12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN#20240514001.2
Qualification of RFAB using qualified Process Technology, Die Revision and Assembly BOM options for select devices
Change Notification / Sample Request

Date: May 14, 2024
To: MOUSER PCN

Dear Customer:

This is an announcement of a change to a device that is currently offered by Texas Instruments. The details of this change are on the following pages.

Texas Instruments 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.

The changes discussed within this PCN will not take effect any earlier than the proposed first ship date on Page 3 of this notification, unless customer agreement has been reached on an earlier implementation of the change.

This notice does not change the end-of-life status of any product. Should product affected be on a previously issued product withdrawal/discontinuance notice, this notification does not extend the life of that product or change the life time buy offering/discontinuance plan.

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.

Sincerely,

Change Management Team
SC Business Services

20240514001.2
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
SN74LVC00AQPWRQ1	NULL
SN74LVC02AQPWRQ1	NULL
SN74LVC08AQPWRQ1	NULL
SN74LVC125AQPWRQ1	NULL
SN74LVC32AQPWRQ1	NULL

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

PCN Number:	20240514001.2	**PCN Date:**	May 14, 2024
Title:	Qualification of RFAB using qualified Process Technology, Die Revision and Assembly BOM options for select devices		
Customer Contact:	Change Management Team	**Dept:**	Quality Services
Proposed 1st Ship Date:	November 10, 2024	**Sample requests accepted until:**	June 13, 2024*

*Sample requests received after June 13, 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 a new Assembly BOM options (MLA) for the devices listed in the "Product Affected" section.

Current Fab Site			Additional Fab site		
Current Fab Site	**Process**	**Wafer Diameter**	**Additional Fab site**	**Process**	**Wafer Diameter**
FR-BIP-1	ASLNONC10	200mm	RFAB	LBC7	300mm

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

Construction differences are as follows:

	MLA	MLA (new)
Bond wire composition, diameter	Cu, 1.0 mil Au, 1.0mil	Cu, 0.8 mil
Mount Compound	4147858 4042500	4147858
Mold Compound	4211471 4206193	4211471

Reason for Change:

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
FR-BIP-1	TID	DEU	Freising
RFAB	**RFB**	**USA**	**Richardson**

Die Rev:

Current	**New**
Die Rev [2P]	**Die Rev [2P]**
K	**A**

Sample product shipping label (not actual product label):

Product Affected: Fab site, Die rev, BOM

SN74LVC00AQPWRQ1	SN74LVC08AQPWRQ1	SN74LVC32AQPWRQ1
SN74LVC02AQPWRQ1	SN74LVC125AQPWRQ1	

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

Approve Date 07-MAY -2024

Product Attributes

Attributes	Qual Device: SN74LVC125AQPWRQ1	Qual Device: SN74LVC02AQPWRQ1	QBS Process Reference: SN32570DYYRQ1	QBS Package Reference: SN74HCS74QPWRQ1	QBS Product Reference: SN74LVC11AWBQARQ1	QBS Product Reference: SN74LVC125AWBQARQ1	QBS Product Reference: SN74LVC11APWRQ1	QBS Product Reference: SN74LVC132APWRQ1	QBS Product Reference: SN74LVC02AWBQARQ1
Automotive Grade Level	Grade 1	Grade 1	Grade 1	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	-40 to 125	-40 to 125	-40 to 125
Product Function	Logic	Logic	Logic	Logic	Logic	Logic	Logic	Logic	Logic
Wafer Fab Supplier	RFAB	RFAB	RFAB	RFAB	RFAB	RFAB	RFAB	RFAB	RFAB
Assembly Site	MLA	MLA	PHI	MLA	CDAT	CDAT	MLA	MLA	CDAT
Package Group	TSSOP	TSSOP	SOT	TSSOP	QFN	QFN	TSSOP	TSSOP	QFN
Package Designator	PW	PW	DYY	PW	BQA	BQA	PW	PW	BQA
Pin Count	14	14	16	14	14	14	14	14	14

QBS: Qual By Similarity
Qual Device SN74LVC125AQPWRQ1 is qualified at MSL1 260C
Qual Device SN74LVC02AQPWRQ1 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: SN74LVC125AQPWRQ1	Qual Device: SN74LVC02AQPWRQ1	QBS Process Reference: SN32570DYYRQ1	QBS Package Reference: SN74HCS74QPWRQ1	QBS Product Reference: SN74LVC11AWBQARQ1	QBS Product Reference: SN74LVC125AWBQARQ1	QBS Product Reference: SN74LVC11APWRQ1	QBS Product Reference: SN74LVC132APWRQ1	QBS Product Reference: SN74LVC02AWBQAR
Test Group A - Accelerated Environment Stress Tests																
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL1 260C	-	-	-	3/0/0	3/0/0	1/0/0	-	1/0/0	-	-
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	3/231/0	1/77/0	-	1/77/0	-	-
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Autoclave	121C/15psig	96 Hours	-	-	3/231/0	3/231/0	-	-	-	-	-
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	-	1/77/0	-	1/77/0	-	-
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	-	-	3/231/0	3/231/0	1/77/0	-	1/77/0	-	-
TC-BP	A4	MIL-STD883 Method 2011	1	5	Post Temp Cycle Bond Pull	-	-	-	-	-	-	1/5/0	-	1/5/0	-	-
TC-SAM	A4	-	3	3	Post TC SAM	<50% delamination	-	-	-	-	-	1/12/0	-	-	-	-

Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: SN74LVC125AQPWRQ1	Qual Device: SN74LVC02AQPWRQ1	QBS Process Reference: SN74SZ07QDYYRQ1	QBS Package Reference: SN74HCS74QPWRQ1	QBS Product Reference: SN74LVC114AWBQARQ1	QBS Product Reference: SN74LVC125AWBQARQ1	QBS Product Reference: SN74LVC11APWRQ1	QBS Product Reference: SN74LVC132APWRQ1	QBS Product Reference: SN74LVC02AWBQAR
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	150C	1000 Hours	-	-	3/135/0	3/135/0	1/45/0	-	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	1/77/0	-	-	-	-
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	150C	300 Hours	-	-	3/231/0	-	-	-	-	-	-
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate	125C	48 Hours	-	-	-	3/2400/0	-	-	-	-	-
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate	150C	24 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	3/90/0	1/30/0	-	1/30/0	-	-
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	-	-	3/90/0	3/90/0	1/30/0	-	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	1/15/0	-	-	-	-
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions	Cpk>1.67	-	-	-	3/30/0	3/30/0	1/10/0	-	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	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Proce 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	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Proce 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	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Proce 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	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Proce 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	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Proce 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	1/3/0	1/3/0	1/3/0	-	1/3/0
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	1500 Volts	-	-	1/3/0	-	-	-	-	-	-
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	500 Volts	1/3/0	1/3/0	-	1/3/0	1/3/0	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	-	1/6/0	1/6/0	1/6/0	1/6/0	1/6/0	1/6/0	1/6/0	-	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	3/90/0	3/90/0	3/90/0	1/30/0	1/30/0	1/30/0	1/30/0

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/

Automotive Qualification Summary
(As per AEC and JEDEC Guidelines)

Q006 TSSOP at MLA

Approve Date 07-MAY -2024

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: SN74LVC125AQPWRQ1	Qual Device: SN74LVC02AQPWRQ1	QBS Reference: SN74HCS74QPWRQ1
Test Group A - Accelerated Environment Stress Tests										
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL1 260C	-	-	-	3/All/Pass
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	-	-	3/210/0
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

Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: SN74LVC125AQPWRQ1	Qual Device: SN74LVC02AQPWRQ1	QBS Reference: SN74HCS74QPWRQ1
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	-	-	3/210/0
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	-	-	3/132/0
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
Qual Device SN74LVC125AQPWRQ1 is qualified at MSL1 260C
Qual Device SN74LVC02AQPWRQ1 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
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/

ZVEI ID reference: SEM-PA-08, SEM-PA-11, SEM-PA-07, SEM-DE-03, SEM-PW-13, SEM-PW-09

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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