



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20241119006.1

**Qualification of DFAB as an additional Wafer Fab site option for select devices
Change Notification / Sample Request**

Date: November 20, 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.

Changes outlined in this notification underscore our commitment to product longevity and supply continuity, as well as our continued efforts to transition to newer, more efficient manufacturing processes and technologies. Specifically, this particular notification is related to TI's multiyear transition plan for our two remaining 150-millimeter production lines (DFAB in Dallas, Texas, and SFAB in Sherman, Texas). SFAB closure activities are expected to begin by the end of 2025. DFAB will remain open with a smaller set of 200mm technologies and GaN.

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

20241119006.1
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
CD4017BNSR	NULL
CD40106BM96E4	NULL
CD4541BM	NULL
CD4020BNSR	NULL
CD4049UBDW	NULL
CD4073BPWR	NULL
CD4072BPW	NULL
CD4093BNSRG4	NULL
CD4072BPWG4	NULL
CD4073BNSR	NULL
CD4520BPWR	NULL
CD4020BPWR	NULL
CD4093BNSR	NULL
CD4049UBDWG4	NULL
CD4081BNSR	NULL
CD4541BMT	NULL
CD4541BNSR	NULL

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

PCN Number:	20241119006.1	PCN Date:	November 20, 2024																		
Title:	Qualification of DFAB as an additional Wafer Fab site option for select devices																				
Customer Contact:	Change Management Team	Dept:	Quality Services																		
Proposed 1st Ship Date:	February 18, 2025	Sample requests accepted until:	December 20, 2024*																		
*Sample requests received after December 20, 2024 will not be supported.																					
Change Type:																					
<input type="checkbox"/> Assembly Site	<input type="checkbox"/> Design	<input type="checkbox"/> Wafer Bump Material																			
<input type="checkbox"/> Assembly Process	<input type="checkbox"/> Data Sheet	<input type="checkbox"/> Wafer Bump Process																			
<input 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 type="checkbox"/> Wafer Fab Process																			
PCN Details																					
Description of Change:																					
Texas Instruments is pleased to announce the addition of DFAB as an additional Wafer Fab site option for the products listed in the "Product Affected" section of this document.																					
<table border="1"> <thead> <tr> <th colspan="3">Current Fab Site</th><th colspan="3">Additional Fab Site</th></tr> <tr> <th>Fab Site</th><th>Process</th><th>Wafer Diameter</th><th>Fab Site</th><th>Process</th><th>Wafer Diameter</th></tr> </thead> <tbody> <tr> <td>SFAB</td><td>CD4K</td><td>150 mm</td><td>DFAB</td><td>CD4K</td><td>200 mm</td></tr> </tbody> </table>				Current Fab Site			Additional Fab Site			Fab Site	Process	Wafer Diameter	Fab Site	Process	Wafer Diameter	SFAB	CD4K	150 mm	DFAB	CD4K	200 mm
Current Fab Site			Additional Fab Site																		
Fab Site	Process	Wafer Diameter	Fab Site	Process	Wafer Diameter																
SFAB	CD4K	150 mm	DFAB	CD4K	200 mm																
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 and 200-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																					
Changes to product identification resulting from this PCN:																					
Fab Site Information:																					
<table border="1"> <thead> <tr> <th>Chip Site</th><th>Chip Site Origin Code (20L)</th><th>Chip Site Country Code (21L)</th><th>Chip Site City</th></tr> </thead> <tbody> <tr> <td>SH-BIP-1</td><td>SHE</td><td>USA</td><td>Sherman</td></tr> <tr> <td>DL-LIN</td><td>DLN</td><td>USA</td><td>Dallas</td></tr> </tbody> </table>				Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City	SH-BIP-1	SHE	USA	Sherman	DL-LIN	DLN	USA	Dallas						
Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City																		
SH-BIP-1	SHE	USA	Sherman																		
DL-LIN	DLN	USA	Dallas																		
Sample product shipping label (not actual product label):																					
<p> TEXAS INSTRUMENTS MADE IN: Malaysia 2DC: 20: MSL '2 /260C/1 YEAR SEAL DT MSL 1 /235C/UNLIM 03/29/04 OPT: 39 ITEM: 39 LBL: 5A (L)T0:1750 (1P) SN74LS07NSR (Q) 2000 (D) 0336 (31T) LOT: 3959047MLA (4W) TKY (1T) 7523483SI2 (P) (2P) REV: (V) 0033317 (20L) CSO: SHE (21L) CCO:USA (22L) ASO: MLA (23L) ACO: MYS </p>																					
Product Affected:																					
CD40106BM96E4	CD4049UBDWG4	CD4093BNSR	CD4541BMTG4																		
CD40106BM96G4	CD4072BPW	CD4093BNSRG4	CD4541BNSR																		
CD4017BNSR	CD4072BPWG4	CD4520BNSR	CD4541BPW																		
CD4020BNSR	CD4073BNSR	CD4520BPWR																			

CD4020BPWR	CD4073BPWR	CD4541BM
CD4049UBDW	CD4081BNSR	CD4541BMT

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: MSA00300PWR
Test Group A - Accelerated Environment Stress Tests								
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL1 260C	-	3/0/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	3/231/0
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Unbiased HAST	130C/85%RH	96 Hours	3/231/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	3/231/0
TC-BP	A4	MIL-STD883 Method 2011	1	5	Post Temp Cycle Bond Pull	-	-	1/5/0
TC-SAM	A4	-	3	3	Post TC SAM	<50% delamination	-	3/36/0
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	150C	1000 Hours	1/45/0
Test Group B - Accelerated Lifetime Simulation Tests								
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	125C	1000 Hours	3/231/0
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate	125C	48 Hours	3/2400/0
Test Group C - Package Assembly Integrity Tests								
SD	C3	JEDEC J-STD-002	1	15	PB Solderability	>95% Lead Coverage	-	1/15/0
SD	C3	JEDEC J-STD-002	1	15	PB-Free Solderability	>95% Lead Coverage	-	1/15/0
Test Group D - Die Fabrication Reliability Tests								
EM	D1	JESD61	-	-	Electromigration	-	-	Completed Per Process Technology Requirements
Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: MSA00300PWR
TDDb	D2	JESD35	-	-	Time Dependent Dielectric Breakdown	-	-	Completed Per Process Technology Requirements
HCI	D3	JESD60 & 28	-	-	Hot Carrier Injection	-	-	Completed Per Process Technology Requirements
BTI	D4	-	-	-	Bias Temperature Instability	-	-	Completed Per Process Technology Requirements
SM	D5	-	-	-	Stress Migration	-	-	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
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	750 Volts	1/3/0
LU	E4	AEC Q100-004	1	6	Latch-Up	Per AEC Q100-004	-	1/6/0
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	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

- QBS: Qual By Similarity
- Qual Device MSA00300PWR is qualified at MSL1 260C

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-2203-040

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: CD4060BPWR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	3/231/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	3/231/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	3/231/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	1/77/0
HTOL	B1	Life Test	125C	1000 Hours	1/77/0
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 CD4060BPWR is qualified at MSL1 260C
- Qual Device CD4060BPWR 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-2208-043

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.