



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20240613008.1

**Qualification of RFAB using qualified Process Technology, Die Revision, and additional Assembly Site (CDAT) & BOM options for select devices
Change Notification / Sample Request**

Date: June 13, 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

20240613008.1
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
LM4040BIM7-2.0/NOPB	NULL
LM4040BIM7-2.5/NOPB	NULL
LM4040BIM7-5.0/NOPB	NULL
LM4040BIM7X-2.5/NOPB	NULL
LM4040CIM7-2.0/NOPB	NULL
LM4040CIM7-2.5/NOPB	NULL
LM4040DIM7-2.5/NOPB	NULL
LM4040DIM7-5.0/NOPB	NULL
LM4040EIM7-2.0/NOPB	NULL
LM4041BIM7-1.2/NOPB	NULL
LM4041BIM7X-1.2/NOPB	NULL
LM4041CIM7-1.2/NOPB	NULL
LM4041CIM7X-1.2/NOPB	NULL
LM4041DIM7-1.2/NOPB	NULL
LM4041EIM7-1.2/NOPB	NULL

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

PCN Number:	20240613008.1		PCN Date:	June 13, 2024	
Title:	Qualification of RFAB using qualified Process Technology, Die Revision, and additional Assembly Site (CDAT) & BOM options for select devices				
Customer Contact:	Change Management Team		Dept:	Quality Services	
Proposed 1st Ship Date:	September 11, 2024		Sample requests accepted until:	July 13, 2024*	
*Sample requests received after July 13, 2024 will not be supported.					
Change Type:					
<input checked="" type="checkbox"/>	Assembly Site	<input checked="" type="checkbox"/>	Design	<input type="checkbox"/>	Wafer Bump Material
<input checked="" type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet	<input type="checkbox"/>	Wafer Bump Process
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change	<input checked="" type="checkbox"/>	Wafer Fab Site
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Test Site	<input checked="" type="checkbox"/>	Wafer Fab Material
<input checked="" type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<input checked="" type="checkbox"/>	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 (CDAT) & 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	LFAST	150 mm	RFAB	LBC9	300 mm
GFAB	LFAST	150 mm			
GFAB	LFAST	200 mm			
The die was also changed as a result of the process change.					
Construction differences are as follows:					
	TIEMA	CDAT			
Bond wire diam/type	0.9mil Au, 0.96mil Cu	0.8mil Cu			
Mount compound	8075531	4207123			
Mold compound	8095181	4222198			
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		
<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> 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		

GFAB6	GF6	GBR	Greenock
GFAB8	GF8	GBR	Greenock
RFAB	RFB	USA	Richardson

Die Rev:

Current

New

Die Rev [2P]	Die Rev [2P]
A, B, D, E, -	A

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
TIEM	CU6	MYS	Melaka
CDAT	CDA	CHN	Chengdu

Sample product shipping label (not actual product label):


TEXAS INSTRUMENTS
 MADE IN: Malaysia
 2DC: 2Q:


G4



(1P) **SN74LS07NSR**
 (Q) **2000** (D) **0336**
 (31T) LOT: 3959047MLA
 (4W) TKY (1T) 7523483SI2
 (P)
 (2P) REV: (V) **0033317**
 (20L) CS0: SHE (21L) CC0: **USA**
 (22L) AS0: MLA (23L) AC0: **MYS**

OPT:
 ITEM: 39
LBL: 5A (L)T0:1750

Product Affected:

LM4040BIM7-2.0/NOPB	LM4040CIM7-2.5/NOPB	LM4040EIM7-2.0/NOPB	LM4041DIM7-1.2/NOPB
LM4040BIM7-2.5/NOPB	LM4040CIM7X-2.5/NOPB	LM4041BIM7-1.2/NOPB	LM4041DIM7X-1.2/NOPB
LM4040BIM7-5.0/NOPB	LM4040DIM7-2.0/NOPB	LM4041BIM7X-1.2/NOPB	LM4041EIM7-1.2/NOPB
LM4040BIM7X-2.5/NOPB	LM4040DIM7-2.5/NOPB	LM4041CIM7-1.2/NOPB	LM4041EIM7X-1.2/NOPB
LM4040CIM7-2.0/NOPB	LM4040DIM7-5.0/NOPB	LM4041CIM7X-1.2/NOPB	

For alternate parts with similar or improved performance, please visit the product page on [TI.com](https://www.ti.com)

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: PLM405050DCKRQ1	QBS Product Reference: LM4040QAIM3-5.0/NO	QBS Package, Process Reference: TPS3840PH30DBVRQ1	QBS Package Reference: TXS0101QDCKRQ1
Test Group A - Accelerated Environment Stress Tests											
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL1 260C	-	-	1/77/0	3/0/0	3/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	-	1/77/0	3/231/0	3/231
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Autoclave	121C/15psig	96 Hours	-	-	3/231/0	-
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Unbiased HAST	130C/85%RH	96 Hours	-	1/77/0	-	3/231
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	-	1/77/0	3/231/0	3/231
TC-BP	A4	MIL-STD883 Method 2011	1	5	Post Temp Cycle Bond Pull	-	-	-	-	1/5/0	-
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	150C	1000 Hours	-	1/45/0	3/135/0	3/135
Test Group B - Accelerated Lifetime Simulation Tests											
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	125C	1000 Hours	-	3/231/0 ^{1,2}	3/231/0	1/77
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	-	1/30/0	3/90/0	3/90
Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: PLM405050DCKRQ1	QBS Product Reference: LM4040QAIM3-5.0/NO	QBS Package, Process Reference: TPS3840PH30DBVRQ1	QBS Package Reference: TXS0101QDCKRQ1
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	-	1/30/0	3/90/0	3/90
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
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions	Cpk>1.67	-	-	1/10/0	3/30/0	3/30
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

Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: PLM405050DCKRQ1	QBS Product Reference: LM4040QAIM3-5.0/NQ	QBS Package, Process Reference: TPS3840PH30DBVRQ1	QBS Package Reference: TXS0101QDCKRQ1
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	1000 Volts	1/3/0	1/3/0	-	1/3
LU	E4	AEC Q100-004	1	6	Latch-Up	Per AEC Q100-004	-	-	1/6/0	-	1/6
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	3/90/0	3/90/0	3/90
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-2401-118

[1]-Failures due to bent/broken leads

[2]-failures were due to non-bin 1 units submitted to stress

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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