

PCN# 20240529004.1**Qualification of RFAB using qualified Process Technology, Die Revision, Datasheet update and additional Assembly Site/BOM options for select devices
Change Notification / Sample Request****Date:** May 29, 2024**To:**

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

20240529004.1
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
CD4016BE	NULL
CD4016BM96	NULL
CD4066BE	NULL
CD4066BM96	NULL
CD4066BNSR	NULL
CD4066BPWR	NULL

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

PCN Number:	20240529004.1	PCN Date:	May 29, 2024
Title:	Qualification of RFAB using qualified Process Technology, Die Revision, Datasheet update and additional Assembly Site/BOM options for select devices		
Customer Contact:	Change Management Team	Dept:	Quality Services
Proposed 1st Ship Date:	August 27, 2024	Sample requests accepted until:	June 28, 2024*

***Sample requests received after June 28, 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 checked="" 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 an Assembly site/BOM options for the devices listed below.

Current Fab Site			Additional Fab Site		
Fab Site	Process	Wafer Diameter	Fab Site	Process	Wafer Diameter
SFAB	CD4000	150 mm	RFAB	LBC9	300 mm

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

Construction differences are as follows:

Group 1 device: (14N)

	JCETCZ	FMX	MLA (old)	MLA (new)
Wire diam/type	1.0mil Cu	0.96mil Cu	0.96mil Au, 0.96mil Cu	0.8mil Cu
Mount compound	11204001701	4147858	4042500, 4147858	4147858
Mold compound	131010100248	4211880	4042503, 4211880	4211880
Lead finish	Matte Sn	NiPdAu	NiPdAu	NiPdAu

Group 2 device: (14D)

	AESH	FMX	MLA (old)	MLA (new)
Wire diam/type	1.0mil Cu, 0.8mil Au	0.96mil Cu	0.96mil Cu	0.8mil Cu
Mount compound	EY1000063	4147858	4147858	4147858
Mold compound	EN2000511	4211880	4211880	4211880
Lead finish	Matte Sn	NiPdAu	NiPdAu	NiPdAu

Group 3 device: (14NS)

	MLA (old)	MLA (new)
Wire diam/type	0.96mil Cu	0.8mil Cu

Group 4 device: (14PW)

	AESH	MLA (old)	MLA (new)
Wire diam/type	1.0mil Cu	0.96mil Cu	0.8mil Cu
Mount compound	EY1000063	4147858	4147858
Mold compound	EN2000508	4211471	4211471
Lead finish	Matte Sn	NiPdAu	NiPdAu

The datasheets will be changing as a result of the above mentioned changes. The datasheet change details can be reviewed in the datasheet revision history. The links to the revised datasheets are available in the table below.



Changes from Revision C (September 2003) to Revision D (May 2024)	Page
• Increased IDD max/typ for the lower Temperature cases.....	5
• Changed typical IIH to 0.5µA.....	5
• Changed typical IIL to -0.1µA.....	5



Changes from Revision H (January 2020) to Revision I (May 2024)	Page
• Changed <i>Package Information</i> table to include package leads.....	1
• Changed the numbering format for tables, figures, and cross-references throughout the document.....	1
• Deleted the <i>J (CDIP, 14)</i> package from the data sheet.....	1
• Changed max and typ IDD for lower supply voltages.....	4
• Changed VIL from 2V to 1V across supply.....	4

Product Folder	Current Datasheet Number	New Datasheet Number	Link to full datasheet
CD4016B	SCHS026C	SCHS026D	http://www.ti.com/product/CD4016B
CD4066B	SCHS051H	SCHS051I	http://www.ti.com/product/CD4066B

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
RFAB	RFB	USA	Richardson

Die Rev:

Current	New
Die Rev [2P]	Die Rev [2P]
- , A	-

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
JCETCZ	JCC	CHN	Chuzhou
FMX	MEX	MEX	Aguascalientes
ASESH	ASH	CHN	Shanghai
MLA	MLA	MYS	Kuala Lumpur

Sample product shipping label (not actual product label):

Product Affected:

Group 1 device: Wafer fab, Design, Assembly site, BOM

CD4016BE	CD4016BEE4	CD4066BE	CD4066BEE4
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Group 2 device: Wafer fab, Design, Assembly site, BOM

CD4016BM96	CD4066BM96
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Group 3 device: Wafer fab, Design, BOM

CD4066BNSR

Group 4 device: Wafer fab, Design, Assembly site, BOM

CD4066BPWR

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: CD4066BPWR	QBS Reference (Package): SN74HCS74QPWRQ1	QBS Reference (Process): PCM6260QRTVRQ1	QBS Reference (Product): CD4051BPWR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	3/231/0	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	3/231/0	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	3/2400/0	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	1/15/0	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	1/15/0	-	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	3/30/0	-	-
ESD	E2	ESD CDM	-	1500 Volts	1/3/0	-	-	-
ESD	E2	ESD HBM	-	500 Volts	1/3/0	-	-	-

Type	#	Test Name	Condition	Duration	Qual Device: CD4066BPWR	QBS Reference (Package): SN74HCS74QPWRQ1	QBS Reference (Process): PCM6260QRTVRQ1	QBS Reference (Product): CD4051BPWR
LU	E4	Latch-Up	Per JESD78	-	1/3/0	-	-	1/3/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	-	1/30/0

- QBS: Qual By Similarity
- Qual Device CD4066BPWR 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-2303-050

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: CD4016BE	Qual Device: CD4016BM96	Qual Device: CD4066BE	Qual Device: CD4066BNSR	Qual Device: CD4066BM96	QBS Reference (Package): SN74HC595N	QBS Reference (Process): SN74HCS74QPWRQ1	QBS Reference (Package): MC33063ADR	QBS Reference (Package): ULN2003ANSR	QBS Reference (Product): CD4066BPWR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	-	-	-	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	1/77/0	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	-	-	3/231/0	-	3/231/0	1/77/0	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	-	-	-	3/231/0	-	3/231/0	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	-	-	-	3/231/0	-	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	-	-	-	3/2400/0	-	-	-
SD	C3	PB-Free Solderability	8 Hours Steam Age	-	-	-	-	-	-	3/66/0	-	-	-	-
ESD	E2	ESD CDM	-	1500 Volts	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	-	-	-	-	1/3/0
ESD	E2	ESD HBM	-	500 Volts	-	1/3/0	-	-	-	-	-	-	-	1/3/0
LU	E4	Latch-Up	Per JESD78	-	-	1/3/0	-	-	-	-	-	-	-	1/3/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	1/30/0	1/30/0	1/30/0	-	-	-	-	1/30/0

- QBS: Qual By Similarity
- Qual Device CD4016BE is qualified at NOT CLASSIFIED NOT CLASSIFIED
- Qual Device CD4016BM96 is qualified at MSL1 260C
- Qual Device CD4066BE is qualified at NOT CLASSIFIED NOT CLASSIFIED
- Qual Device CD4066BNSR is qualified at MSL1 260C

- Qual Device CD4066BM96 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-2401-090

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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