

PCN Number:	20250730004.1	PCN Date:	July 31, 2025
Title:	Qualification of RFAB using qualified Process Technology, Die Revision, Datasheet and BOM options for select devices		
Customer Contact:	Change Management Team	Dept:	Quality Services
Proposed 1st Ship Date:	October 29, 2025	Sample requests accepted until:	September 29, 2025*

***Sample requests received after September 29, 2025 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 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 addition of RFAB using the TIB qualified process technology, and assembly 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
DL-LIN-2	EXCAL2	150 mm	RFAB	TIB	300 mm

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

Construction differences are as follows:

Group 1

	Current	Proposed
Assembly site/ Test	FMX/ TAI	MLA
Bond wire diam/type	0.96 mil Cu	0.8 mil Cu
Die thickness	10.5 mil	7.5 mil

Group 2

	Current	Proposed
Assembly site/ Test	FMX	FMX
Bond wire diam/type	0.96 mil Cu	0.8 mil Cu
Die thickness	10.5 mil	7.5 mil

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. For additional information, the standard data package (SDP) should be requested. The request can be sent to pcn_ww_admin_team@list.ti.com



TLE2141, TLE2141A, TLE2142, TLE2142A, TLE2142AM, TLE2142AM-D, TLE2142M, TLE2142M-D, TLE2144, TLE2144A, TLE2144AM, TLE2144M, TLE2144M-D

SLOS183E – FEBRUARY 1997 – REVISED JULY 2025

Changes from Revision D (October 2012) to Revision E (July 2025) Page

- Updated the numbering format for tables, figures, and cross-references throughout the document..... 1
- Changed pins 1 and 5 from OFFSET N1 to NC and OFFSET N2 to NC for TLE2141 D, JG, and P package pinouts..... 3
- Changed typical settling time specification across all devices from 0.34µs (0.1%, ±15V V_S) to 0.43µs, 0.4µs (0.01%, ±15V V_S) to 0.64µs, 0.16µs (0.1%, 5V V_S) to 0.66µs, and 0.22µs (0.01%, 5V V_S) to 0.99µs..... 4
- Changed typical THD+N specification at ±15V V_S across all devices from 0.01% to 0.06%..... 4
- Changed typical maximum output bandwidth specification at 5V V_S across all devices from 660kHz to 380kHz..... 4

The links to the revised datasheets are available in the table below:

Product Folder	Current Datasheet Number	New Datasheet Number	Link to full datasheet
TLE2141	SLOS183D	SLOS183E	http://www.ti.com/product/TLE2141

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 200-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:

Group 1 and 2

Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
DL-LIN	DLN	USA	Dallas
RFAB	RFB	USA	Richardson

Die Rev:

Current	New
Die Rev [2P]	Die Rev [2P]
B	C

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
TAI	TAI	TWN	Chung Ho, New Taipei City
FMX	MEX	MEX	Aguascalientes

Sample product shipping label (not actual product label):

TEXAS INSTRUMENTS
MADE IN: Malaysia
2DC: 2Q:



(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

MSL 2 /260C/1 YEAR	SEAL DT
MSL 1 /235C/UNLIM	03/29/04

OPT:
ITEM: 39
LBL: 5A (L)T0:1750

Product Affected- Group 1:

TLE2141IDR	TLE2141AIDR	TLE2141CDR	TLE2142IDR
TLE2142ACDR	TLE2142AIDR	TLE2142CDR	TLE2142AMDR
TLE2142MDR			

Product Affected- Group 2

TLE2142IP	TLE2142CP
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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: TLE2141IDR	QBS Process Reference: TIRQEV23UM0	QBS Package Reference: ULQ2003AQDRQ1	QBS Package Reference: LM2901BQDRQ1	QBS Package Reference: QPA2991QDRQ1	QBS Package Reference: LM2903BQDRQ1	QBS Package Reference: LM2901QDRQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	1/77/0	3/231/0	1/77/0	1/77/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	3/231/0	-	-	-	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	1/77/0	3/231/0	1/77/0	1/77/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	3/231/0	3/231/0	1/77/0	3/231/0	1/77/0	1/77/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	1/45/0	3/135/0	-	3/135/0	-	-
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	-	-	1/77/0	-	1/45/0	1/77/0
HTOL	B1	Life Test	125C	1000 Hours	-	3/231/0	3/231/0	-	-	-	-
HTOL	B1	Life Test	150C	300 Hours	-	-	-	1/77/0	-	1/77/0	1/77/0
HTOL	B1	Life Test	150C	408 Hours	-	-	-	-	-	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	3/2400/0	-	-	-	-	-

Type	#	Test Name	Condition	Duration	Qual Device: TLE2141IDR	QBS Process Reference: TIBQEV23UM0	QBS Package Reference: ULQ2003AQDRQ1	QBS Package Reference: LM2901BQDRQ1	QBS Package Reference: OPA2991QDRQ1	QBS Package Reference: LM2903BQDRQ1	QBS Package Reference: LM2901QDRQ1
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	1/15/0	1/15/0	-	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	-	1/15/0	1/15/0
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	-	1/10/0	3/30/0	1/10/0	1/10/0
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	-	-	-	-	-
ESD	E2	ESD CDM	-	500 Volts	-	-	-	1/3/0	1/3/0	1/3/0	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	1/3/0
LU	E4	Latch-Up	Per JESD78	-	1/3/0	-	-	1/6/0	1/6/0	1/6/0	1/6/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	3/90/0	1/30/0	3/90/0	1/30/0	1/30/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	3/90/0	1/30/0	3/90/0	1/30/0	1/30/0
FTY	E6	Final Test Yield	-	-	1/Pass	-	-	-	-	-	-

- QBS: Qual By Similarity, also known as Generic Data
- Qual Device TLE2141IDR 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-2405-015

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: TLE2142IDR	QBS Reference: ULQ2003AQDRQ1	QBS Reference: MC33063AQDRQ1	QBS Reference: OPA2991QDRQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	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	3/231/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	3/135/0	3/135/0	3/135/0
HTOL	B1	Life Test	125C	1000 Hours	-	3/231/0	3/231/0	-
HTOL	B1	Life Test	150C	408 Hours	-	-	-	1/77/1 ¹
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	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

Type	#	Test Name	Condition	Duration	Qual Device: TLE2142IDR	QBS Reference: ULQ2003AQDRQ1	QBS Reference: MC33063AQDRQ1	QBS Reference: OPA2991QDRQ1
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	-	-
ESD	E2	ESD CDM	-	500 Volts	-	-	1/3/0	1/3/0
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	-	-	-
ESD	E2	ESD HBM	-	2000 Volts	-	-	1/3/0	1/3/0
LU	E4	Latch-Up	Per JESD78	-	-	-	1/6/0	1/6/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	-	-
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	3/90/0	3/90/0	3/90/0

- QBS: Qual By Similarity, also known as Generic Data
- Qual Device TLE2142IDR 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-2404-085

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: TLE2142IP	QBS Reference: NE5532P	QBS Reference: TS12A4514P	QBS Reference: UCC37322P	QBS Reference: MC33063AQDRQ1	QBS Reference: OP07CP	QBS Reference: ULN2003AN	QBS Reference: TLE2142IDR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	-	-	3/231/0	-	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	1/77/0	3/231/0	-	-	-	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	-	3/231/0	1/77/0	1/77/0	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	1/77/0	3/231/0	3/231/0	1/77/0	1/77/0	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	-	3/135/0	-	1/77/0	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	1/77/0	3/231/0	-	-	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	-	3/231/0	-	-	-
HTOL	B1	Life Test	150C	300 Hours	-	3/231/0	-	-	-	-	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	-	3/2400/0	-	-	-

Type	#	Test Name	Condition	Duration	Qual Device: TLE2142IP	QBS Reference: NE5532P	QBS Reference: TS12A4514P	QBS Reference: UCC37322P	QBS Reference: MC33063AQDRQ1	QBS Reference: OP07CP	QBS Reference: ULN2003AN	QBS Reference: TLE2142IDR
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	8 Hours Steam Age	-	-	3/66/0	-	3/66/0	-	-	-	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	-	-	3/30/0	-	-	-
ESD	E2	ESD CDM	-	1000 Volts	1/3/0	-	-	-	-	1/3/0	-	1/3/0
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	-	-	-	1/3/0	-	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	-	-	-
LU	E4	Latch-Up	Per JESD78	-	-	-	-	-	1/6/0	-	-	-
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	-	-	-
FTY	E6	Final Test Yield	-	-	1/Pass	-	-	-	-	-	-	-

- QBS: Qual By Similarity, also known as Generic Data
- Qual Device TLE2142IP 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-2404-087

In performing change qualifications, Texas Instruments follows integrated circuit industry standards in performing defect mechanism analysis and failure mechanism-based accelerated environmental testing to ensure wafer fab process, assembly process and product quality and reliability. As encouraged by these standards, TI uses both product-specific and generic (family) data in qualifying its changes. For devices to be categorized as a 'product qualification family' for generic data purposes, they must share similar product, wafer fab process and assembly process elements. The applicability of generic data (also known at TI as Qualification by Similarity (QBS)) is determined by the Reliability Engineering function following these industry standards. Generic data is shown in the qualification report in columns titled "QBS Process" (for wafer fab process), "QBS Package" (for assembly process) and "QBS Product" (for product family).

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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