PCN Number:	20240613005.1	PCN Date:	June 13, 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:	September 11, 2024	Sample requests accepted until:	July 13, 2024*

***Sample requests received after July 13, 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 Material
☒	Packing/Shipping/Labeling	☐	Test Process	☒	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/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	EPIC1S2	150 mm	RFAB	LBC7	300 mm

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

Construction differences are as follows:

Group 1 - BOM

	Current	Proposed
Wire diam/type	0.96mil Cu	0.8mil Cu

Group 2 - ASESH-MLA (PW)

	ASESH	MLA
Mount compound	EY1000063	4147858
Mold compound	EN2000508	4211471
Lead finish	Matte Sn	NiPdAu
ECAT	G3	G4

Group 3 - FMX/ASESH-MLA (D)

	FMX	ASESH	MLA
Wire type/diam	0.96mil Cu	0.8mil Cu	0.8mil Cu
Mount compound	4147858	EY1000063	4147858
Mold compound	4211880	EN2000506	4211880
Lead finish	NiPdAu	Matte Sn	NiPdAu
ECAT	G4	G3	G4

Group 4 - MLA-CDAT (RGY)

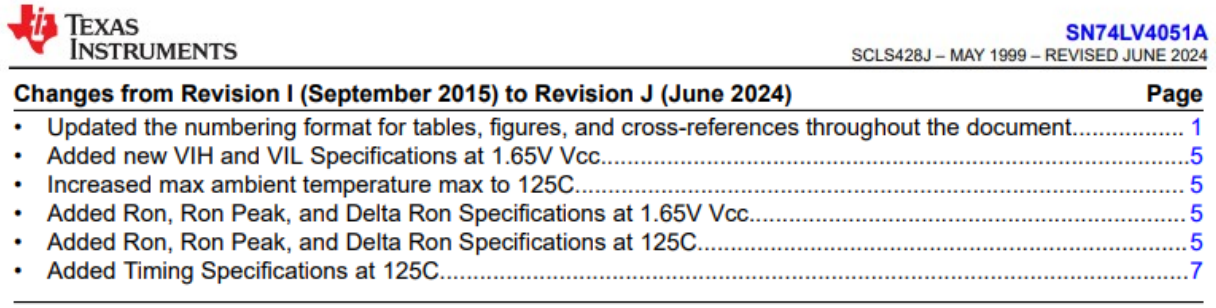
	MLA	CDAT
Wire type/diam	0.96mil Cu	0.8mil Cu
Mount compound	4205846	4207123
Mold compound	4208625	4222198

Group 5 - CRS-CDAT (RGY)

	CRS	CDAT

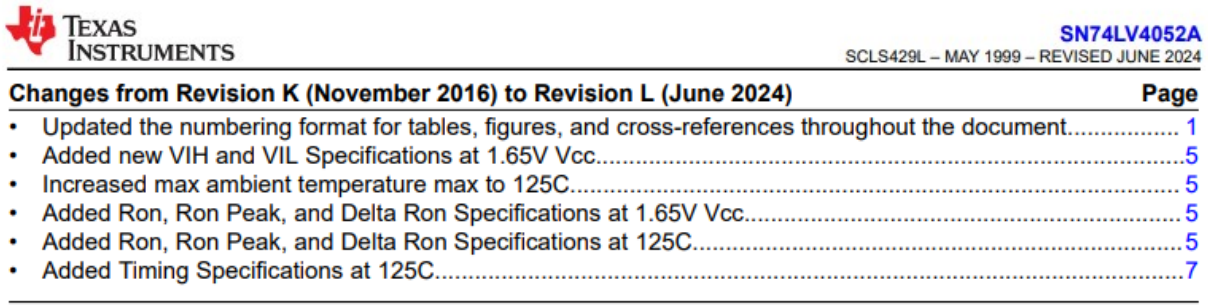
Wire type/diam	1.0mil Cu	0.8mil Cu
Mount compound	435143	4207123
Mold compound	435370	4222198

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.



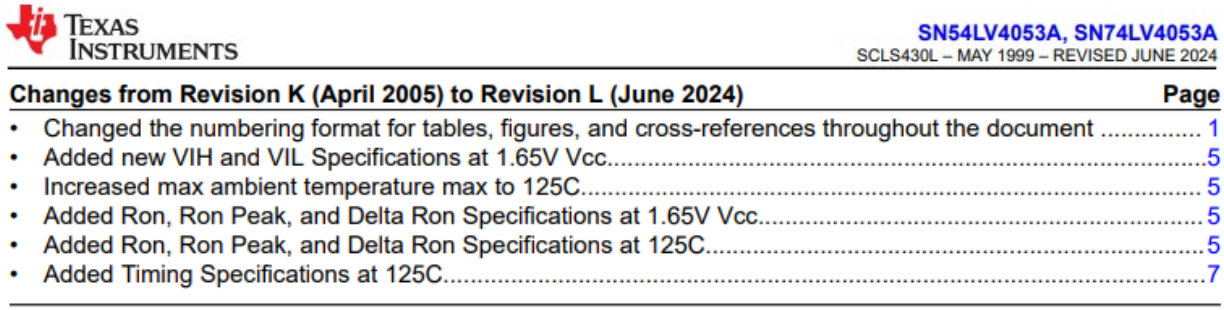
TEXAS INSTRUMENTS — SN74LV4051A
SCLS428J – MAY 1999 – REVISED JUNE 2024

Changes from Revision I (September 2015) to Revision J (June 2024)	Page
• Updated the numbering format for tables, figures, and cross-references throughout the document	1
• Added new VIH and VIL Specifications at 1.65V Vcc	5
• Increased max ambient temperature max to 125C	5
• Added Ron, Ron Peak, and Delta Ron Specifications at 1.65V Vcc	5
• Added Ron, Ron Peak, and Delta Ron Specifications at 125C	5
• Added Timing Specifications at 125C	7



TEXAS INSTRUMENTS — SN74LV4052A
SCLS429L – MAY 1999 – REVISED JUNE 2024

Changes from Revision K (November 2016) to Revision L (June 2024)	Page
• Updated the numbering format for tables, figures, and cross-references throughout the document	1
• Added new VIH and VIL Specifications at 1.65V Vcc	5
• Increased max ambient temperature max to 125C	5
• Added Ron, Ron Peak, and Delta Ron Specifications at 1.65V Vcc	5
• Added Ron, Ron Peak, and Delta Ron Specifications at 125C	5
• Added Timing Specifications at 125C	7



TEXAS INSTRUMENTS — SN54LV4053A, SN74LV4053A
SCLS430L – MAY 1999 – REVISED JUNE 2024

Changes from Revision K (April 2005) to Revision L (June 2024)	Page
• Changed the numbering format for tables, figures, and cross-references throughout the document	1
• Added new VIH and VIL Specifications at 1.65V Vcc	5
• Increased max ambient temperature max to 125C	5
• Added Ron, Ron Peak, and Delta Ron Specifications at 1.65V Vcc	5
• Added Ron, Ron Peak, and Delta Ron Specifications at 125C	5
• Added Timing Specifications at 125C	7

Product Folder	Current Datasheet Number	New Datasheet Number	Link to full datasheet
SN74LV4051A	SCLS428I	**SCLS428J**	http://www.ti.com/product/SN74LV4051A
SN74LV4052A	SCLS429K	**SCLS429L**	http://www.ti.com/product/SN74LV4052A
SNx4LV4053A	SCLS430K	**SCLS430L**	http://www.ti.com/product/SN54LV4053A

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
☒ No Change	☒ No Change	☒ No Change	☒ 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]**
H	**B**

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
TI Mexico	MEX	MEX	Aguascalientes
Carsem	CRS	MYS	Jelapang, Ipoh
ASESH	ASH	CHN	Shanghai
TI Malaysia	**MLA**	**MYS**	**Kuala Lumpur**
CDAT	**CDA**	**CHN**	**Chengdu**

Sample product shipping label (not actual product label):

Product Affected:

Group 1: BOM change

SN74LV4051APWR	SN74LV4052APWR	SN74LV4053APWR

Group 2: ASESH-MLA

SN74LV4051APWR	SN74LV4052APWR	SN74LV4053APWR

Group 3: FMX/ASESH-MLA

SN74LV4051ADR	SN74LV4052ADR	SN74LV4053ADR

Group 4: MLA-CDAT

SN74LV4051ARGYR	SN74LV4052ARGYR	SN74LV4053ARGYR

Group 5: CRS-CDAT

SN74LV4051ARGYR

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: SN74LV4051APWR	Qual Device: SN74LV4052APWR	Qual Device: SN74LV4053APWR	Qual Device: SN74LV4051APWR	Qual Device: SN74LV4052APWR	Qual Device: SN74LV4053APWR	QBS Reference: SN74LV4053ADR
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
ESD	E2	ESD CDM	-	250 Volts	-	-	1/3/0	-	-	-	1/3/0
ESD	E2	ESD HBM	-	1000 Volts	-	-	-	-	-	-	1/3/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	-	-	-	1/30/0	1/30/0	1/30/0	1/30/0

- QBS: Qual By Similarity
- Qual Device SN74LV4051APWR is qualified at MSL1 260C
- Qual Device SN74LV4052APWR is qualified at MSL1 260C
- Qual Device SN74LV4053APWR 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-2208-027

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: SN74LV4052ADR	Qual Device: SN74LV4051ADR	Qual Device: SN74LV4051ADR	Qual Device: SN74LV4051ADR	QBS Reference: SN74HCS74QDRQ1	QBS Reference: TMUX1134PWR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	-	3/231/0	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	3/231/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	-	3/231/0	3/231/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	-	3/135/0	3/231/0
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	-	1/77/0	3/231/0
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	-	-	3/2400/0
WBS	C1	Ball Shear	76 balls, 3 units min	Wires	1/76/0	1/76/0	-	-	-	-
WBP	C2	Bond Pull	76 Wires, 3 units min	Wires	1/76/0	1/76/0	-	-	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	-	3/45/0	-

Type	#	Test Name	Condition	Duration	Qual Device: SN74LV4052ADR	Qual Device: SN74LV4051ADR	Qual Device: SN74LV4051ADR	Qual Device: SN74LV4051ADR	QBS Reference: SN74HCS74QDRQ1	QBS Reference: TMUX1134PWR
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	-	3/45/0	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	-	-	-	-	-	1/22/0
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	-
ESD	E2	ESD HBM	-	1000 Volts	-	-	-	-	-	1/3/0
ESD	E2	ESD HBM	-	2000 Volts	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	-	-	-	1/30/0	1/30/0	-	1/30/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	-	-	3/90/0	-

- QBS: Qual By Similarity
- Qual Device SN74LV4052ADR is qualified at MSL1 260C
- Qual Device SN74LV4051ADR 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-2208-028

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: SN74LV4051ARGYR	Qual Device: SN74LV4052ARGYR	Qual Device: SN74LV4053ARGYR	Qual Device: SN74LV4051ARGYR	Qual Device: SN74LV4052ARGYR	Qual Device: SN74LV4053ARGYR	QBS Reference: TS3A5017QRGYRQ1	QBS Reference: TMUX1134PWR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	-	-	-	3/231/0	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	150C	1000 Hours	-	-	-	-	-	-	3/135/0	3/231/0
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	-	-	-	3/231/0	3/231/0
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	-	-	-	-	3/2400/0
WBS	C1	Ball Shear	76 balls, 3 units min	Wires	1/76/0	1/76/0	1/76/0	-	-	-	-	-
WBP	C2	Bond Pull	76 Wires, 3 units min	Wires	1/76/0	1/76/0	1/76/0	-	-	-	-	-
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	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	-	-	-	-	-	-	-	1/22/0
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	-	-	-	-	3/30/0	-

Type	#	Test Name	Condition	Duration	Qual Device: SN74LV4051ARGYR	Qual Device: SN74LV4052ARGYR	Qual Device: SN74LV4053ARGYR	Qual Device: SN74LV4051ARGYR	Qual Device: SN74LV4052ARGYR	Qual Device: SN74LV4053ARGYR	QBS Reference: TS3A5017QRGYRQ1	QBS Reference: TMUX1134PWR
ESD	E2	ESD CDM	-	1500 Volts	-	-	-	-	-	-	1/3/0	-
ESD	E2	ESD CDM	-	250 Volts	-	-	-	-	-	-	-	1/3/0
ESD	E2	ESD CDM	-	750 Volts	1/3/0	-	-	-	-	-	-	-
ESD	E2	ESD HBM	-	1000 Volts	-	-	-	-	-	-	-	1/3/0
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	-	-	-	1/3/3	-
LU	E4	Latch-Up	Per JESD78	-	-	-	-	-	-	-	1/6/0	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	-

- QBS: Qual By Similarity
- Qual Device SN74LV4051ARGYR is qualified at MSL1 260C
- Qual Device SN74LV4052ARGYR is qualified at MSL1 260C
- Qual Device SN74LV4053ARGYR 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-2208-030

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: SN74LV4053ADR	Qual Device: SN74LV4053ADR	QBS Reference: SN74HCS74QDRQ1	QBS Reference: TMUX1134PWR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	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	3/231/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	3/231/0	3/231/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	3/135/0	3/231/0
HTOL	B1	Life Test	125C	1000 Hours	-	-	1/77/0	3/231/0
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	3/2400/0
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)	-	-	-	3/45/0	-

Type	#	Test Name	Condition	Duration	Qual Device: SN74LV4053ADR	Qual Device: SN74LV4053ADR	QBS Reference: SN74HCS74QDRQ1	QBS Reference: TMUX1134PWR
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	3/45/0	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	-	-	-	1/22/0
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	3/30/0	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	-	1/3/0
ESD	E2	ESD CDM	-	500 Volts	-	-	1/3/0	-
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	-	-	1/3/0
ESD	E2	ESD HBM	-	2000 Volts	-	-	1/3/0	-
LU	E4	Latch-Up	Per JESD78	-	-	1/3/0	1/6/0	1/3/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	-	1/30/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	3/90/0	-

- QBS: Qual By Similarity
- Qual Device SN74LV4053ADR 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-2301-057

For questions regarding this notice, e-mails can be sent to the Change Management team or your local Field Sales Representative.