12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20240411005.1
Qualification of RFAB using qualified Process Technology, Die Revision, Datasheet, and additional Assembly site/BOM options for select devices
Change Notification / Sample Request

Date: April 11, 2024
To: Newark/Farnell 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 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

20240411005.1
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
CD74HCT4053M96	NULL

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

PCN Number:	20240411005.1	PCN Date:	April 11, 2024
Title:	Qualification of RFAB using qualified Process Technology, Die Revision, Datasheet, and additional Assembly site/BOM options for select devices		
Customer Contact:	Change Management Team	Dept:	Quality Services
Proposed 1st Ship Date:	July 10, 2024	Sample requests accepted until:	May 11, 2024*

***Sample requests received after May 11, 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 Assembly site/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	74HC	150 mm	RFAB	LBC9	300 mm

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

Construction differences are as follows:

Group 1 device:

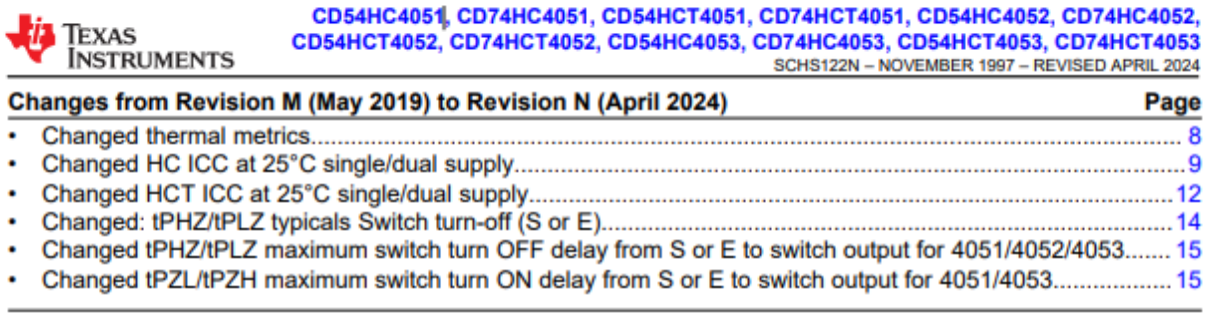
	ASESH	MLA
Wire diam, type	0.96mil Cu	0.80mil Cu
Mount compound	EY1000063	4147858
Mold compound	EN2000508	4211471

Group 2 device – no material differences (MLA as new Assembly site)

Group 3 device:

	ASESH	FMX
Wire diam, type	1.0mil Cu, 0.8mil Au	0.80mil Cu
Mount compound	EY1000063	4147858
Mold compound	EN2000506	4211880

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.



TEXAS INSTRUMENTS

CD54HC4051, CD74HC4051, CD54HCT4051, CD74HCT4051, CD54HC4052, CD74HC4052, CD54HCT4052, CD74HCT4052, CD54HC4053, CD74HC4053, CD54HCT4053, CD74HCT4053

SCHS122N – NOVEMBER 1997 – REVISED APRIL 2024

Changes from Revision M (May 2019) to Revision N (April 2024) **Page**

- Changed thermal metrics ... 8
- Changed HC ICC at 25°C single/dual supply ... 9
- Changed HCT ICC at 25°C single/dual supply ... 12
- Changed: tPHZ/tPLZ typicals Switch turn-off (S or E) ... 14
- Changed tPHZ/tPLZ maximum switch turn OFF delay from S or E to switch output for 4051/4052/4053 ... 15
- Changed tPZL/tPZH maximum switch turn ON delay from S or E to switch output for 4051/4053 ... 15

Product Folder	Current Datasheet Number	New Datasheet Number	Link to full datasheet
CDx4HC405x, CD4HCT405x	SCHS122M	**SCHS122N**	http://www.ti.com/product/CD54HC4051

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
RFAB	**RFB**	**USA**	**Richardson**

Die Rev:

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

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
ASESH	ASH	CHN	Shanghai
MLA	**MLA**	**MYS**	**Kuala Lumpur**
FMX	**MEX**	**MEX**	**Aguascalientes**

Sample product shipping label (not actual product label):

Product Affected: Wafer fab, Design

CD74HC4051EE4	CD74HC4052NSR	CD74HCT4052M96	CD74HCT4053M96E4
CD74HC4051NSR	CD74HCT4051M96	CD74HCT4052M96G4	
CD74HC4051NSRE4	CD74HCT4051M96E4	CD74HCT4053M96	

Group 1 Product Affected: Wafer fab, Design, Assembly site

CD74HC4051PWR	CD74HC4052PWR	CD74HC4053PWR	CD74HCT4053PWR

Group 2 Product Affected: Wafer fab, Design, Assembly site

CD74HC4051E

Group 3 Product Affected: Wafer fab, Design, Assembly site

CD74HC4051M96	CD74HC4052M96	CD74HC4053M96

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: CD74HC4051PWR	QBS Reference (Package): SN74AXC4T245QPWRQ1	QBS Reference (Package, Process, Product): CD4051BQPWRQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	1/77/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	3/231/0	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	1/77/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	3/231/0	1/77/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	1/45/0
HTOL	B1	Life Test	125C	1000 Hours	-	-	1/77/0
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	3/45/0	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	3/30/0	1/10/0
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	-
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	-	-
LU	E4	Latch-Up	Per JESD78	-	1/3/0	-	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	-

- QBS: Qual By Similarity
- Qual Device CD74HC4051PWR 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-CHG-2308-016

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: CD74HC4051NSR	Qual Device: CD74HC4051E	Qual Device: CD74HC4051M96	Qual Device: CD74HCT4051M96	QBS Reference (Package): SN75ALS1177NS	QBS Reference (Package): LM6134BIN/NOPB	QBS Reference (Package): CD4093BQM96Q1	QBS Reference (Package): LM358BIDR	QBS Reference (Process, Product): CD4051BQPWRQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	-	-	-	-	-	1/77/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	-	3/231/0	3/231/0	3/231/0	-	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	-	-	-	-	3/231/0	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	-	3/231/0	3/231/0	3/231/0	3/231/0	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	-	-	-	3/231/0	-	1/77/0	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	-	-	-	-	-	1/77/0
ESD	E2	ESD CDM	-	250 Volts	1/3/0	1/3/0	-	-	-	-	-	-	1/3/0
ESD	E2	ESD CDM	-	500 Volts	-	-	-	-	-	-	-	-	1/3/0
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	-	-	-	-	-	1/3/0
LU	E4	Latch-Up	Per JESD78	-	-	-	-	-	-	-	-	-	1/6/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	-	-	-	-	-	-	1/30/0

- QBS: Qual By Similarity
- Qual Device CD74HC4051NSR is qualified at MSL1 260C
- Qual Device CD74HC4051E is qualified at MSL1 260C
- Qual Device CD74HC4051M96 is qualified at MSL1 260C
- Qual Device CD74HCT4051M96 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-CHG-2301-061

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: CD74HCT4052M96	Qual Device: CD74HC4052M96	Qual Device: CD74HC4052NSR	Qual Device: CD74HC4052PWR	QBS Reference (Process): SN3257QDYYRQ1	QBS Reference (Package): TMUX4051PWRQ1	QBS Reference (Package): SN74LVC8T245NSR	QBS Reference (Package): TPS7B4256QDRQ1	QBS Reference (Process, Product): CD74HC4051QPWRQ
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	-	-	2/154/0	-	3/240/0	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	-	-	2/154/0	-	3/240/0	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	-	-	2/154/0	3/231/0	3/240/0	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	-	-	2/90/0	3/231/0	3/150/0	-
HTOL	B1	Life Test	150C	300 Hours	-	-	-	-	3/231/0	-	-	-	-
ELFR	B2	Early Life Failure Rate	150C	24 Hours	-	-	-	-	3/2400/0	-	-	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	-	-	-	-	1/30/0	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	-	-	-	-	1/30/0	-
ESD	E2	ESD CDM	-	500 Volts	-	-	-	-	-	-	-	-	1/3/0
ESD	E2	ESD HBM	-	1000 Volts	-	1/3/0	-	-	-	-	-	-	-
LU	E4	Latch-Up	Per JESD78	-	-	-	-	-	-	-	-	-	1/6/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	-	1/10/0	1/10/0	1/10/0	-	-	-	-	-

- QBS: Qual By Similarity
- Qual Device CD74HCT4052M96 is qualified at MSL1 260C
- Qual Device CD74HC4052M96 is qualified at MSL1 260C
- Qual Device CD74HC4052NSR is qualified at MSL1 260C
- Qual Device CD74HC4052PWR is qualified at MSL1 260C

- 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-CHG-2301-060

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: CD74HCT4053PWR	Qual Device: CD74HC4053PWR	Qual Device: CD74HCT4053M96	Qual Device: CD74HC4053M96	QBS Reference (Process): SNS257QDYYRQ1	QBS Reference (Package): TMUX4051PWRQ1	QBS Reference (Package): SN74HCS08QDRQ1	QBS Reference (Package): TPS7B4256QDRQ1	QBS Reference (Process, Product): CD74HC4051QPWRQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	-	-	2/154/0	-	3/240/0	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	-	-	-	3/231/0	-	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	-	-	2/154/0	-	3/240/0	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	-	-	2/154/0	3/231/0	3/240/0	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	-	-	2/90/0	-	3/150/0	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	-	-	-	-	1/80/0	-
HTOL	B1	Life Test	150C	300 Hours	-	-	-	-	3/231/0	-	-	-	-
ELFR	B2	Early Life Failure Rate	150C	24 Hours	-	-	-	-	3/2400/0	-	-	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	-	-	-	-	1/30/0	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	-	-	-	3/66/0	1/30/0	-
ESD	E2	ESD CDM	-	500 Volts	-	-	-	-	-	-	-	-	1/3/0
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	-	-	-	-	-	-	-	-
LU	E4	Latch-Up	Per JESD78	-	-	-	-	-	-	-	-	-	1/6/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/10/0	1/10/0	1/10/0	-	-	-	-	-	-

- QBS: Qual By Similarity

- Qual Device CD74HCT4053PWR is qualified at MSL1 260C
- Qual Device CD74HC4053PWR is qualified at MSL1 260C
- Qual Device CD74HCT4053M96 is qualified at MSL1 260C
- Qual Device CD74HC4053M96 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-CHG-2301-047

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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