



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

**PCN# 20241217018.1**

**Qualification of FFAB using qualified Process Technology, Die Revision, Datasheet,  
and additional Assembly Site/BOM options for select devices  
Change Notification / Sample Request**

**Date:** December 18, 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.

Changes outlined in this notification underscore our commitment to product longevity and supply continuity, as well as our continued efforts to transition to newer, more efficient manufacturing processes and technologies. Specifically, this particular notification is related to TI's multiyear transition plan for our two remaining 150-millimeter production lines (DFAB in Dallas, Texas, and SFAB in Sherman, Texas). SFAB closure activities are expected to begin by the end of 2025. DFAB will remain open with a smaller set of 200mm technologies and GaN.

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

**20241217018.1**  
**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 |
|--------------|----------------------|
| OPA2830IDR   | NULL                 |
| OPA2830IDGKR | NULL                 |

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

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



OPA2830

SBOS309E – AUGUST 2004 – REVISED DECEMBER 2024

| 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 $\theta_{JA}$ .....                                                                                                                                                             | 38   |

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

|         |          |                 |                                                                                   |
|---------|----------|-----------------|-----------------------------------------------------------------------------------|
| OPA2830 | SBOS309D | <b>SBOS309E</b> | <a href="http://www.ti.com/product/OPA2830">http://www.ti.com/product/OPA2830</a> |
|---------|----------|-----------------|-----------------------------------------------------------------------------------|

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         |
| <b>FR-BIP-1</b> | <b>TID</b>                  | <b>DEU</b>                   | <b>Freising</b> |

**Die Rev:**

| Current      | New                 |
|--------------|---------------------|
| Die Rev [2P] | <b>Die Rev [2P]</b> |
| D            | <b>A</b>            |

**Assembly Site Information:**

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

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

G4



(1P) SN74LS07NSR  
(Q) 2000 (D) 0336  
(31T) LOT: 3959047MLA  
(4W) TKY (1T) 7523483SI2  
(P)  
(2P) REV: (V) 0033317  
(20L) CS0: SHE (21L) CC0: USA  
(22L) AS0: MLA (23L) AC0: MYS

**Group 1 Product Affected:**

OPA2830IDR

**Group 2 Product Affected:**

## OPA2830IDGKR

For alternate parts with similar or improved performance, please visit the product page on [TI.com](http://www.ti.com)

## Qualification Results

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

| Type | #  | Test Name                           | Condition                                                | Duration      | Qual Device:<br>OPA2830IDR | QBS Process<br>Reference:<br>THS3491DDAR | QBS Process<br>Reference:<br>OPA2810IDGKR | QBS Package<br>Reference:<br>TCAN1146DRQ1 | QBS Package<br>Reference:<br>LMC6482IMNOPB | QBS Package<br>Reference:<br>ULQ2003AQDRQ1 | QBS Package<br>Reference:<br>OPA2863QDRQ1 | QBS<br>Package<br>Reference:<br>OPA4187ID |
|------|----|-------------------------------------|----------------------------------------------------------|---------------|----------------------------|------------------------------------------|-------------------------------------------|-------------------------------------------|--------------------------------------------|--------------------------------------------|-------------------------------------------|-------------------------------------------|
| HAST | A2 | Biased HAST                         | 130C/85%RH                                               | 96<br>Hours   | -                          | 3/231/0                                  | 3/231/0                                   | 3/231/0                                   | 1/77/0                                     | 3/231/0                                    | 3/231/0                                   | 3/231/0                                   |
| UHA  | A3 | Autoclave                           | 121C/15psig                                              | 96<br>Hours   | -                          | -                                        | -                                         | 3/231/0                                   | -                                          | 3/231/0                                    | -                                         | -                                         |
| UHA  | A3 | Unbiased HAST                       | 130C/85%RH                                               | 96<br>Hours   | -                          | 3/231/0                                  | 3/231/0                                   | -                                         | 3/231/0                                    | -                                          | 3/231/0                                   | 3/231/0                                   |
| TC   | A4 | Temperature<br>Cycle                | -65C/150C                                                | 500<br>Cycles | -                          | 3/231/0                                  | 3/231/0                                   | -                                         | 3/231/0                                    | -                                          | -                                         | 3/231/0                                   |
| HTSL | A6 | High<br>Temperature<br>Storage Life | 150C                                                     | 1000<br>Hours | -                          | -                                        | -                                         | 3/231/0                                   | -                                          | -                                          | -                                         | -                                         |
| HTSL | A6 | High<br>Temperature<br>Storage Life | 170C                                                     | 420<br>Hours  | -                          | 3/231/0                                  | 3/231/0                                   | -                                         | -                                          | -                                          | -                                         | 3/231/0                                   |
| HTOL | B1 | Life Test                           | 125C                                                     | 1000<br>Hours | -                          | -                                        | 3/231/0                                   | -                                         | -                                          | 3/231/0                                    | -                                         | -                                         |
| HTOL | B1 | Life Test                           | 150C                                                     | 1000<br>Hours | -                          | -                                        | -                                         | 2/154/0                                   | -                                          | -                                          | -                                         | -                                         |
| HTOL | B1 | Life Test                           | 150C                                                     | 300<br>Hours  | -                          | -                                        | -                                         | -                                         | 3/231/0                                    | -                                          | 3/231/0                                   | -                                         |
| HTOL | B1 | Life Test                           | 70C Vcc Max<br>(self heating<br>brings Tj up<br>to 150C) | 300<br>Hours  | -                          | 3/231/0                                  | -                                         | -                                         | -                                          | -                                          | -                                         | -                                         |
| ELFR | B2 | Early Life<br>Failure Rate          | 125C                                                     | 48<br>Hours   | -                          | -                                        | 3/3000/0                                  | -                                         | -                                          | -                                          | 3/2400/0                                  | -                                         |

| Type | #  | Test Name                      | Condition                                                       | Duration      | Qual Device:<br>OPA2830IDR | QBS Process<br>Reference:<br>THS3491DDAR | QBS Process<br>Reference:<br>OPA2810IDGKR | QBS Package<br>Reference:<br>TCAN1146DRQ1 | QBS Package<br>Reference:<br>LMC6482IMNOPB | QBS Package<br>Reference:<br>ULQ2003AQDRQ1 | QBS Package<br>Reference:<br>OPA2863QDRQ1 | QBS<br>Package<br>Reference:<br>OPA4187ID |
|------|----|--------------------------------|-----------------------------------------------------------------|---------------|----------------------------|------------------------------------------|-------------------------------------------|-------------------------------------------|--------------------------------------------|--------------------------------------------|-------------------------------------------|-------------------------------------------|
| ELFR | B2 | Early Life<br>Failure Rate     | 70C (self<br>heating<br>brings Tj up<br>to 150C)                | 24<br>Hours   | -                          | 3/3000/0                                 | -                                         | -                                         | -                                          | -                                          | -                                         | -                                         |
| SD   | C3 | PB Solderability               | Precondition<br>w/155C Dry<br>Bake (4 hrs<br>+/- 15<br>minutes) | -             | -                          | -                                        | -                                         | -                                         | -                                          | 1/15/0                                     | 1/15/0                                    | -                                         |
| SD   | C3 | PB-Free<br>Solderability       | Precondition<br>w/155C Dry<br>Bake (4 hrs<br>+/- 15<br>minutes) | -             | -                          | -                                        | -                                         | -                                         | -                                          | 1/15/0                                     | 1/15/0                                    | -                                         |
| PD   | C4 | Physical<br>Dimensions         | Cpk>1.67                                                        | -             | -                          | -                                        | -                                         | 1/10/0                                    | -                                          | -                                          | 3/30/0                                    | -                                         |
| ESD  | E2 | ESD CDM                        | -                                                               | 250<br>Volts  | 1/3/0                      | 3/9/0                                    | 3/9/0                                     | -                                         | 1/3/0                                      | -                                          | -                                         | 1/3/0                                     |
| ESD  | E2 | ESD CDM                        | -                                                               | 500<br>Volts  | -                          | -                                        | -                                         | -                                         | -                                          | -                                          | 1/3/0                                     | -                                         |
| ESD  | E2 | ESD HBM                        | -                                                               | 1000<br>Volts | 1/3/0                      | 3/9/0                                    | 3/9/0                                     | -                                         | 1/3/0                                      | -                                          | -                                         | 1/3/0                                     |
| ESD  | E2 | ESD HBM                        | -                                                               | 2000<br>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<br>Characterization | Per<br>Datasheet<br>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:<br>OPA2830IDGKR | QBS Reference:<br>THS2491DDAR | QBS Reference:<br>OPA2810IDGKR | QBS Reference:<br>TP392622Q0GMRQ1 | QBS Reference:<br>TE548111LQ0GSRQ1 | QBS Reference:<br>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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