



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN#20240628003.1

**Qualification of FFAB using qualified Process Technology, Die Revision, & BOM options for select devices
Change Notification / Sample Request**

Date: June 28, 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

20240628003.1
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
OPA2241UA/2K5	NULL
OPA2251UA/2K5	NULL
OPA251UA/2K5	NULL

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

PCN Number:	20240628003.1	PCN Date:	June 28, 2024		
Title:	Qualification of FFAB using qualified Process Technology, Die Revision, & BOM options for select devices				
Customer Contact:	Change Management Team	Dept:	Quality Services		
Proposed 1st Ship Date:	September 26, 2024	Sample requests accepted until:	July 28, 2024*		
*Sample requests received after July 28, 2024 will not be supported.					
Change Type:					
<input type="checkbox"/>	Assembly Site	<input checked="" type="checkbox"/>	Design		
<input checked="" type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet		
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change		
<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"/>		<input type="checkbox"/>	Wafer Bump Material		
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Bump Process		
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	Wafer Fab Site		
<input type="checkbox"/>		<input checked="" type="checkbox"/>	Wafer Fab Material		
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	Wafer Fab Process		
PCN Details					
Description of Change:					
Texas Instruments is pleased to announce the addition of FFAB using the BICOM3XHV qualified process technology and additional 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	JIBB	150 mm	FFAB	BICOM3XHV	200 mm
The die was also changed as a result of the process change.					
Construction differences are as follows:					
		Current	Additional		
Bond Wire composition/diameter		Au, 1.2 or 1.3 mils	Cu, 1.0 mil		
Mount Compound		4205846	4147858		
Mold Compound		4209640	4226323		
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		
<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		
SH-BIP-1	SHE	USA	Sherman		
FR-BIP-1	TID	DEU	Freising		

Die Rev:

Current

New

Die Rev [2P]	Die Rev [2P]
A	A

Sample product shipping label (not actual product label):

Product Affected:

OPA2241UA/2K5	OPA2251UA/2K5	OPA241UA/2K5	OPA251UA/2K5
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For alternate parts with similar or improved performance, please visit the product page on [TI.com](https://www.ti.com)

TI Information
Selective Disclosure

Qualification Report

Redbull OPA241/OPA251 in 8D assembled in MLA
Approve Date 28-May-2024

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: OPA241UA/2K5	Qual Device: OPA251UA/2K5	QBS Process Reference: OPA2205ADGKR	QBS Process Reference: OPA2206ADGKR	QBS Package Reference: INA849DR	QBS Package Reference: LMC6482IM/NOPB
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	1/77/0	2/154/0	-	1/77/0
HAST	A2	Temperature Humidity Bias	85C/85%RH	1000 Hours	-	-	-	-	3/231/0	-
UHA	A3	Unbiased HAST	130C/85%RH	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	-	-	1/77/0	2/154/0	3/231/0	-
HTOL	B1	Life Test	100C ¹	300 Hours	-	-	-	-	1/77/0	-
HTOL	B1	Life Test	150C	300 Hours	-	-	1/77/0	2/154/0	-	3/231/0
ELFR	B2	Early Life Failure Rate	150C	24 Hours	-	-	1/800/0	2/2000/0	-	-

Type	#	Test Name	Condition	Duration	Qual Device: OPA241UA/2K5	Qual Device: OPA251UA/2K5	QBS Process Reference: OPA2205ADGKR	QBS Process Reference: OPA2206ADGKR	QBS Package Reference: INA849DR	QBS Package Reference: LMC6482IM/NOPB
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	1/3/0	2/6/0	1/3/0	1/3/0
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	-	1/3/0	2/6/0	1/3/0	1/3/0
LU	E4	Latch-Up	Per JESD78	-	1/3/0	-	1/6/0	1/6/0	1/6/0	1/3/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	-	1/30/0	1/30/0	2/60/0	1/30/0	3/90/0

- QBS: Qual By Similarity
- Qual Device OPA241UA/2K5 is qualified at MSL1 260C
- Qual Device OPA251UA/2K5 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-2305-099

[1] Tj =150C

TI Information
Selective Disclosure

Qualification Report

Redbull OPA2241 in 8D assembled in MLA Approve Date 24-MAY -2024

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: OPA2241UA	QBS Reference: OPA2205ADGKR	QBS Reference: OPA2206ADGKR	QBS Reference: INA849DR	QBS Reference: LMC6482IM/NOPB
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	1/77/0	2/154/0	-	1/77/0
HAST	A2	Temperature Humidity Bias	85C/85%RH	1000 Hours	-	-	-	3/231/0	-
UHAST	A3	Unbiased HAST	130C/85%RH	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	-	1/77/0	2/154/0	3/231/0	-
HTOL	B1	Life Test	100C ¹	300 Hours	-	-	-	1/77/0	-
HTOL	B1	Life Test	150C	300 Hours	-	1/77/0	2/154/0	-	3/231/0
ELFR	B2	Early Life Failure Rate	150C	24 Hours	-	1/800/0	2/2000/0	-	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	1/3/0	2/6/0	1/3/0	1/3/0
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	1/3/0	2/6/0	1/3/0	1/3/0
LU	E4	Latch-Up	Per JESD78	-	1/3/0	1/6/0	1/6/0	1/6/0	1/3/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	2/60/0	1/30/0	3/90/0

- QBS: Qual By Similarity
- Qual Device OPA2241UA/2K5 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-2305-100

[1] Tj=150C

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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