12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20250319003.2
Qualification of additional Fab site (DFAB) and additional Assembly/Test site (CDAT) options for select JIBB devices
Change Notification / Sample Request

Date: June 04, 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

20250319003.2
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
INA169QPWRQ1	INA169QPWRQ1
INA139QPWRQ1	INA139QPWRQ1
INA168QDBVRQ1	INA168QDBVRQ1
INA168QPWRQ1	INA168QPWRQ1
INA138QPWRQ1	INA138QPWRQ1

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

PCN Number:	20250319003.2	**PCN Date:**	June 04, 2025
Title:	Qualification of additional Fab site (DFAB) and additional Assembly/Test site (CDAT) options for select JIBB devices		
Customer Contact:	Change Management team	**Dept:**	Quality Services
Proposed 1st Ship Date:	December 01, 2025	**Sample requests accepted until:**	August 03, 2025*

***Sample requests received after August 03, 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 Materials
☒ Packing/Shipping/Labeling	☐ Test Process	☐ Wafer Fab Process

PCN Details

Description of Change:

Texas Instruments is pleased to announce the addition of DFAB and additional Assembly/Test site (CDAT) 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	JIBB	150 mm	DFAB	JIBB	200 mm

	Current	New
Wafer Probe Test site	SFAB	FFAB

There are no assembly changes for the devices listed in Group 1.

Group 2 construction differences are as follows:

	UTAC	CDAT
Mount compound	SID#PZ0013	4226215
Mold compound	SID#CZ0096	4222198
Lead finish	NiPdAu	Matte Sn
Wafer thickness	7.5mils	6mils
Pin 1 ID	Stripe	Dot

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

Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.

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 and 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

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:

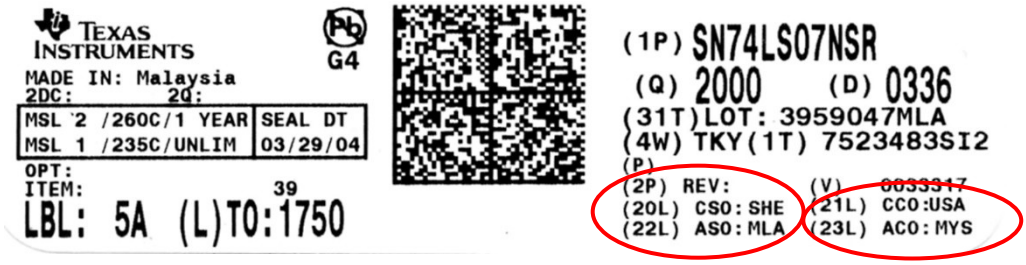
Fab Site Information:

Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
SH-BIP-1	SHE	USA	Sherman
DL-LIN	**DLN**	**USA**	**Dallas**

Assembly/Test Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
UTAC	NSE	THA	Bangkok
CDAT	**CDA**	**CHN**	**Chengdu**

Sample product shipping label (not actual product label)



Product Affected:

Group 1 (SFAB to DFAB only):

INA138QPWRQ1	INA139QPWRMO.A	INA168QPWRG4Q1	INA169QPWRG4Q1.A
INA138QPWRQ1.A	INA139QPWRQ1	INA168QPWRG4Q1.A	INA169QPWRQ1
INA139QPWRG4Q1	INA139QPWRQ1.A	INA168QPWRQ1	INA169QPWRQ1.A
INA139QPWRG4Q1.A	INA139QPWRSV	INA168QPWRQ1.A	
INA139QPWRMO	INA139QPWRSV.A	INA169QPWRG4Q1	

Group 2 (SFAB to DFAB and adding CDAT Assembly/Test site):

INA168QDBVRQ1	INA168QDBVRQ1.A

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

Automotive Qualification Summary
(As per AEC-Q100 Rev. J and JEDEC Guidelines)

Redbull Project JIBB fab transfer from SFAB to DFAB DP1: INA168QDBVRQ1
Approve Date 11-APRIL -2025

Product Attributes

Attributes	Qual Device: INA168QDBVRQ1
Automotive Grade Level	Grade 1
Operating Temp Range (C)	-40 to 125
Product Function	Power Management
Wafer Fab Supplier	DL-LIN
Assembly Site	CDAT
Package Group	SOT
Package Designator	DBV
Pin Count	5

- QBS: Qual By Similarity, also known as Generic Data
- Qual Device INA168QDBVRQ1 is qualified at MSL1 260C
- Qual Device INA168QDBVRQ1 is qualified at MSL1 260C

Qualification Results

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

Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: INA168QDBVRQ1
Test Group A - Accelerated Environment Stress Tests								
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL1 260C	-	3/0/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	3/231/1[1]
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Unbiased HAST	130C/85%RH	96 Hours	3/231/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	3/231/0
TC-BP	A4	MIL-STD883 Method 2011	1	5	Post Temp Cycle Bond Pull	-	-	3/15/0
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	175C	500 Hours	1/45/0
Test Group B - Accelerated Lifetime Simulation Tests								
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	125C	1000 Hours	3/231/0
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate	125C	48 Hours	3/2400/0
Test Group C - Package Assembly Integrity Tests								
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	3/90/0
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	3/90/0
SD	C3	JEDEC J-STD-002	1	15	PB Solderability	>95% Lead Coverage	-	1/15/0
SD	C3	JEDEC J-STD-002	1	15	PB-Free Solderability	>95% Lead Coverage	-	1/15/0
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions	Cpk>1.67	-	3/30/0

Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: INA168QDBVRQ1
Test Group D - Die Fabrication Reliability Tests								
EM	D1	JESD61	-	-	Electromigration	-	-	Completed Per Process Technology Requirements
TDDB	D2	JESD35	-	-	Time Dependent Dielectric Breakdown	-	-	Completed Per Process Technology Requirements
HCI	D3	JESD60 & 28	-	-	Hot Carrier Injection	-	-	Completed Per Process Technology Requirements
BTI	D4	-	-	-	Bias Temperature Instability	-	-	Completed Per Process Technology Requirements
SM	D5	-	-	-	Stress Migration	-	-	Completed Per Process Technology Requirements
Test Group E - Electrical Verification Tests								
ESD	E2	AEC Q100-002	1	3	ESD HBM	-	2000 Volts	1/3/0
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	1000 Volts	1/3/0
LU	E4	AEC Q100-004	1	3	Latch-Up	Per AEC Q100-004	-	1/6/0
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	3/90/0
Additional Tests								

- 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

Ambient Operating Temperature by Automotive Grade Level:

- Grade 0 (or E): -40C to +150C
- Grade 1 (or Q): -40C to +125C
- Grade 2 (or T): -40C to +105C
- Grade 3 (or I) : -40C to +85C

E1 (TEST): Electrical test temperatures of Qual samples (High temperature according to Grade level):

- Room/Hot/Cold : HTOL, ED
- Room/Hot : THB / HAST, TC / PTC, HTSL, ELFR, ESD & LU
- Room : AC/uHAST

Quality and Environmental data is available at TI's external Web site: http://www.ti.com/

TI Qualification ID: R-CHG-2206-002

[1]-1 EOS occurred in 1 bHAST unit. FA and 8D can be provided upon request. Lot was rerun in separate REL: TUCREL.24.SENSING.12148 and passed.

ZVEI ID's: SEM-PW-02, SEM-PW-03, SEM-PW-13, SEM-PA-05, SEM-PA-11, SEM-PA-07, SEM-PA-13, SEM-PA-18, SEM-TF-01

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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