



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20250326010.2

**Qualification of RFAB using qualified Process Technology, Die Revision, Datasheet, Assembly/Test site (CDAT) & alternate BOM qualification for select devices
Change Notification / Sample Request**

Date: March 27, 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

20250326010.2
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
TPS3820-50QPDBVRQ1	TPS3820-50QPDBVRQ1
TPS3824-50QDBVRQ1	TPS3824-50QDBVRQ1
TPS3825-33QDBVRQ1	TPS3825-33QDBVRQ1
TPS3823-50QDBVRQ1	TPS3823-50QDBVRQ1
TPS3824-33QDBVRQ1	TPS3824-33QDBVRQ1
TPS3820-33QDBVRQ1	TPS3820-33QDBVRQ1
TPS3820-33QPDBVRQ1	TPS3820-33QPDBVRQ1
TPS3823-25QDBVRQ1	TPS3823-25QDBVRQ1
TPS3828-33QDBVRQ1	TPS3828-33QDBVRQ1
TPS3823-33QDBVRQ1	TPS3823-33QDBVRQ1
TPS3820-50QDBVRQ1	TPS3820-50QDBVRQ1

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

PCN Number:	20250326010.2	PCN Date:	March 27, 2025		
Title:	Qualification of RFAB using qualified Process Technology, Die Revision, Datasheet, Assembly/Test site (CDAT) & alternate BOM qualification for select devices				
Customer Contact:	Change Management Team	Dept:	Quality Services		
Proposed 1st Ship Date:	September 23, 2025	Sample requests accepted until:	May 26, 2025*		
*Sample requests received after May 26, 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 qualification of its RFAB fabrication facility as an additional Wafer Fab option for the devices listed below as well as new assembly/Test site (CDAT) and BOM options:					
Current Fab Site			Additional Fab Site		
Current Fab Site	Process	Wafer Diameter	Additional Fab Site	Process	Wafer Diameter
DFAB	LBC2	200 mm	RFAB	LBC9	300 mm
The die was also changed as a result of the process change.					
	Current	New			
Probe Site	DFAB	CD-PR			
Construction differences are as follows:					
	Current Assembly Site		Additional Assembly Site		
	LEN	PHI	CDAT		
Wire diam/type	1.0mil Au	1.0mil Cu	0.8mil Cu		
Mount compound	0003C10332	4207123	4207123		
Mold compound	0011G60007	4222198	4222198		
Lead finish	NiPdAu	NiPdAu	Matte Sn		
Device Marking	Pin 1 Stripe	Pin 1 Stripe	Pin 1 Dot		
ECAT	G4	G4	G3		
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 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. The links to the revised datasheets are available in the table below.					

Changes from Revision D (July 2019) to Revision E (March 2025) Page

• Updated the numbering format for tables, figures, and cross-references throughout the document.....	1
• Updated the numbering format for tables, figures, and cross-references throughout the document.....	1
• Updated thermal parameters.....	4
• Clarify VPOR test conditions.....	5
• Updated MR resistance typical value.....	5

Product Folder	Current Datasheet Number	New Datasheet Number	Link to full datasheet
TPS382x-xx-Q1	SGLS143D	SGLS143E	http://www.ti.com/product/TPS3820-Q1

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
DL-LIN	DLN	USA	Dallas
RFAB	RFB	USA	Richardson

Die Rev:

Current	New
Die Rev [2P]	Die Rev [2P]
A, C	A

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
LEN	LIN	TWN	Taichung
TIPI	PHI	PHL	Baguio City
CDAT	CDA	CHN	Chengdu

Sample product shipping label (not actual product label)


**TEXAS
INSTRUMENTS**
 MADE IN: Malaysia
 2DC: 2Q:


G4



(1P) SN74LS07NSR
 (Q) 2000 (D) 0336
 (31T) LOT: 3959047MLA
 (4W) TKY (1T) 7523483SI2
 (P)
 (2P) REV: (V) 0033317
 (20L) CSO: SHE (21L) CCO:USA
 (22L) ASO: MLA (23L) ACO: MYS

OPT:
 ITEM: 39
 LBL: 5A (L)T0:1750

Product Affected:

TPS3820-33QDBVRQ1	TPS3820-50QDBVRQ1	TPS3823-50QDBVRQ1	TPS3825-33QDBVRQ1
TPS3820-33QDBVRQ1	TPS3823-25QDBVRQ1	TPS3824-33QDBVRQ1	TPS3828-33QDBVRQ1
TPS3820-50QDBVRQ1	TPS3823-33QDBVRQ1	TPS3824-50QDBVRQ1	

For alternate parts with similar or improved performance, please visit the product page on [TI.com](https://www.ti.com)

TI Information
Selective Disclosure

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

TPS382x/TPS312x Grade 1 AECQ100/006 Product Qualification - LBC9/RFAB SOT23(DBV)/CDAT
Approve Date 25-April-2024

Product Attributes

Attributes	Qual Device: TPS3824-33QDBVRQ1	Qual Device: TPS3825-33QDBVRQ1	Qual Device: TPS3828-33QDBVRQ1	QBS Product Reference: TPS35AA38AGADDFRQ1	QBS Package, Process Reference: TPS3840PH30DBVRQ1	QBS Package Reference: TPS3813K33QDBVRQ1
Automotive Grade Level	Grade 1	Grade 1	Grade 1	Grade 1	Grade 1	Grade 1
Operating Temp Range (C)	-40 to 125	-40 to 125	-40 to 125	-40 to 125	-40 to 125	-40 to 125
Product Function	Power Management	Power Management	Power Management	Power Management	Power Management	Power Management
Wafer Fab Supplier	RFAB	RFAB	RFAB	RFAB	RFAB	RFAB
Assembly Site	CDAT	CDAT	CDAT	PHI	CDAT	CDAT
Package Group	SOT	SOT	SOT	SOT	SOT	SOT
Package Designator	DBV	DBV	DBV	DDF	DBV	DBV
Pin Count	5	5	5	8	5	6

- QBS: Qual By Similarity
- Qual Device TPS3824-33QDBVRQ1 is qualified at MSL1 260C
- Qual Device TPS3825-33QDBVRQ1 is qualified at MSL1 260C
- Qual Device TPS3828-33QDBVRQ1 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: TPS3824-33QDBVRQ1	Qual Device: TPS3825-33QDBVRQ1	Qual Device: TPS3828-33QDBVRQ1	QBS Product Reference: TPS35AA38AGADDFRQ1	QBS Package, Process Reference: TPS3840PH30DBVRQ1	QBS Package Reference: TPS3813K33QDBVRQ1
Test Group A - Accelerated Environment Stress Tests													

Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: TPS3824-33QDBVRQ1	Qual Device: TPS3825-33QDBVRQ1	Qual Device: TPS3828-33QDBVRQ1	QBS Product Reference: TPS35AA38AGADDERQ1	QBS Package, Process Reference: TPS3840PH30DBVRQ1	QBS Package Reference: TPS3813K33QDBVRQ1
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL1 260C	-	-	-	-	1/308/0	3/0/0	1/0/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	-	-	-	1/77/0	3/231/0	-
ACU/HAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Autoclave	121C/15psig	96 Hours	-	-	-	-	3/231/0	-
ACU/HAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	-	-	1/77/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	1/77/0	3/231/0	1/77/0
TC-BP	A4	MIL-STD883 Method 2011	1	5	Post Temp Cycle Bond Pull	-	-	-	-	-	1/5/0	1/5/0	1/5/0
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	150C	1000 Hours	-	-	-	1/77/0	3/135/0	1/77/0
Test Group B - Accelerated Lifetime Simulation Tests													
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	125C	1000 Hours	-	-	-	1/77/0	3/231/0	-
EDR	B3	AEC Q100-005	1	77	NVM Endurance, Data Retention, and Op Life	Per QSS-009-018	1 Step	-	-	-	1/77/0	-	-
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	-	-	-	1/30/0	3/90/0	1/30/0
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	-	-	-	1/30/0	3/90/0	1/30/0
SD	C3	JEDEC J-STD-002	1	15	PB Solderability	>95% Lead Coverage	-	-	-	-	1/15/0	1/15/0	-
SD	C3	JEDEC J-STD-002	1	15	PB-Free Solderability	>95% Lead Coverage	-	-	-	-	1/15/0	1/15/0	-
Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: TPS3824-33QDBVRQ1	Qual Device: TPS3825-33QDBVRQ1	Qual Device: TPS3828-33QDBVRQ1	QBS Product Reference: TPS35AA38AGADDERQ1	QBS Package, Process Reference: TPS3840PH30DBVRQ1	QBS Package Reference: TPS3813K33QDBVRQ1
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions	Cpk>1.67	-	-	-	-	1/10/0	3/30/0	1/10/0
Test Group D - Die Fabrication Reliability Tests													
EM	D1	JESD61	-	-	Electromigration	-	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
TDDb	D2	JESD35	-	-	Time Dependent Dielectric Breakdown	-	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
HCI	D3	JESD60 & 28	-	-	Hot Carrier Injection	-	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
BTI	D4	-	-	-	Bias Temperature Instability	-	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
SM	D5	-	-	-	Stress Migration	-	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	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	1/3/0	1/3/0	1/3/0	-	-
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	1000 Volts	1/3/0	1/3/0	1/3/0	1/3/0	-	-
LU	E4	AEC Q100-004	1	6	Latch-Up	Per AEC Q100-004	-	1/3/0	1/3/0	1/3/0	1/6/0	-	-
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	1/30/0	1/30/0	1/30/0	3/90/0	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-2308-119

TI Information
Selective Disclosure

**Automotive Qualification Summary
(As per AEC and JEDEC Guidelines)**

**Q006 SOT_23 CDAT at CDAT
Approve Date 01-AUGUST -2022**

Attributes	Qual Device:
	<u>TPS3840PH30DBVRQ1</u>
Automotive Grade Level	Grade 1
Operating Temp Range (C)	-40 to 125
Product Function	Power Management
Wafer Fab Supplier	RFAB
Assembly Site	CDAT
Package Group	SOT
Package Designator	DBV
Pin Count	5

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: TPS3840PH30DBVRQ1
Test Group A - Accelerated Environment Stress Tests								
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL1 260C	-	3/0/0
PC	A1.1	-	3	22	SAM Precon Pre	Review for delamination	-	3/66/0
PC	A1.2	-	3	22	SAM Precon Post	Review for delamination	-	3/66/0
HAST	A2.1	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	3/231/0
HAST	A2.1.2	-	3	1	Cross Section, post bHAST, 1X	Post stress cross section	Completed	3/3/0
HAST	A2.1.3	-	3	3	Wire Bond Shear, post bHAST, 1X	Post stress	-	3/9/0
HAST	A2.1.4	-	3	3	Bond Pull over Stitch, post bHAST, 1X	Post stress	-	3/9/0
HAST	A2.1.5	-	3	3	Bond Pull over Ball, post bHAST, 1X	Post stress	-	3/9/0
HAST	A2.2	JEDEC JESD22-A110	3	70	Biased HAST	130C/85%RH	192 Hours	3/231/0
HAST	A2.2.1	-	3	22	SAM Analysis, post bHAST 2X	Review for delamination	Completed	3/66/0
HAST	A2.2.2	-	3	1	Cross Section, post bHAST, 2X	Post stress cross section	Completed	3/3/0
HAST	A2.2.3	-	3	3	Wire Bond Shear, post bHAST, 2X	Post stress	-	3/9/0
HAST	A2.2.4	-	3	3	Bond Pull over Stitch, post bHAST, 2X	Post stress	-	3/9/0
HAST	A2.2.5	-	3	3	Bond Pull over Ball, post bHAST, 2X	Post stress	-	3/9/0
TC	A4.1	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	3/231/0
TC	A4.1.1	-	3	22	SAM Analysis, post TC 1X	Review for delamination	Completed	3/66/0
TC	A4.1.2	-	3	1	Cross Section, post TC, 1X	Post stress cross section	Completed	3/3/0
TC	A4.1.3	-	3	3	Wire Bond Shear, post TC, 1X	Post stress	-	3/9/0
TC	A4.1.4	-	3	3	Bond Pull over Stitch, post TC, 1X	Post stress	-	3/9/0
TC	A4.1.5	-	3	3	Bond Pull over Ball, post TC, 1X	Post stress	-	3/9/0
TC	A4.2	JEDEC JESD22-A104 and Appendix 3	3	70	Temperature Cycle	-65C/150C	1000 Cycles	3/231/0
TC	A4.2.1	-	3	22	SAM Analysis, post TC, 2X	Review for delamination	Completed	3/66/0
TC	A4.2.2	-	3	1	Cross Section, post TC, 2X	Post stress cross section	Completed	3/3/0
TC	A4.2.3	-	3	3	Wire Bond Shear, post TC, 2X	Post stress	-	3/9/0
TC	A4.2.4	-	3	3	Bond Pull over Stitch, post TC, 2X	Post stress	-	3/9/0
TC	A4.2.5	-	3	3	Bond Pull over Ball, post TC, 2X	Post stress	-	3/9/0
HTSL	A6.1	JEDEC JESD22-A103	3	45	High Temperature Storage Life	150C	1000 Hours	3/135/0
HTSL	A6.1.1	-	3	1	Cross Section, post HTSL, 1X	Post stress cross section	Completed	3/3/0
HTSL	A6.2	JEDEC JESD22-A103	3	44	High Temperature Storage Life	150C	2000 Hours	3/135/0
HTSL	A6.2.1	-	3	1	Cross Section, post HTSL, 2X	Post stress cross section	Completed	3/3/0
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

- QBS: Qual By Similarity, also known as Generic Data
- Qual Device TPS3840PH30DBVRQ1 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
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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-BKF-2208-003

ZVEI IDs: SEM-DE-01, SEM-DE-02, SEM-DE-03, SEM-DS-01, SEM-PW-02, SEM-PW-09, SEM-PW-13, SEM-PA-05, SEM-PA-07, SEM-PA-08, SEM-PA-11, SEM-PA-13, SEM-PA-18, SEM-TF-01

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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