12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20250404000.2
Qualification of LFAB as an additional Wafer Fab site option for select devices
Change Notification / Sample Request

Date: April 04, 2025
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 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.

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.

TI values customer engagement and feedback related to TI changes. Customers should contact TI if there are questions or concerns regarding a change notification.

Sincerely,

Change Management Team
SC Business Services

20250404000.2
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
F280048CPMQR	F280048CPMQR
F280041CPZQR	F280041CPZQR
F280049PZQ	F280049PZQ
F280049CPZQR	F280049CPZQR
F280040CPMQR	F280040CPMQR
F280040PMQR	F280040PMQR
F280041PZQR	F280041PZQR
F280048PMQR	F280048PMQR
F280049PZQR	F280049PZQR

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

PCN Number:	20250404000.2	**PCN Date:**	April 04, 2025
Title:	Qualification of LFAB as an additional Wafer Fab site option for select devices		
Customer Contact:	Change Management Team	**Dept:**	Quality Services
Proposed 1st Ship Date:	October 01, 2025	**Sample requests accepted until:**	June 03, 2025*

***Sample requests received after June 03, 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 Material
☒	Packing/Shipping/Labeling	☐	Test Process	☒	Wafer Fab Process

PCN Details

Description of Change:

Texas Instruments is pleased to announce the addition of LFAB as a Wafer Fab site option for the products listed in the "Product Affected" section of this document.

Current Fab Site			Additional Fab Site		
Current Fab Site	**Process**	**Wafer Diameter**	**Additional Fab Site**	**Process**	**Wafer Diameter**
TSMC-F14	F021	300mm	LFAB	F65	300mm

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

Qual details are provided in the Qual Data Section.

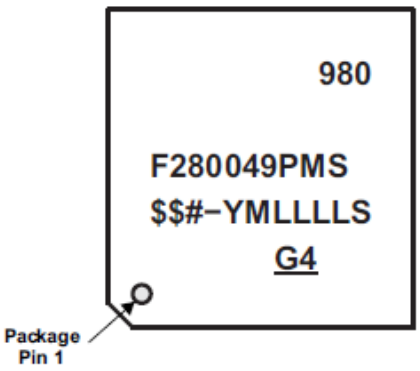
Reason for Change:

Continuity of Supply

Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):

None

Changes to product identification resulting from this PCN:



YMLLLLS = Lot Trace Code

YM = 2-Digit Year/Month Code
LLLL = Assembly Lot
S = Assembly Site Code
980 = TI E.I.A. Code
$$ = Wafer Fab Code (one or two characters) as applicable
 # = Silicon Revision Code

G4 = Green (Low Halogen and RoHS-compliant)

Original Wafer Fab Code:
$$ = YF → TSMC-F14

Updated Wafer Fab Code:
$$ = YF → TSMC-F14
Or
$$ = 3L → LFAB

Original Silicon Revision Code:

= B

Updated Silicon Revision Code:

= B

Or

= D

Fab Site Information:

Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
TSMC-F14	T14	TWN	Tainan City
LFAB	**LHI**	**USA**	**Lehi**

Die Rev:

Current	**New**
Die Rev [2P]	**Die Rev [2P]**
B	**D**

Sample product shipping label (not actual product label)

Product Affected:

F280040CPMQR	F280041PZQR	F280048PMQR	F280049PZQR
F280040PMQR	F280047PZQR	F280049CPZQR	
F280041CPZQR	F280048CPMQR	F280049PZQ	

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

F28004x family of microcontrollers - addition of LFAB wafer fab
Approve Date 23-JANUARY -2025

Product Attributes

Attributes	Qual Device: F280048CPMQR	Qual Device: F280049CPZQR	Qual Device: F280049CRSHSR	QBS LFAB Process Reference: TMS320F28379SPTPQ
Automotive Grade Level	Grade 1	Grade 1	Industrial grade	Grade 1
Operating Temp Range (C)	-40 to 125	-40 to 125	-40 to 125	-40 to 125
Product Function	Microprocessor	Microprocessor	Microprocessor	Microprocessor
Wafer Fab Supplier	LFAB	LFAB	LFAB	LFAB
Assembly Site	PHI	PHI	CLARK-AT	PHI
Package Group	QFP	QFP	QFN	QFP
Package Designator	PM	PZ	RSH	PTP
Pin Count	64	100	56	176

- QBS: Qual By Similarity, also known as Generic Dat

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: F280048CPMQR	Qual Device: F280049CPZQR	Qual Device: F280049CRSHSR	QBS LFAB Wafer Process Qualification: TMS320F28379SPTPQ
Test Group A - Accelerated Environment Stress Tests											
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL3 260C	-	QBS	QBS	QBS	3/462/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	110C/85%RH	264 Hours	QBS	QBS	QBS	3/231/0
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Unbiased HAST	130C/85%RH	96 Hours	QBS	QBS	QBS	3/231/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	QBS	QBS	QBS	3/231/0
TC-BP	A4	MIL-STD883 Method 2011	1	5	Post Temp Cycle Bond Pull	-	-	QBS	QBS	QBS	1/5/0
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	150C	1000 Hours	QBS	QBS	QBS	3/135/0
Test Group B - Accelerated Lifetime Simulation Tests											
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	125C	1000 Hours	QBS	QBS	QBS	3/231/0
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate	125C	48 Hours	QBS	QBS	QBS	3/2400/0
EDR	B3	AEC Q100-005	3	77	NVM Endurance, Data Retention, and Operational Life	155C	1000 Hours	QBS	QBS	QBS	3/231/0
Test Group C - Package Assembly Integrity Tests											

Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: F280048CPMQR	Qual Device: F280049CPZQR	Qual Device: F280049CRSHSR	QBS LFAB Wafer Process Qualification: TMS320F28379SPTPQ
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	QBS	1/30/0	QBS	3/90/0
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	QBS	1/30/0	QBS	3/90/0
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
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
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
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
SM	D5	-	-	-	Stress Migration	-	-	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	
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	750 Volts	1/3/0	1/3/0	1/3/0	
LU	E4	AEC Q100-004	1	3	Latch-Up	Per AEC Q100-004	-	1/3/0	1/3/0	1/3/0	

Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: F280048CPMQR	Qual Device: F280049CPZQR	Qual Device: F280049CRSHSR	QBS LFAB Wafer Process Qualification: TMS320F28379SPTPQ
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	3/90/0	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-2401-119

ZVEI ID: SEM-DE-01, SEM-PW-09, SEM-PW-13

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

IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY

INFORMATION, AND OTHER RESOURCES “AS IS” AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI’s products are provided subject to TI’s Terms of Sale (www.ti.com/legal/termsofsale.html) or other applicable terms available either on ti.com or provided in conjunction with such TI products. TI’s provision of these resources does not expand or otherwise alter TI’s applicable warranties or warranty disclaimers for TI products.