TEXAS INSTRUMENTS 12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20240411004.1
Qualification of RFAB using qualified Process Technology, Die Revision, and additional Assembly site options for select devices
Change Notification / Sample Request

Date: April 11, 2024
To: MOUSER PCN

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

20240411004.1
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
MC33078DR-NG	NULL
TLV342IRUGR	NULL
TLV342SIRUGR	NULL

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

PCN Number:	20240411004.1	**PCN Date:**	April 11, 2024
Title:	Qualification of RFAB using qualified Process Technology, Die Revision, and additional Assembly site options for select devices		
Customer Contact:	Change Management team	**Dept:**	Quality Services
Proposed 1st Ship Date:	July 10, 2024	**Sample requests accepted until:**	May 11, 2024*

***Sample requests received after May 11, 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 Materials
☒ Packing/Shipping/Labeling	☐ Test Process	☒ Wafer Fab Process

PCN Details

Description of Change:

Texas Instruments is pleased to announce the addition of RFAB using the LBC9 qualified process technology and additional Assembly site (MLA) options 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**
DFAB	50A21, EXCAL2, BICOM2/2X	150 mm	RFAB	LBC9	300 mm
SFAB	JI1	150 mm			

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

Additionally, there will be BOM/Assembly options introduced for these devices:

Group 1 device:

	UTL	**CDAT**
Wire diam/type	0.8mil Au	0.8mil Cu
Mount compound	PZ0039	4226215
Mold compound	CZ0138	4222198

Group 2 device:

	Current	**Proposed**
Wire diam/type	0.8mil Au	0.8mil Cu

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 and 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

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
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, B	**A, B**

Assembly/Test Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
UTL1	NSE	THA	Bangkok
TI Mexico	MEX	MEX	Aguascalientes
MLA	**MLA**	**MYS**	**KUALA LUMPUR**
CDAT	**CDA**	**CHN**	**Chengdu**

Sample product shipping label (not actual product label)

TEXAS INSTRUMENTS
G4
MADE IN: Malaysia
2DC:
2Q:

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

OPT:
ITEM: 39
LBL: 5A (L)TO: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

Group 1 Product Affected:

TLV342IRUGR	TLV342SIRUGR

Group 2 Product Affected:

MC33078DR-NG

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: RC4580IDR	QBS Process Reference: LM2902BQPWRQ1	QBS Package Reference: LM2903BQDRQ1	QBS Package Reference: MC33063ADR	QBS Package Reference: OPA2991QDRQ1	QBS Product Reference: RC4580IPWR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	3/231/0	3/231/0	3/231/0	-
UHAST	A3	Unbiased HAST	110C/85%RH	264 Hours	-	3/231/0	-	-	-	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	3/231/0	3/231/0	3/231/0	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	3/231/0	3/231/0	3/231/0	3/231/0	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	3/231/0	3/135/0	-	3/135/0	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	-	3/231/0	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	2/154/0	-	-
HTOL	B1	Life Test	150C	300 Hours	-	-	3/231/0	-	-	-
HTOL	B1	Life Test	150C	408 Hours	-	3/231/0	-	-	1/77/1[1]	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	3/2400/0	3/2400/0	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	3/30/0	-	3/30/0	-
ESD	E2	ESD CDM	-	1500 Volts	-	3/9/0	-	-	-	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	-	1/3/0	-	1/3/0
ESD	E2	ESD CDM	-	500 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	1/3/0	-	1/3/0	-
LU	E4	Latch-Up	Per JESD78	-	-	3/18/0	1/6/0	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	3/90/0	-	3/90/0	-
FTY	E6	Final Test Yield	-	-	1/1/0	-	-	-	-	-

- QBS: Qual By Similarity
- Qual Device RC4580IDR 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-2307-066

[1]-HTOL failed due to rejects mixed back in with tested good units.

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: TLV342SIRUGR	QBS Reference: OPA2991QDGKRQ1	QBS Reference: ADS1115IRUGR	QBS Reference: 2N7001TDPWR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/2	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	-	-	3/231/0	-
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	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); PB Solder;	-	-	1/15/0	-	3/66/0
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	-	1/15/0	1/22/0	3/66/0
PD	C4	Physical Dimensions	Cpk>1.67	-	-	3/30/0	-	3/15/0
ESD	E2	ESD CDM	-	250 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	-	1/3/0	1/6/0	-	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	-	3/90/0	-	3/90/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-		-	-
FTY	E6	Final Test Yield	-	-	1/Pass	-	-	3/3/0

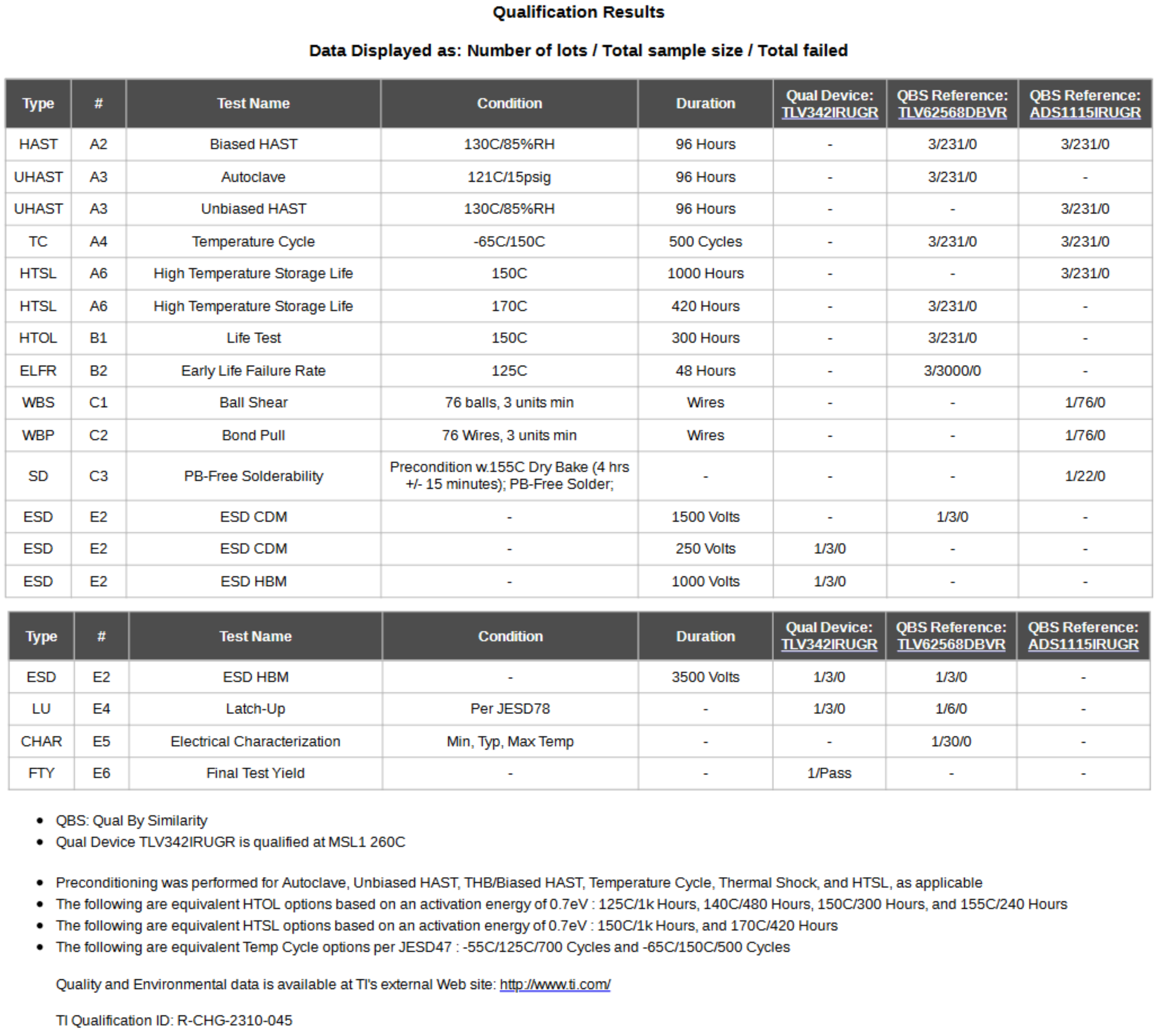
- QBS: Qual By Similarity
- Qual Device TLV342SIRUGR is qualified at MSL1 260C

- 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-2210-032

[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 Results

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

Type	#	Test Name	Condition	Duration	Qual Device: TLV342IRUGR	QBS Reference: TLV62568DBVR	QBS Reference: ADS1115IRUGR
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	-	-	3/231/0
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	3/231/0	-
HTOL	B1	Life Test	150C	300 Hours	-	3/231/0	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	3/3000/0	-
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-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	-	-	1/22/0
ESD	E2	ESD CDM	-	1500 Volts	-	1/3/0	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	-
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	-	-

Type	#	Test Name	Condition	Duration	Qual Device: TLV342IRUGR	QBS Reference: TLV62568DBVR	QBS Reference: ADS1115IRUGR
ESD	E2	ESD HBM	-	3500 Volts	1/3/0	1/3/0	-
LU	E4	Latch-Up	Per JESD78	-	1/3/0	1/6/0	-
CHAR	E5	Electrical Characterization	Min, Typ, Max Temp	-	-	1/30/0	-
FTY	E6	Final Test Yield	-	-	1/Pass	-	-

- QBS: Qual By Similarity
- Qual Device TLV342IRUGR 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-2310-045

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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