

PCN Number:	20230112001.1	PCN Date:	January 12, 2023
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Title: Qualification of new Fab site (RFAB) using qualified Process Technology, Die Revision, Datasheet and additional Assembly site/BOM options for select devices

Customer Contact: [PCN Manager](#) **Dept:** Quality Services

Proposed 1st Ship Date: Apr 12, 2023 **Sample requests accepted until:** Feb 12, 2023*

***Sample requests received after February 12, 2023 will not be supported.**

Change Type:					
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Assembly Materials
<input checked="" type="checkbox"/>	Design	<input checked="" type="checkbox"/>	Electrical Specification	<input type="checkbox"/>	Mechanical Specification
<input type="checkbox"/>	Test Site	<input checked="" type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process
<input type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>	Wafer Bump Material	<input type="checkbox"/>	Wafer Bump Process
<input checked="" type="checkbox"/>	Wafer Fab Site	<input checked="" type="checkbox"/>	Wafer Fab Materials	<input checked="" type="checkbox"/>	Wafer Fab Process
		<input type="checkbox"/>	Part number change		

PCN Details

Description of Change:

Texas Instruments is pleased to announce the qualification of a new fab & process technology (RFAB, LBC7) and assembly (MLA) site for selected 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
DL-LIN	LBC3S	150 mm	RFAB	LBC7	300 mm
DL-LIN	LBC3S	200 mm			
SFAB	OI	150 mm			

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

Construction Differences: No material differences between sites.

The datasheet 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.



SN65LBC180A, SN75LBC180A
SLLS378E – MAY 2000 – REVISED JANUARY 2023

Changes from Revision D (April 2009) to Revision E (January 2023)	Page
• Changed the document to the latest TI format.....	1
• Added the <i>Pin Configuration and Functions</i>	3
• Added the <i>Thermal Information</i> table.....	5
• Changed the Typical Characteristics graphs.....	7



SN65LBC179A, SN75LBC179A
SLLS377E – MAY 2000 – REVISED JANUARY 2023

Changes from Revision D (September 2011) to Revision E (January 2023)	Page
• Changed the document to the latest TI format.....	1
• Added the <i>Thermal Information</i> table.....	5
• Changed the <i>Typical Characteristics</i> graphs.....	7

Changes from Revision H (June 2000) to Revision I (January 2023)	Page
• Changed the document to the latest TI format.....	1
• Deleted the Package thermal impedance from the <i>Absolute Maximum Ratings</i>	4
• Added the <i>Thermal Information</i> table.....	4
• Changed the <i>Typical Characteristics</i> graphs.....	9

Changes from Revision G (April 2003) to Revision H (January 2023)	Page
• Changed the document to the latest TI format.....	1
• Deleted the Package thermal impedance from the <i>Absolute Maximum Ratings</i>	4
• Added the <i>Thermal Information</i> table.....	4
• Changed the <i>Typical Characteristics</i> graphs.....	8

Changes from Revision A (December 1999) to Revision B (January 2023)	Page
• Changed the document to the latest TI format.....	1
• Deleted the P package option.....	3
• Deleted the Package thermal impedance from the <i>Absolute Maximum Ratings</i>	4
• Added the <i>Thermal Information</i> table.....	4

Changes from Revision H (September 2015) to Revision I (January 2023)	Page
• Changed the <i>Thermal Information</i> table	5
• Changed the <i>Typical Characteristics</i> graphs.....	10

Changes from Revision D (August 200/8) to Revision E (January 2023)	Page
• Changed the document to the latest TI format.....	1
• Added the <i>Thermal Information</i> table.....	5

Product Folder	Current Datasheet Number	New Datasheet Number	Link to full datasheet
SNx5LBC180A	SLLS378D	SLLS378E	http://www.ti.com/product/SN65LBC180A
SNx5LBC179A	SLLS377D	SLLS377E	http://www.ti.com/product/SN65LBC179A
SNx5ALS176, SN75ALS176A, and SN75ALS176B	SLLS040H	SLLS040I	http://www.ti.com/product/SN65ALS176

SNx5ALS180	SLLS052G	SLLS052H	http://www.ti.com/product/SN65ALS180
SN65ALS1176	SLLS295A	SLLS295B	http://www.ti.com/product/SN65ALS1176
SNx5HVD1176	SLLS563H	SLLS563I	http://www.ti.com/product/SN65HVD1176
SNx5LBC176A	SLLS376D	SLLS376E	http://www.ti.com/product/SN65LBC176A

Temp and Tube variants of the devices are included in EOL notice PDN# 20230112004.3.

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-milimeter 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
DL-LIN	DLN	USA	Dallas
SH-BIP-1	SHE	USA	Sherman
RFAB	RFB	USA	Richardson

Die Rev:

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

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
FMX	MEX	MEX	Aguascalientes
MLA	MLA	MYS	KUALA LUMPUR

Sample product shipping label (not actual product label)

TEXAS INSTRUMENTS
 MADE IN: Malaysia
 2DC: 20:
 MSL '2 /260C/1 YEAR SEAL DT
 MSL 1 /235C/UNLIM 03/29/04
 OPT:
 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

Product Affected:

SN65ALS1176DR	SN65ALS180DR	SN65HVD1176DRG4	SN65LBC179ADRG4
SN65ALS1176DRE4	SN65ALS180DRG4	SN65LBC176ADR	SN65LBC180ADR
SN65ALS176DR	SN65HVD1176DR	SN65LBC179ADR	SN75ALS176BDR

For alternate parts with similar or improved performance, please visit the product page on TI.com

Qualification Report
Approve Date 09-JANUARY -2023

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: SN65ALS180DR	Qual Device: SN65ALS1176DR	Qual Device: SN65ALS176DR	Qual Device: SN75ALS176BDR	QBS Reference: TCAN1044VDRQ1	QBS Reference: TCAN1044VDRQ1	QBS Reference: TPSS1217DSCR	QBS Reference: TCAN1043DQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	-	2/154/0	2/154/0	3/231/0	3/231/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	-	1/77/0	2/154/0	3/231/0	3/231/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	-	1/77/0	2/154/0	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	500 Hours	-	-	-	-	1/45/0	2/90/0	-	1/45/0
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	-	1/77/0	2/154/0	-	1/77/0
HTOL	B1	Life Test	135C	635 Hours	-	-	-	-	-	-	3/231/0	-
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)	-	-	-	-	-	-	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	-	-	-	-	-	1/10/0	2/20/0	-	3/30/0
ESD	E2	ESD CDM	-	1500 Volts	-	-	-	-	-	-	3/9/0	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	1/3/0	-	-	-	-	-
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	-	1/3/0	-	-	-	-	-
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	-	-	-	3/9/0	-
LU	E4	Latch-Up	Per JESD78	-	1/3/0	-	1/3/0	-	-	-	3/18/0	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	1/30/0	-	-	-	3/60/0	-
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	-	-	2/60/0	-	-	1/30/0
FTY	E6	Final Test Yield	-	-	1/1/0	-	1/1/0	-	-	-	-	-

- QBS: Qual By Similarity
- Qual Device SN65ALS180DR is qualified at MSL1 260C
- Qual Device SN65ALS1176DR is qualified at MSL1 260C
- Qual Device SN65ALS176DR is qualified at MSL1 260C
- Qual Device SN75ALS176BDR 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/>

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

Qualification Report
Approve Date 09-JANUARY -2023

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: SN65LBC180ADR	Qual Device: SN65LBC179ADR	QBS Reference: TCAN1044VDRO1	QBS Reference: TCAN1044VDRO1	QBS Reference: TPS51217DSCR	QBS Reference: TCAN1043DO1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	1/77/0	2/154/0	3/231/0	3/231/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	1/77/0	2/154/0	3/231/0	3/231/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	1/77/0	2/154/0	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	500 Hours	-	-	1/45/0	2/90/0	-	1/45/0
HTOL	B1	Life Test	125C	1000 Hours	-	-	1/77/0	2/154/0	-	1/77/0
HTOL	B1	Life Test	135C	635 Hours	-	-	-	-	3/231/0	-
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)	-	-	-	-	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	-	-	-	1/10/0	2/20/0	-	3/30/0
ESD	E2	ESD CDM	-	1500 Volts	-	-	-	-	3/9/0	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	1/3/0	-	-	-	-
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	1/3/0	-	-	-	-
ESD	E2	ESD HBM (Bus Pins)	-	12000 Volts	1/3/0	-	-	-	-	-
ESD	E2	ESD HBM (Bus Pins)	-	15000 Volts	-	1/3/0	-	-	-	-
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	-	3/9/0	-
LU	E4	Latch-Up	Per JESD78	-	1/3/0	1/3/0	-	-	3/18/0	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	-	-	3/60/0	-
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	2/60/0	-	-	1/30/0
FTY	E6	Final Test Yield	-	-	1/1/0	1/1/0	-	-	-	-

- QBS: Qual By Similarity
- Qual Device SN65LBC180ADR is qualified at MSL1 260C
- Qual Device SN65LBC179ADR 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/>

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

Qualification Report
Approve Date 09-JANUARY -2023

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: SN65HVD1176DR	QBS Reference: TCAN1044VDRQ1	QBS Reference: TCAN1044VDRQ1	QBS Reference: TPS51217DSCR	QBS Reference: TPS51218DSCR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	1/77/0	2/154/0	3/231/0	-
UHA	A3	Autoclave	121C/15psig	96 Hours	-	1/77/0	2/154/0	3/231/0	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	1/77/0	2/154/0	3/231/0	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	-	3/231/0	-
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	1/45/0	2/90/0	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	1/77/0	2/154/0	-	-
HTOL	B1	Life Test	135C	635 Hours	-	-	-	3/231/0	-
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)	-	-	-	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	-	-	1/10/0	2/20/0	-	-
ESD	E2	ESD CDM	-	1500 Volts	-	-	-	3/9/0	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	-	-	-
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	-	-	-	-
ESD	E2	ESD HBM (Bus Pins)	-	10000 Volts	1/3/0	-	-	-	-
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	3/9/0	-
LU	E4	Latch-Up	Per JESD78	-	1/3/0	-	-	3/18/0	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	-	3/60/0	1/30/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	2/60/0	-	-	-
FTY	E6	Final Test Yield	-	-	1/1/0	-	-	-	-

- QBS: Qual By Similarity
- Qual Device SN65HVD1176DR 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/>

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

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

Location	E-Mail
WW Change Management Team	PCN_ww_admin_team@list.ti.com

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