

PCN Number:	20241217018.1	PCN Date:	December 18, 2024
Title:	Qualification of FFAB using qualified Process Technology, Die Revision, Datasheet, and additional Assembly Site/BOM options for select devices		
Customer Contact:	Change Management Team	Dept:	Quality Services
Proposed 1st Ship Date:	March 18, 2025	Sample requests accepted until:	January 17, 2025*

***Sample requests received after January 17, 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 checked="" 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 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 qualification of its FFAB 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	CBC10	150 mm	FFAB	BICOMHD	200 mm

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

Construction differences are as follows:

Group 1 device:

	Current	Proposed
Wire type/diam	1.15mil Au	0.8mil Cu
Pin 1 symbol	Dimple	Dot

Group 2 device:

	ASESH	UTL2	MLA
Wire type/diam	1.0mil Cu	1.0mil Au	1.0mil Cu
Mount compound	EY1000063	PZ0013	4147858
Mold compound	EN2000763	CZ0094	4211880
Marking difference	With backside marking	With backside marking	Without backside marking

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.



Changes from Revision D (August 2008) to Revision E (December 2024)	Page
• Updated the numbering format for tables, figures, and cross-references throughout the document.....	1
• Added the <i>Package Information</i> table, <i>Pin Functions</i> table, <i>ESD Ratings</i> , <i>Thermal Information</i> , <i>Recommended Operating Conditions</i> , and <i>Detailed Description</i> sections.....	1
• Updated electrical characteristics to match device performance.....	4
• Updated plots in <i>Typical Characteristics</i>	10
• Updated thermal analysis with new θ_{JA}	38

Product Folder	Current Datasheet Number	New Datasheet Number	Link to full datasheet

OPA2830	SBOS309D	SBOS309E	http://www.ti.com/product/OPA2830
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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			

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] D	Die Rev [2P] A

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
UTL2	NS2	THA	Bangpakong, Chachoengsao
ASESH	ASH	CHN	Shanghai
MLA	MLA	MYS	Kuala Lumpur

Sample product shipping label (not actual product label)

Group 1 Product Affected:

OPA2830IDR

Group 2 Product Affected:

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: OPA2830IDR	QBS Process Reference: THS3491IDDAR	QBS Process Reference: OPA2810IDGKR	QBS Package Reference: TCAN1146DRQ1	QBS Package Reference: LMC6482IMNNOPE	QBS Package Reference: ULQ2003AQDRQ1	QBS Package Reference: OPA2863QDRQ1	QBS Package Reference: OPA4187ID
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	3/231/0	3/231/0	1/77/0	3/231/0	3/231/0	3/231/0
UHASt	A3	Autoclave	121C/15psig	96 Hours	-	-	-	3/231/0	-	3/231/0	-	-
UHASt	A3	Unbiased HAST	130C/85%RH	96 Hours	-	3/231/0	3/231/0	-	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	-	-	-	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	3/231/0	3/231/0	-	-	-	-	3/231/0
HTOL	B1	Life Test	125C	1000 Hours	-	-	3/231/0	-	-	3/231/0	-	-
HTOL	B1	Life Test	150C	1000 Hours	-	-	-	2/154/0	-	-	-	-
HTOL	B1	Life Test	150C	300 Hours	-	-	-	-	3/231/0	-	3/231/0	-
HTOL	B1	Life Test	70C Vcc Max (self heating brings Tj up to 150C)	300 Hours	-	3/231/0	-	-	-	-	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	3/3000/0	-	-	-	3/2400/0	-

Type	#	Test Name	Condition	Duration	Qual Device: OPA2830IDR	QBS Process Reference: THS3491IDDAR	QBS Process Reference: OPA2810IDGKR	QBS Package Reference: TCAN1146DRQ1	QBS Package Reference: LMC6482IMNNOPE	QBS Package Reference: ULQ2003AQDRQ1	QBS Package Reference: OPA2863QDRQ1	QBS Package Reference: OPA4187ID
ELFR	B2	Early Life Failure Rate	70C (self heating brings Tj up to 150C)	24 Hours	-	3/3000/0	-	-	-	-	-	-
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	-	-	3/30/0	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	3/9/0	3/9/0	-	1/3/0	-	-	1/3/0
ESD	E2	ESD CDM	-	500 Volts	-	-	-	-	-	-	1/3/0	-
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	3/9/0	3/9/0	-	1/3/0	-	-	1/3/0
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	-	-	-	1/3/0	-
LU	E4	Latch-Up	Per JESD78	-	1/3/0	3/18/0	3/9/0	-	1/3/0	-	1/6/0	1/6/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	3/90/0	3/90/0	-	3/90/0	-	-	1/30/0

- QBS: Qual By Similarity, also known as Generic Data
- Qual Device OPA2830IDR 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-NPD-2401-132

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: OPA2830IDGKR	QBS Reference: THS491DDAR	QBS Reference: OPA2810IDGKR	QBS Reference: TP392622Q0GNRQ1	QBS Reference: TE549111LQ0GSRQ1	QBS Reference: OPA2830IDR
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	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	170C	420 Hours	-	3/231/0	3/231/0	-	-	-
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	-	-	2/90/0	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	3/231/0	-	3/231/0	-
HTOL	B1	Life Test	70C Vcc Max (self heating brings Tj up to 150C)	300 Hours	-	3/231/0	-	-	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	3/3000/0	-	-	-
ELFR	B2	Early Life Failure Rate	70C (self heating brings Tj up to 150C)	24 Hours	-	3/3000/0	-	-	-	-
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	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	3/9/0	3/9/0	-	-	1/3/0
ESD	E2	ESD CDM	-	500 Volts	-	-	-	1/3/0	-	-
ESD	E2	ESD HBM	-	1000 Volts	-	3/9/0	3/9/0	-	-	1/3/0
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	1/3/0	-	-
LU	E4	Latch-Up	Per JESD78	-	-	3/18/0	3/9/0	1/6/0	-	1/3/0
CHAR	E5	Electrical Characterization	Min, Typ, Max Temp	-	1/30/0	3/90/0	3/90/0	-	-	1/30/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	3/90/0	3/90/0	-	-	1/30/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	-	1/30/0	3/90/0	-

- QBS: Qual By Similarity, also known as Generic Data
- Qual Device OPA2830IDGKR is qualified at MSL2 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-NPD-2401-133

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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