



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20231219007.1

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

Date: December 22, 2023

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

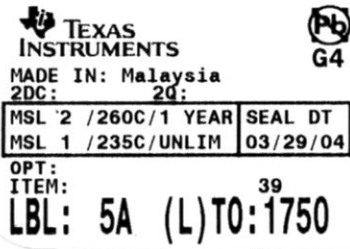
20231219007.1
Attachment: 1

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
CD4021BM96	null

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

PCN Number:	20231219007.1	PCN Date:	December 22, 2023		
Title:	Qualification of DFAB as an additional Fab Site option for select devices				
Customer Contact:	Change Management team	Dept:	Quality Services		
Proposed 1st Ship Date:	Mar 20, 2024	Estimated Sample Availability:	Jan 20, 2024*		
*Sample requests received after January 20, 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 Materials			
☒ Packing/Shipping/Labeling	☐ Test Process	☐ Wafer Fab Process			
PCN Details					
Description of Change:					
Texas Instruments is pleased to announce the qualification of DFAB 200mm as an additional wafer fab option for the devices listed below in the product affected section.					
Current Fab Site			Additional Fab Site		
Current Fab Site	Process	Wafer Diameter	Additional Fab Site	Process	Wafer Diameter
SFAB	CD4000	150 mm	DFAB	CD4000	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 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:					
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)					
  (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					
Product Affected:					
CD14538BE	CD4024BEE4	CD4049UBPWR	CD4081BME4		
CD14538BM96	CD4024BM96	CD4050BDR	CD4081BMG4		
CD14538BNSR	CD4024BPWR	CD4050BE	CD4081BPWR		

CD14538BPWR	CD4030BE	CD4050BEE4	CD4094BE
CD14538BPWRG4	CD4030BEE4	CD4050BNSR	CD4094BEE4
CD4001BE	CD4030BM96	CD4050BPWR	CD4094BNSR
CD4001BEE4	CD4030BM96G4	CD4056BM96	CD4094BPWR
CD4001BM	CD4042BDR	CD4069UBE	CD4098BE
CD4001BM96	CD4042BDRG4	CD4069UBEE4	CD4098BEE4
CD4001BM96E4	CD4042BE	CD4069UBM	CD4098BM96
CD4001BM96G4	CD4042BEE4	CD4069UBM96	CD4098BM96G4
CD4001BPWR	CD4043BDR	CD4069UBNSR	CD4511BE
CD40107BE	CD4043BDRG4	CD4069UBPWR	CD4511BEE4
CD40107BM	CD4043BDWR	CD4070BE	CD4511BNSR
CD40107BM96	CD4043BE	CD4070BEE4	CD4511BNSRG4
CD4011BE	CD4043BEE4	CD4070BM96	CD4511BPWR
CD4011BEE4	CD4043BPWR	CD4070BM96E4	CD4512BE
CD4011BM	CD4044BDR	CD4070BPWR	CD4512BEE4
CD4011BM96	CD4044BE	CD4071BE	CD4512BM96
CD4011BM96E4	CD4044BEE4	CD4071BEE4	CD4512BM96G4
CD4011BME4	CD4044BNSR	CD4071BM96	CD4514BM96
CD4011BNSR	CD4044BPWR	CD4072BE	CD4515BM96
CD4011BPWR	CD4046BE	CD4072BM96	CD4517BE
CD4011BPWRG4	CD4046BEE4	CD4072BM96G4	CD4520BE
CD4014BE	CD4046BNSR	CD4072BNSR	CD4520BEE4
CD4014BM96	CD4046BNSRE4	CD4073BE	CD4520BM96
CD4021BE	CD4047BE	CD4073BEE4	CD4536BE
CD4021BEE4	CD4047BEE4	CD4073BM96	CD4536BEE4
CD4021BM96	CD4047BM96	CD4077BE	CD4536BNSR
CD4021BM96E4	CD4047BM96G4	CD4078BM96	CD4543BE
CD4021BPWR	CD4047BPWR	CD4078BPWR	CD4543BEE4
CD4023BE	CD4049UBDR	CD4078BPWRE4	CD4543BM96
CD4023BEE4	CD4049UBDRE4	CD4081BE	CD4555BM96
CD4023BM96	CD4049UBDRG4	CD4081BEE4	CD4555BPWR
CD4023BNSR	CD4049UBE	CD4081BM	CD4555BPWRG4
CD4023BPWR	CD4049UBEE4	CD4081BM96	
CD4024BE	CD4049UBNSR	CD4081BM96G4	

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
- 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

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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