



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN#20250304001.1
CD405x Die Revision Change and Datasheet Update
Change Notification / Sample Request

Date: March 04, 2025

To: Newark/Farnell 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

20250304001.1
Change Notification / Sample Request
Attachments

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
CD4051BE	NULL
CD4052BE	NULL

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

PCN Number:	20250304001.1	PCN Date:	March 04, 2025														
Title:	CD405x Die Revision Change and Datasheet Update																
Customer Contact:	Change Management team	Dept:	Quality Services														
Proposed 1st Ship Date:	June 02, 2025	Sample requests accepted until:	May 03, 2025*														
*Sample requests received after May 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 Materials												
☐	Packing/Shipping/Labeling	☐	Test Process	☐	Wafer Fab Process												
PCN Details																	
Description of Change:																	
This notification is to inform of a design change to the CD405x family of devices. This is a design change to improve electrical behavior at 5V and lower operation.																	
The product datasheet is updated as seen in the change revision history below:																	
 CD4051B, CD4052B, CD4053B SCHS047N – AUGUST 1998 – REVISED FEBRUARY 2025																	
<table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">Changes from Revision M (November 2024) to Revision N (February 2025)</th> <th style="text-align: right;">Page</th> </tr> </thead> <tbody> <tr> <td>• Updated Section 1</td> <td style="text-align: right;">1</td> </tr> <tr> <td>• Removed Figure 5-4 and Figure 5-5.....</td> <td style="text-align: right;">11</td> </tr> <tr> <td>• Updated Section 7.1</td> <td style="text-align: right;">15</td> </tr> <tr> <td>• Updated Section 7.3</td> <td style="text-align: right;">17</td> </tr> <tr> <td>• Updated Figure 8-1 to 5V VDD.....</td> <td style="text-align: right;">19</td> </tr> </tbody> </table>						Changes from Revision M (November 2024) to Revision N (February 2025)	Page	• Updated Section 1	1	• Removed Figure 5-4 and Figure 5-5.....	11	• Updated Section 7.1	15	• Updated Section 7.3	17	• Updated Figure 8-1 to 5V VDD.....	19
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Product Folder	Current Datasheet Number	New Datasheet Number	Link to full datasheet														
CD405xB	SCHS047M	SCHS047N	http://www.ti.com/product/CD4051B														
Qual details are provided in the Qual Data Section.																	
Reason for Change:																	
To improve low voltage operation																	
Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):																	
Improved low voltage operation																	
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													
☒ No Change		☒ No Change		☒ No Change													
Changes to product identification resulting from this PCN:																	
Die Rev designator will change as shown in the table and sample label below:																	
Current		New															

Die Rev [2P]

Die Rev [2P]

B

D

Sample product shipping label (not actual product label)

**Product Affected:**

CD4051BE	CD4052BE	CD4052BPWR	CD4053BNSR
CD4051BM96	CD4052BEE4	CD4053BE	CD4053BPWR
CD4051BNSR	CD4052BM96	CD4053BEE4	
CD4051BPWR	CD4052BNSR	CD4053BM96	

Qualification Report
Approve Date 25-February-2025

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: CD4052BPWR	Qual Device: CD4053BPWR	QBS Reference: OPA2991QDGKRQ1	QBS Reference: TMUX4051PWRQ1	QBS Reference: TMUX4052PWRQ1	QBS Reference: CD4051BQPWRQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/2	2/154/0	1/77/0	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	3/231/0	-	-	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	2/154/0	1/77/0	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	3/231/0	2/154/0	1/77/0	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	2/90/0	1/45/0	-
HTSL	A6	High Temperature Storage Life	175C	630 Hours	-	-	3/135/0	-	-	-
HTOL	B1	Life Test	150C	408 Hours	-	-	3/231/1 ¹	-	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	3/2400/4 ²	-	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	1/15/0	-	-	-

Type	#	Test Name	Condition	Duration	Qual Device: CD4052BPWR	Qual Device: CD4053BPWR	QBS Reference: OPA2991QDGKRQ1	QBS Reference: TMUX4051PWRQ1	QBS Reference: TMUX4052PWRQ1	QBS Reference: CD4051BQPWRQ1
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	2/20/0	1/10/0	1/10/0
ESD	E2	ESD CDM	-	500 Volts	1/3/0	1/3/0	-	-	-	-
ESD	E2	ESD CDM	-	750 Volts	-	-	-	-	-	1/3/0
ESD	E2	ESD HBM	-	2000 Volts	1/3/0	1/3/0	1/3/0	-	-	1/3/0
LU	E4	Latch-Up	Per JESD78	-	1/3/0	1/3/0	1/6/0	-	-	1/3/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30	1/30	-	-	-	-
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	3/90/0	1/30/0	-	1/30/0

- QBS: Qual By Similarity, also known as Generic Data
- Qual Device CD4051BPWR is qualified at MSL1 260C
- Qual Device CD4052BPWR is qualified at MSL1 260C
- Qual Device CD4053BPWR 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-2408-043

[1]-One unit failed Vio due to bad BI socket contact.
[2]-Three units failed Vio due to bad BI socket contact
one EOS failure due to reverse-insertion - discounted.

Qualification Report

SWCH_LV Wave 1 (PDIP_N)
Approve Date 18-FEBRUARY -2025

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: CD4051BE	Qual Device: CD4052BE	Qual Device: CD4053BE	QBS Reference: OPA2991QDGKRQ1	QBS Reference: CD4051BE	QBS Reference: CD4052BE	QBS Reference: CD4053BE
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	3/229/0	-	-	-
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	175C	630 Hours	-	-	-	3/135/0	-	-	-
HTOL	B1	Life Test	150C	408 Hours	-	-	-	3/230/0	-	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	3/2396/0 ^A	-	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	-	-	-

Type	#	Test Name	Condition	Duration	Qual Device: CD4051BE	Qual Device: CD4052BE	Qual Device: CD4053BE	QBS Reference: OPA2991QDGKRQ1	QBS Reference: CD4051BE	QBS Reference: CD4052BE	QBS Reference: CD4053BE
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	-	250 Volts	-	-	-	-	1/3/0	-	-
ESD	E2	ESD CDM	-	500 Volts	1/3/0	1/3/0	1/3/0	-	-	-	-
ESD	E2	ESD HBM	-	1000 Volts	-	-	-	-	1/3/0	-	-
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	1/3/0	-	-	-
LU	E4	Latch-Up	Per JESD78	-	-	-	-	1/6/0	-	-	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	-	-	-	3/90/0	1/10/0	1/10/0	1/10/0

- QBS: Qual By Similarity, also known as Generic Data
- Qual Device CD4051BE is qualified at NOT CLASSIFIED NOT CLASSIFIED
- Qual Device CD4052BE is qualified at NOT CLASSIFIED NOT CLASSIFIED
- Qual Device CD4053BE is qualified at NOT CLASSIFIED NOT CLASSIFIED

- 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-2408-046

[A]-Three units failed Vio due to bad BI socket contact
one EOS failure due to reverse-insertion

Qualification Report Approve Date 25-February-2025

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: CD4051BNSR	Qual Device: CD4052BNSR	Qual Device: CD4053BNSR	QBS Reference: OPA2991QDGKRQ1	QBS Reference: SN74LV14ANSR	QBS Reference: TPS92622QDGNRQ1	QBS Reference: ULN2003ANSR	QBS Reference: CD4052BPWR	QBS Reference: CD4053BPWR	QBS Reference: CD4051BPWRQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	3/231/2	-	1/77/0	-	-	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	3/231/0	1/77/0	-	-	-	-	-
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	1/77/0	3/231/0	1/77/0	-	-	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	-	-	1/45/0	-	-	-	-
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	-	-	-	-	2/90/0	-	-	-	-
HTSL	A6	High Temperature Storage Life	175C	630 Hours	-	-	-	3/135/0	-	-	-	-	-	-
HTOL	B1	Life Test	150C	408 Hours	-	-	-	3/231/1 ¹	-	-	-	-	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	3/2400/4 ²	-	-	-	-	-	-
WBS	C1	Ball Shear	76 balls, 3 units min	Wires	-	-	-	-	1/76/0	-	-	-	-	-
WBP	C2	Bond Pull	76 Wires, 3 units min	Wires	-	-	-	-	1/76/0	-	-	-	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	-	1/15/0	-	-	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	-	1/15/0	-	-	-	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	-	3/30/0	-	3/30/0	-	-	-	1/10/0
ESD	E2	ESD CDM	-	500 Volts	1/3/0	1/3/0	1/3/0	-	1/3/0	1/3/0	-	1/3/0	1/3/0	-

Type	#	Test Name	Condition	Duration	Qual Device: CD4051BNSR	Qual Device: CD4052BNSR	Qual Device: CD4053BNSR	QBS Reference: OPA2991QDGKRQ1	QBS Reference: SN74LV14ANSR	QBS Reference: TPS92622QDGNRQ1	QBS Reference: ULN2003ANSR	QBS Reference: CD4052BPWR	QBS Reference: CD4053BPWR	QBS Reference: CD4051BQPWRQ1
ESD	E2	ESD CDM	-	750 Volts	-	-	-	-	-	1/3/0	-	-	-	1/3/0
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	1/3/0	-	1/3/0	-	1/3/0	1/3/0	1/3/0
LU	E4	Latch-Up	Per JESD78	-	-	-	-	1/6/0	-	1/6/0	-	1/3/0	1/3/0	1/3/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	-	-	-	-	1/30/0	-	1/5/0	1/30	1/30	-
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	-	3/90/0	-	1/30/0	-	-	-	1/30/0

- QBS: Qual By Similarity, also known as Generic Data
- Qual Device CD4051BNSR is qualified at MSL1 260C
- Qual Device CD4052BNSR is qualified at MSL1 260C
- Qual Device CD4053BNSR 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-2408-044

[1]-One unit failed Vio due to bad BI socket contact.
[2]-Three units failed Vio due to bad BI socket contact
one EOS failure due to reverse-insertion - discounted.

Qualification Report

Approve Date 18-FEBRUARY -2025

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: CD4051BM96	Qual Device: CD4052BM96	Qual Device: CD4053BM96	QBS Reference: OPA2991QDGKRQ1	QBS Reference: CD4051BM96	QBS Reference: CD4052BM96	QBS Reference: CD4053BM96	QBS Reference: MC33063ADR	QBS Reference: CD4051BQPWRQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	3/231/2	-	-	-	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	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	3/231/0	-	-	-	3/231/0	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	-	-	-	-	-	3/231/0	-
HTSL	A6	High Temperature Storage Life	175C	630 Hours	-	-	-	3/135/0	-	-	-	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	-	-	-	-	2/154/0	-
HTOL	B1	Life Test	150C	408 Hours	-	-	-	3/231/1 ¹	-	-	-	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	3/2400/4 ²	-	-	-	1/800/0	-
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	-	-	-	-	1/10/0

Type	#	Test Name	Condition	Duration	Qual Device: CD4051BM96	Qual Device: CD4052BM96	Qual Device: CD4053BM96	QBS Reference: OPA2991QDGKRQ1	QBS Reference: CD4051BM96	QBS Reference: CD4052BM96	QBS Reference: CD4053BM96	QBS Reference: MC33063ADR	QBS Reference: CD4051BQPWRQ1
ESD	E2	ESD CDM	-	500 Volts	1/3/0	1/3/0	1/3/0	-	-	-	-	-	-
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	1/3/0	-	-	-	-	1/3/0
LU	E4	Latch-Up	Per JESD78	-	-	-	-	1/6/0	-	-	-	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	-
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	-	3/90/0	-	-	-	-	1/30/0

- QBS: Qual By Similarity, also known as Generic Data
- Qual Device CD4051BM96 is qualified at MSL1 260C
- Qual Device CD4052BM96 is qualified at MSL1 260C
- Qual Device CD4053BM96 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-2408-045

[1]-One unit failed Vio due to bad BI socket contact.
[2]-Three units failed Vio due to bad BI socket contact
one EOS failure due to reverse-insertion - discounted.

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

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