12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20240930002.1
Qualification of RFAB using qualified Process Technology, Die Revision and additional Assembly Site & BOM options for select devices
Change Notification / Sample Request

Date: October 01, 2024
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 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

20240930002.1
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
PCF8574ADWR	NULL
PCF8574APWR	NULL
PCF8574ARGYR	NULL
PCF8574DWR	NULL
PCF8574N	NULL
PCF8574PWR	NULL
PCF8574RGTR	NULL
PCF8574RGYR	NULL

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

PCN Number:	20240930002.1	PCN Date:	October 01, 2024
Title:	Qualification of RFAB using qualified Process Technology, Die Revision and additional Assembly Site & BOM options for select devices		
Customer Contact:	Change Management Team	Dept:	Quality Services
Proposed 1st Ship Date:	December 30, 2024	Sample requests accepted until:	October 31, 2024*

***Sample requests received after October 31, 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
DFAB	50C21	150 mm	RFAB	LBC7	300 mm

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

Construction differences are as follows:

Group 1 :

	Current	Proposed
Wire type/diam	0.96mil Cu	0.8mil Cu

Group 2 : No material differences.

Group 3 : MLA as additional Assembly site. No material differences.

Group 4 :

	MLA	CDAT
Wire type/diam	0.96mil Cu	0.8mil Cu
Mount compound	4205846	4207123
Mold compound	4208625	4222198

Group 5 :

	UTL1	CDAT
Wire type/diam	1.0mil Cu	0.8mil Cu
Mount compound	PZ0031	4207123
Mold compound	CZ0134	4222198

Datasheet updates are included in PCN # 20240930003.0

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]**
C	**A**

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
TI Mexico	MEX	MEX	Aguascalientes
TI Taiwan	TAI	TWN	Shanghai
UTL1	NSE	THA	Bangkok
TI Malaysia	**MLA**	**MYS**	**KUALA LUMPUR**
CDAT	**CDA**	**CHN**	**Chengdu**

Sample product shipping label (not actual product label):

Product Affected:

Group 1 (FAB site, BOM)

PCF8574APWR	PCF8574APWRG4
PCF8574APWRE4	PCF8574PWR

Group 2 (FAB site)

PCF8574ADWR	PCF8574DWR

Group 3 (FAB site, Assembly site)

PCF8574N	PCF8574NE4

Group 4 (FAB site, Assembly site, BOM)

PCF8574ARGYR	PCF8574RGYR

Group 5 (FAB site, Assembly site, BOM)

PCF8574RGTR

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: PCF8574PWR	Qual Device: PCF8574APWR	QBS Reference: TPS53605DSQR	QBS Reference: OPA4991QPWRQ1
HAST	A2	Biased HAST	110C	264 Hours	-	-	3/231/0	-
HAST	A2	Biased HAST	110C/85%RH	264 Hours	-	-	-	1/77/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	3/231/0
UHAST	A3	Unbiased HAST	110C	264 Hours	-	-	3/231/0	-
TC	A4	Temperature Cycle	-65/150C	500 Cycles	-	-	3/231/0	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	1/77/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	1/45/0
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	2/154/0	-
HTOL	B1	CL (FF)	125C	1000 Hours	-	-	1/45/0	-
HTOL	B1	CL (FS)	125C	1000 Hours	-	-	1/32/0	-
HTOL	B1	CL (SF)	125C	1000 Hours	-	-	1/32/0	-
HTOL	B1	CL (SS)	125C	1000 Hours	-	-	1/45/0	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	3/231/0	-
HTOL	B1	Life Test	150C	300 Hours	-	-	-	3/231/0
ELFR	B2	ELFR	125C	48 Hours	-	-	3/2999/0	-

Type	#	Test Name	Condition	Duration	Qual Device: PCF8574PWR	Qual Device: PCF8574APWR	QBS Reference: TPS53605DSQR	QBS Reference: OPA4991QPWRQ1
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	1/22/0	-	3/66/0	-
PD	C4	Physical Dimensions	(per mechanical drawing)	-	-	-	3/90/0	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	-	1/10/0
ESD	E2	ESD CDM	-	1500 Volts	-	-	-	1/3/0
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	3/9/0	-
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	-	3/9/0	-
ESD	E2	ESD HBM	-	4000 Volts	-	-	-	1/3/0
LU	E4	LU	Per JESD78	-	-	-	3/18/0	-
LU	E4	Latch-Up	Per JESD78	-	1/3/0	-	-	3/18/0
CHAR	E5	Electrical Characterization	Min, Typ, Max Temp	-	1/30/0	1/30/0	3/90/0	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	3/90/0	-
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	-	3/90/0

- QBS: Qual By Similarity, also known as Generic Data
- Qual Device PCF8574PWR is qualified at MSL1 260C
- Qual Device PCF8574APWR 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-2309-007

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: PCF8574RGYR	Qual Device: PCF8574ARGYR	QBS Reference: TPS53605DSQR	QBS Reference: TPS25740BRGER	QBS Reference: PCF8574DWR	QBS Reference: PCF8574ADWR
HAST	A2	Biased HAST	110C	264 Hours	-	-	3/231/0	-	-	-
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	3/231/0	-	-
UHAST	A3	Unbiased HAST	110C	264 Hours	-	-	3/231/0	-	-	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	3/231/0	-	-
TC	A4	Temperature Cycle	-65/150C	500 Cycles	-	-	3/231/0	-	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	3/231/0	-	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	2/154/0	3/231/0	-	-
HTOL	B1	CL (FF)	125C	1000 Hours	-	-	1/45/0	-	-	-
HTOL	B1	CL (FS)	125C	1000 Hours	-	-	1/32/0	-	-	-
HTOL	B1	CL (SF)	125C	1000 Hours	-	-	1/32/0	-	-	-

Type	#	Test Name	Condition	Duration	Qual Device: PCF8574RGYR	Qual Device: PCF8574ARGYR	QBS Reference: TPS53605DSQR	QBS Reference: TPS25740BRGER	QBS Reference: PCF8574DWR	QBS Reference: PCF8574ADWR
HTOL	B1	CL (SS)	125C	1000 Hours	-	-	1/45/0	-	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	3/231/0	1/77/0	-	-
ELFR	B2	ELFR	125C	48 Hours	-	-	3/2999/0	-	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	1/22	-	3/66/0	-	1/22/0	-
PD	C4	Physical Dimensions	(per mechanical drawing)	-	-	-	3/90/0	-	-	-
ESD	E2	ESD CDM	-	250 Volts	1/3	-	3/9/0	1/3/0	1/3/0	-
ESD	E2	ESD HBM	-	1000 Volts	1/3	-	3/9/0	1/3/0	1/3/0	-
LU	E4	LU	Per JESD78	-	-	-	3/18/0	-	-	-
LU	E4	Latch-Up	Per JESD78	-	1/3	-	-	1/3/0	1/3/0	-
CHAR	E5	Electrical Characterization	Min, Typ, Max Temp	-	1/30	1/30	3/90/0	1/30/0	1/30/0	1/30/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30	1/30	3/90/0	1/30/0	1/30/0	1/30/0

- QBS: Qual By Similarity
- Qual Device PCF8574RGYR is qualified at MSL2 260C
- Qual Device PCF8574ARGYR is qualified at MSL2 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-2403-084

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: PCF8574N	QBS Reference: TPS53605DSQR	QBS Reference: SN74HC595N	QBS Reference: PCF8574PWR	QBS Reference: PCF8574DWR
HAST	A2	Biased HAST	110C	264 Hours	-	3/231/0	-	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	3/231/0	-	-
UHAST	A3	Unbiased HAST	110C	264 Hours	-	3/231/0	-	-	-
TC	A4	Temperature Cycle	-65/150C	500 Cycles	-	3/231/0	-	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	3/231/0	-	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	2/154/0	3/231/0	-	-
HTOL	B1	CL (FF)	125C	1000 Hours	-	1/45/0	-	-	-
HTOL	B1	CL (FS)	125C	1000 Hours	-	1/32/0	-	-	-
HTOL	B1	CL (SF)	125C	1000 Hours	-	1/32/0	-	-	-
HTOL	B1	CL (SS)	125C	1000 Hours	-	1/45/0	-	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	3/231/0	-	-	-
ELFR	B2	ELFR	125C	48 Hours	-	3/2999/0	-	-	-
SD	C3	PB-Free Solderability	8 Hours Steam Age	-	1/22/0	-	3/66/0	1/22/0	1/22/0

Type	#	Test Name	Condition	Duration	Qual Device: PCF8574N	QBS Reference: TPS53605DSQR	QBS Reference: SN74HC595N	QBS Reference: PCF8574PWR	QBS Reference: PCF8574DWR
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	1/22/0	3/66/0	3/66/0	1/22/0	1/22/0
PD	C4	Physical Dimensions	(per mechanical drawing)	-	-	3/90/0	-	-	-
ESD	E2	ESD CDM	-	250 Volts	-	3/9/0	-	1/3/0	1/3/0
ESD	E2	ESD HBM	-	1000 Volts	-	3/9/0	-	1/3/0	1/3/0
LU	E4	LU	Per JESD78	-	-	3/18/0	-	-	-
LU	E4	Latch-Up	Per JESD78	-	-	-	-	1/3/0	1/3/0
CHAR	E5	Electrical Characterization	Min, Typ, Max Temp	-	1/30/0	3/90/0	1/30/0	1/30/0	1/30/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	3/90/0	1/30/0	1/30/0	1/30/0

- QBS: Qual By Similarity, also known as Generic Data
- 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-2403-079

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: PCF8574DWR	Qual Device: PCF8574ADWR	QBS Reference: TPS2543QRTETQ1	QBS Reference: TPIC6A596DWRG4	QBS Reference: PCF8574PWR	QBS Reference: PCF8574APWR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	3/231/0	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	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	-	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	3/135/0	-	-
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	-	3/135/0	-	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	3/231/0	3/231/0	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	3/2400/0	-	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	1/15/0	-	-	-

Type	#	Test Name	Condition	Duration	Qual Device: PCF8574DWR	Qual Device: PCF8574ADWR	QBS Reference: TPS2543QRTETQ1	QBS Reference: TPIC6A596DWRG4	QBS Reference: PCF8574PWR	QBS Reference: PCF8574APWR
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	1/22/0	-	-	-	1/22	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	3/30/0	3/30/0	-	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	-	-	1/3	-
ESD	E2	ESD CDM	-	500 Volts	-	-	1/3/0	1/3/0	-	-
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	-	-	-	1/3	-
ESD	E2	ESD HBM	-	2000 Volts	-	-	1/3/0	1/3/0	-	-
LU	E4	Latch-Up	Per JESD78	-	1/3/0	-	1/6/0	1/6/0	1/3	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	-	-	1/30	1/30
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	3/90/0	3/90/0	-	-

- QBS: Qual By Similarity
- Qual Device PCF8574DWR is qualified at MSL1 260C
- Qual Device PCF8574ADWR 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-2403-077

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: PCF8574RGTR	QBS Reference: TPS53605DSQR	QBS Reference: TPS25740BRGER	QBS Reference: PCF8574PWR
HAST	A2	Biased HAST	110C	264 Hours	-	3/231/0	-	-
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	-
UHAST	A3	Unbiased HAST	110C	264 Hours	-	3/231/0	-	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	3/231/0	-
TC	A4	Temperature Cycle	-65/150C	500 Cycles	-	3/231/0	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	3/231/0	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	2/154/0	3/231/0	-
HTOL	B1	CL (FF)	125C	1000 Hours	-	1/45/0	-	-
HTOL	B1	CL (FS)	125C	1000 Hours	-	1/32/0	-	-
HTOL	B1	CL (SF)	125C	1000 Hours	-	1/32/0	-	-
HTOL	B1	CL (SS)	125C	1000 Hours	-	1/45/0	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	3/231/0	1/77/0	-
ELFR	B2	ELFR	125C	48 Hours	-	3/2999/0	-	-

Type	#	Test Name	Condition	Duration	Qual Device: PCF8574RGTR	QBS Reference: TPS53605DSQR	QBS Reference: TPS25740BRGER	QBS Reference: PCF8574PWR
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	1/22/0	3/66/0	-	1/22
PD	C4	Physical Dimensions	(per mechanical drawing)	-	-	3/90/0	-	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	3/9/0	1/3/0	1/3
ESD	E2	ESD HBM	-	1000 Volts	-	3/9/0	1/3/0	1/3
LU	E4	LU	Per JESD78	-	-	3/18/0	-	-
LU	E4	Latch-Up	Per JESD78	-	-	-	1/3/0	1/3
CHAR	E5	Electrical Characterization	Min, Typ, Max Temp	-	1/30/0	3/90/0	1/30/0	1/30
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	3/90/0	1/30/0	1/30

- QBS: Qual By Similarity
- Qual Device PCF8574RGTR is qualified at MSL2 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-2403-081

For questions regarding this notice, e-mails can be sent to the Change Management team or your local Field Sales Representative.