



5 Specifications

5.1 Absolute Maximum Ratings

over operating free-air temperature range (unless otherwise noted)^{(1) (2)}

		MIN	MAX	UNIT
V _{IN}	Continuous input voltage range (for legacy chip)	-0.3	16	V
	Continuous input voltage range (for new chip)	-0.3	18	
V _{OUT}	Output voltage range (for legacy chip)	-0.3	9	
	Output voltage range (for new chip)	-0.3	V _{IN} + 0.3 or 9 (whichever is smaller)	
V _{BYPASS}	BYPASS pin voltage range (for new chip)	-0.3	3	
V _{ON/OFF}	ON/OFF pin voltage range (for legacy chip)	-0.3	16	
	ON/OFF pin voltage range (for new chip)	-0.3	18	
Current	Maximum output	Internally limited		A
Temperature	Operating junction, T _J	-55	150	°C
		-65	150	

Assembly BOM options are noted below:

Group 1 Device:

	TIEM	CDAT
Bond wire composition, diameter	Cu, 0.96mil Au, 1.0mil	Cu, 1.0mil
Mount compound	8075531	4207123
Mold compound	8097131	4222198

Group 2 Device:

	TFME	HNC	CDAT
Bond wire composition, diameter	Cu, 1.0mil	Au, 1.0mil	Cu, 1.0mil
Mount compound	A-03	400154	4207123
Mold compound	R-17	450228	4222198

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
GFAB	GF6/GF8	GBR	Greenock
DL-LIN-1	DLN	USA	Dallas
RFAB	RFB	USA	Richardson

Die Rev:

Current

New

Die Rev [2P]	Die Rev [2P]
A, B, C	A

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
TIEM	CU6	MYS	Melaka
TFME	NFM	CHN	Chongchuan
HNC	CHS	CHN	Jiaxing
CDAT	CDA	CHN	Chengdu

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





(1P) **SN74LS07NSR**
(Q) **2000** (D) **0336**
(31T) LOT: 3959047MLA
(4W) TKY (1T) 7523483SI2
(P)
(2P) REV: (V) 0033317
(20L) CS0: SHE (21L) CC0: USA
(22L) AS0: MLA (23L) AC0: MYS

Group 1 Product Affected:

LP2981AIM5-3.3/NOPB	LP2981IM5X-3.3/NOPB	LP2982IM5-5.0/NOPB	LP2992AIM5X-5.0/NOPB
LP2981AIM5-5.0/NOPB	LP2981IM5X-3.6/NOPB	LP2982IM5X-3.0/NOPB	LP2992IM5-1.8/NOPB
LP2981AIM5X-3.3/NOPB	LP2981IM5X-36C	LP2982IM5X-3.3/NOPB	LP2992IM5-3.3/NOPB
LP2981AIM5X-3.6/NOPB	LP2981IM5X-5.0/NOPB	LP2992AIM5-1.8/NOPB	LP2992IM5-5.0/NOPB
LP2981AIM5X-5.0/NOPB	LP2982AIM5-3.3/NOPB	LP2992AIM5-2.5/NOPB	LP2992IM5X-1.8/NOPB
LP2981IM5-3.3/NOPB	LP2982AIM5-5.0/NOPB	LP2992AIM5-3.3/NOPB	LP2992IM5X-3.3/NOPB
LP2981IM5-5.0/NOPB	LP2982AIM5X-5.0/NOPB	LP2992AIM5-5.0/NOPB	LP2992IM5X-5.0/NOPB
LP2981IM5X-3.0/NOPB	LP2982IM5-3.3/NOPB	LP2992AIM5X-3.3/NOPB	

Group 2 Product Affected:

LP2981-30DBVR	LP2981-50DBVR	LP2981A-33DBVR
LP2981-33DBVR	LP2981A-30DBVR	LP2981A-50DBVR

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: LP2985A-50DBVRM3	QBS Reference: TPS2543QRTETQ1	QBS Reference: TLV76790QWDRBRQ1	QBS Reference: LP2985-50DBVRM3	QBS Reference: TPS3840PH30DBVRQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	1/77/0	3/231/0	3/231/0	-	3/231/0
UHA	A3	Autoclave	121C/15psig	96 Hours	-	-	-	-	3/231/0
UHA	A3	Autoclave	130C/85%RH	96 Hours	-	3/231/0	-	-	-
UHA	A3	Unbiased HAST	130C/85%RH	96 Hours	1/77/0	-	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	-	-	-	-	3/135/0
HTSL	A6	High Temperature Storage Life	170C	420 Hours	1/77/0	-	-	-	-
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	3/135/0	3/231/0	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	3/231/0	1/77/0	-	3/231/0
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
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	1/15/0	-	-	1/15/0
PD	C4	Physical Dimensions	Cpk>1.67	-	-	3/30/0	2/20/0	-	3/30/0
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	-	1/3/0	-
ESD	E2	ESD CDM	-	500 Volts	-	1/3/0	1/3/0	-	-
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	-	-	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	1/6/0	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	3/90/0	-	3/90/0

- QBS: Qual By Similarity
- Qual Device LP2985A-50DBVRM3 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-NPD-2202-123

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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