12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN#20221004001.1
Qualification of new Fab site (RFAB) using qualified Process Technology, Die Revision, and additional Assembly Sites & BOM option for select devices

Change Notification / Sample Request

Date: October 07, 2022
To: TOKYO ELECTRON DEVICE (DSTR) 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 of the change. If additional data is 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 PCN Team (PCN_ww_admin_team@list.ti.com). For sample requests or sample related questions, contact your local Field Sales Representative.

Sincerely,

PCN Team
SC Business Services

20221004001.1
Attachment: 1

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

DEVICE	CUSTOMER PART NUMBER
SN74LVC2T45DCTT	null
SN74LVC2T45DCUR	null
SN74LVC2T45DCUT	null
SN74LVC2T45DCTR	null
SN74LVC2T45DCURG4	null

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

PCN Number:	20221004001.1	PCN Date:	October 07, 2022
Title:	Qualification of new Fab site (RFAB) using qualified Process Technology, Die Revision, and additional Assembly Sites & BOM options for select devices		
Customer Contact:	PCN Manager	Dept:	Quality Services
Proposed 1st Ship Date:	Jan 5, 2023	Sample requests accepted until:	Nov 7, 2022*

***Sample requests received after Nov 7, 2022 will not be supported.**

Change Type:					
☒	Assembly Site	☒	Assembly Process	☒	Assembly Materials
☒	Design	☒	Electrical Specification	☐	Mechanical Specification
☐	Test Site	☐	Packing/Shipping/Labeling	☐	Test Process
☐	Wafer Bump Site	☐	Wafer Bump Material	☐	Wafer Bump Process
☒	Wafer Fab Site	☒	Wafer Fab Materials	☒	Wafer Fab Process
		☐	Part number change		

PCN Details

Description of Change:

Texas Instruments is pleased to announce the qualification of a new fab & process technology (RFAB, LBC9) and Assembly site & BOM option for selected devices as listed below in the product affected section. Construction differences are noted below:

Current Fab Site			Additional Fab Site		
Current Fab Site	**Process**	**Wafer Diameter**	**Additional Fab Site**	**Process**	**Wafer Diameter**
FR-BIP-1	ASLNONC10	200 mm	RFAB	LBC9	300 mm

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

Group 1 Devices Table (DCU):

	HNA	HFTF
Mount Compound	SID#400180	SID#A-18
Bond wire composition, diameter	Au, 0.8 mil	Cu, 0.8 mil or 1.0 mil
Mold Compound	SID#450207	SID#R-31 or SID#R-32
Lead finish	NiPdAu	Matte Sn or NiPdAu

Group 2 Device Table (DCT):

	HNA	HIT	HFTF
Mount Compound	SID#400728	SID#RZ241C	SID#A-18
Bond wire composition, diameter	Au, 1.0 mil	Au, 0.8 mil	Cu, 0.8 mil
Mold Compound	SID#450420	SID#G600K	SID#R-30
Lead finish	NiPdAu	NiPdAu	Matte Sn

Upon expiry of this PCN TI will combine lead free solutions in a single ***standard part number.*** For example; ***SN74LVC2T45DCUR*** – can ship with both Matte Sn and NiPdAu/Ag.

Example:

- Customer order for 7500 units of SN74LVC2T45DCUR with 2500 units SPQ (Standard Pack Quantity per Reel).

- TI can satisfy the above order in one of the following ways.
  - I. 3 Reels of NiPdAu finish.
  - II. 3 Reels of Matte Sn finish
  - III. 2 Reels of Matte Sn and 1 reel of NiPdAu finish.
  - IV. 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 shown below. The links to the revised datasheets are available in the table below.

Changes from Revision K (June 2017) to Revision L (October 2022) **Page**

- Updated the numbering format for tables, figures, and cross-references throughout the document.....1
- Updated the thermals in the *Thermal Information* section.....5
- Extended the minimum specifications for lower delays in the *Switching Characteristics* sections.....8

Product Folder	Current Datasheet Number	New Datasheet Number	Link to full datasheet
SN74LVC2T45	SCES516K	SCES516L	Datasheet Link

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]**
-	**A**

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
HNA	HNT	THA	Ayutthaya
HIT	HTC	JPN	Kitatsugaru, Aomori
HFTFAT	**HFT**	**CHN**	**Hefei**

Sample product shipping label (not actual product label)

Product Affected:

Group 1 Device list:

SN74LVC2T45DCUR	SN74LVC2T45DCUT	SN74LVC2T45DCURG4

Group 2 Device list:

SN74LVC2T45DCTR	SN74LVC2T45DCTT

Qualification Report
Approve Date 19-SEPTEMBER-2022

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: SN74LVC2T45DCTT	Qual Device: SN74LVC2T45DCTR	QBS Reference: SN74LVC2T45QDCURQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	1/77/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	1/77/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	1/77/0
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	-	1/45/0
HTOL	B1	Life Test	125C	1000 Hours	-	-	1/77/0
ESD	E2	ESD CDM	-	250 Volts	-	1/3/0	-
ESD	E2	ESD CDM	-	500 Volts	-	-	1/3/0
ESD	E2	ESD HBM	-	1000 Volts	-	1/3/0	-
ESD	E2	ESD HBM	-	2000 Volts	-	-	1/3/0
LU	E4	Latch-Up	Per JESD78	-	-	1/3/0	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	-	1/30/0	-
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	3/90/0

- QBS: Qual By Similarity
- Qual Device SN74LVC2T45DCTT is qualified at MSL1 260C
- Qual Device SN74LVC2T45DCTR 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/

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

TI Qualification ID: R-CHG-2109-076

Qualification Report
Approve Date 19-SEPTEMBER-2022

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: SN74LVC2T45DCUR	Qual Device: SN74LVC2T45DCURG4	Qual Device: SN74LVC2T45DCUT	QBS Reference: SN74LVC2T45QDCURQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	1/77/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	1/77/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	1/77/0
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	-	-	1/45/0
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	1/77/0
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	-	-
ESD	E2	ESD CDM	-	500 Volts	-	-	-	1/3/0
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	1/3/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	-	-
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	-	3/90/0

- QBS: Qual By Similarity
- Qual Device SN74LVC2T45DCUR is qualified at MSL1 260C

- Qual Device SN74LVC2T45DCURG4 is qualified at MSL1 260C
- Qual Device SN74LVC2T45DCUT 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/

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

TI Qualification ID: R-CHG-2109-078

For questions regarding this notice, e-mails can be sent to the contacts shown below or your local Field Sales Representative.

Location	E-Mail
WW Change Management Team	PCN_ww_admin_team@list.ti.com

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