



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN#20230130003.1
Qualification of additional Fab sites (CFAB & DL-LIN) using qualified Process Technology and additional Assembly sites options for select devices
Change Notification / Sample Request

Date: February 01, 2023
To: PREMIER FARNELL 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 of the 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 PCN Team (PCN_ww_admin_team@list.ti.com). For sample requests or sample related questions, contact your local Field Sales Representative. As always, we thank you for your continued business.

PCN Team
SC Business Services

20230130003.1
Attachment: 1

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

| DEVICE | CUSTOMER PART NUMBER |
|---------------|-----------------------------|
| TLC2274ACD | null |
| TLV272ID | null |

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

| | | | | | |
|--|---|---|---|---|---|
| PCN Number: | 20230130003.1 | | PCN Date: | February 01, 2023 | |
| Title: | Qualification of additional Fab sites (CFAB & DL-LIN) using qualified Process Technology and additional Assembly sites options for select devices | | | | |
| Customer Contact: | PCN Manager | | Dept: | Quality Services | |
| Proposed 1st Ship Date: | May 1, 2023 | | Sample requests accepted until: | Mar 3, 2023* | |
| *Sample requests received after Mar 3, 2023 will not be supported. | | | | | |
| Change Type: | | | | | |
| <input checked="" type="checkbox"/> | Assembly Site | <input type="checkbox"/> | Assembly Process | <input type="checkbox"/> | Assembly Materials |
| <input type="checkbox"/> | Design | <input type="checkbox"/> | Electrical Specification | <input type="checkbox"/> | Mechanical Specification |
| <input type="checkbox"/> | Test Site | <input type="checkbox"/> | Packing/Shipping/Labeling | <input type="checkbox"/> | Test Process |
| <input type="checkbox"/> | Wafer Bump Site | <input type="checkbox"/> | Wafer Bump Material | <input type="checkbox"/> | Wafer Bump Process |
| <input checked="" type="checkbox"/> | Wafer Fab Site | <input checked="" type="checkbox"/> | Wafer Fab Materials | <input type="checkbox"/> | Wafer Fab Process |
| | | <input type="checkbox"/> | Part number change | | |
| PCN Details | | | | | |
| Description of Change: | | | | | |
| Qualification of additional Fab sites (CFAB & DL-LIN) using qualified Process Technology and additional Assembly sites options for the list of devices in the product affected section below. | | | | | |
| Current Fab Site | | | Additional Fab Site | | |
| Current Fab Site | Process | Wafer Diameter | Additional Fab Site | Process | Wafer Diameter |
| DL-LIN | LBC3S | 150mm | CFAB DL-LIN | LBC3S | 200mm |
| All devices listed below are currently in one or two of the following 3 Assembly sites: TI Malaysia, TI Taiwan, or TI Mexico. After expiration of this PCN, all devices can be built from any of these 3 assembly sites. BOM Materials are the same between all three sites. | | | | | |
| 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 | |
| <input checked="" type="checkbox"/> No Change | <input checked="" type="checkbox"/> No Change | <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 |
|---------------|-----------------------------|------------------------------|----------------|
| DL-LIN | DLN | USA | Dallas |
| CFAB | CU3 | CHN | Chengdu |
| DL-LIN | DLN | USA | Dallas |

Assembly Site Information:

| Assembly Site | Assembly Site Origin (22L) | Assembly Country Code (23L) | Assembly City |
|---------------|----------------------------|-----------------------------|---------------------------|
| TI Mexico | MEX | MEX | Aguascalientes |
| TI Malaysia | MLA | MYS | KUALA LUMPUR |
| TI Taiwan | TAI | TWN | Chung Ho, New Taipei City |

Sample product shipping label (not actual product label)

Product Affected:

Group 1 Device list (CFAB as additional Fab site & TI Mexico, Malaysia, & Taiwan Assembly sites)

| | | | |
|-------------|-------------|-------------|-------------|
| TCA4311ADR | TLC2254IDR | TLC2274ACDR | TLV2264AID |
| TLC084AID | TLC2264AID | TLC2274AID | TLV2264AIDR |
| TLC084AIDR | TLC2264AIDR | TLC2274AIDR | TLV2264ID |
| TLC084CD | TLC2264CD | TLC2274CD | TLV2264IDR |
| TLC084CDR | TLC2264CDR | TLC2274CDR | TLV2371ID |
| TLC084ID | TLC2264ID | TLC2274ID | TLV2371IDR |
| TLC084IDR | TLC2264IDR | TLC2274IDR | TLV2374ID |
| TLC2252AID | TLC2272ACD | TLV2252AID | TLV2374IDR |
| TLC2252AIDR | TLC2272ACDR | TLV2252AIDR | TLV271CDR |
| TLC2252CD | TLC2272AID | TLV2252ID | TLV271ID |
| TLC2252CDR | TLC2272AIDR | TLV2252IDR | TLV271IDR |
| TLC2252IDR | TLC2272CD | TLV2254AID | TLV274CD |
| TLC2254AID | TLC2272CDR | TLV2254AIDR | TLV274CDR |
| TLC2254AIDR | TLC2272ID | TLV2254ID | TLV274ID |
| TLC2254CDR | TLC2272IDR | TLV2254IDR | TLV274IDR |
| TLC2254ID | TLC2274ACD | | |

Group 2 Device list (CFAB & DFAB8 as additional Fab sites & TI Mexico, Malaysia, & Taiwan Assembly sites)

| | | | |
|------------|------------|-------------|--------------|
| TLC072AID | TLC082AID | TLV2462AIDR | TLV2474ID |
| TLC072AIDR | TLC082AIDR | TLV2462CD | TLV2474IDR |
| TLC072CD | TLC082CD | TLV2462CDR | TLV272CDR |
| TLC072CDR | TLC082CDR | TLV2462ID | TLV272ID |
| TLC072ID | TLC082ID | TLV2462IDR | TLV272IDR |
| TLC072IDR | TLC082IDR | TLV2463AIDR | TPS3705-30D |
| TLC074AID | TLC083CDR | TLV2463CDR | TPS3705-30DR |
| TLC074AIDR | TLV2370IDR | TLV2463ID | TPS3705-33D |
| TLC074CD | TLV2372ID | TLV2474AID | TPS3705-33DR |
| TLC074CDR | TLV2372IDR | TLV2474AIDR | TPS3705-50D |
| TLC074ID | TLV2373IDR | TLV2474CD | TPS3705-50DR |
| TLC074IDR | TLV2462AID | TLV2474CDR | |

For alternate parts with similar or improved performance, please visit the product page on TI.com



**TI Information
Selective Disclosure**

Qualification Results

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

| Type | Test Name / Condition | Duration | Qual Device: TLV2401QDBVRQ1 | QBS Process Reference: MAX3243IPWG4DL |
|------|----------------------------------|-----------------------------|--------------------------------|---|
| HAST | Biased HAST, 130C/85%RH | 96 Hours | 3/231/0 | 3/231/0 |
| AC | Autoclave 121C | 96 Hours | 3/231/0 | 3/231/0 |
| TC | Temperature Cycle, - 65/150C | 500 Cycles | 3/231/0 | 3/231/0 |
| HTSL | High Temp Storage Bake 150C | 1000 Hours | - | 3/231/0 |
| HTSL | High Temp Storage Bake 175C | 500 Hours | 3/135/0 | - |
| HTOL | Life Test, 150C | 408 Hours | 3/231/0 | 3/231/0 |
| ELFR | Early Life Failure Rate, 125C | 48 Hours | - | 3/2400/0 |
| HBM | ESD - HBM - Q100 | 500 V | 1/3/0 | - |
| CDM | ESD - CDM - Q100 | 1500 V | 1/3/0 | - |
| LU | Latch-up | (per JESD78) | 1/6/0 | - |
| ED | Electrical Characterization | Per Datasheet parameters | 3/90/0 | - |

- QBS: Qual By Similarity
 - Qual Device TLV2401QDBVRQ1 is qualified at LEVEL1-260C
A1 (PC): Preconditioning:
 Performed for THB, Biased HAST, AC, uHAST, TC & PTC samples, as applicable.

Ambient Operating Temperature by Automotive Grade Level:
 Grade 0 (or E): -40°C to +150°C
 Grade 1 (or Q): -40°C to +125°C
 Grade 2 (or T): -40°C to +105°C
 Grade 3 (or L): -40°C to +85°C

E1 (TEST): Electrical test temperatures of Qual samples (High temperature according to Grade level):
 Room/Hot/Cold: HTOL, ED
 Room/Hot: THB / HAST, TC / PTC, HTSL, ELFR, ESD & LU
 Room: AC/uHAST

Green/Pb-free Status:
 Qualified Pb-Free(SMT) and Green
 TI Qualification ID: 20190124-128331



**TI Information
 Selective Disclosure**

Qualification Results

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

| Type | Test Name / Condition | Duration | Qual Device: TLC2264AQPWRQ1 | Qual Device: TLC2264AIDRCT | QBS Process Reference: CD3301RHHR | QBS Package Reference: TLV9064QPWRQ1 |
|------|-----------------------------|--------------------------|--------------------------------|-------------------------------|---|---|
| HTOL | Life Test, 150C | 300 Hours | 1/3/0 | - | 3/231/0 | - |
| HTSL | High Temp Storage Bake 170C | 420 Hours | - | - | 3/231/0 | 1/45/0 |
| HAST | Biased HAST, 130C/85%RH | 96 Hours | - | - | 3/231/0 | - |
| AC | Autoclave 121C | 96 Hours | - | - | 3/231/0 | 3/231/0 |
| TC | Temperature Cycle, -65/150C | 500 Cycles | - | - | 3/231/0 | 3/231/0 |
| HBM | ESD - HBM | 2000 V | 1/3/0 | - | 1/3/0 | - |
| CDM | ESD - CDM | 750 V | 1/3/0 | - | 1/3/0 | - |
| LU | Latch-up | (per JESD78) | 1/6/0 | - | 1/6/0 | - |
| ED | Electrical Characterization | Per Datasheet Parameters | 1/30/0 | - | 1/30/0 | - |
| MQ | Assembly MQ | Per Site Specifications | Pass | Pass | Pass | Pass |

- QBS: Qual By Similarity
 - Qual Device TLC2264AQPWRQ1 is qualified at LEVEL1-260C
 - 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/>

Green/Pb-free Status:
 Qualified Pb-Free(SMT) and Green

TI Qualification ID: 20200903-135990



**TI Information
 Selective Disclosure**

Qualification Results

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

| Type | Test Name / Condition | Duration | Qual Device: TLV2464CPWR | QBS Process Reference: CD3301RHHR | QBS Package Reference: TPS2042BD | QBS Package Reference: TPS2419DR |
|------|-----------------------------|--------------------------|-----------------------------|---|-------------------------------------|-------------------------------------|
| HTOL | Life Test, 150C | 300 Hours | - | 3/231/0 | - | - |
| HTSL | High Temp Storage Bake 170C | 420 Hours | - | 3/231/0 | 3/231/0 | 3/231/0 |
| HAST | Biased HAST, 130C/85%RH | 96 Hours | - | 3/231/0 | - | 3/231/0 |
| AC | Autoclave 121C | 96 Hours | - | 3/231/0 | 3/231/0 | 3/231/0 |
| TC | Temperature Cycle, -65/150C | 500 Cycles | - | 3/231/0 | 3/231/0 | 3/231/0 |
| HBM | ESD - HBM | 4000 V | 1/3/0 | 1/3/0 | - | - |
| CDM | ESD - CDM | 1000 V | 1/3/0 | 1/3/0 | - | - |
| LU | Latch-up | (per JESD78) | 1/6/0 | 1/6/0 | - | - |
| ED | Electrical Characterization | Per Datasheet Parameters | 1/30/0 | 1/30/0 | - | - |
| MQ | Assembly MQ | Per Site Specifications | Pass | Pass | Pass | Pass |

- QBS: Qual By Similarity
 - Qual Device TLV2464CPWR is qualified at LEVEL1-260C
 - 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/>

Green/Pb-free Status:
 Qualified Pb-Free(SMT) and Green

TI Qualification ID: 20210308-139022

Qualification Report

Product Attributes

| Attributes | Qual Device: 1P8T245NSR | Qual Device: ADS900E | Qual Device: PCM1801U | Qual Device: SN65HVD1781DR | Qual Device: TCA9546ADR | Qual Device: TCA9546ADR_RLF | Qual Device: TL494IDR |
|---------------------|----------------------------|-------------------------|--------------------------|-------------------------------|----------------------------|--------------------------------|--------------------------|
| Assembly Site | MLA | MLA | MLA | MLA | MLA | MLA | FMX |
| Package Family | SOP | SSOP | SOIC | SOIC | SOIC | SOIC | SOIC |
| Flammability Rating | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V0 |
| Wafer Fab Supplier | FFAB | TSMC WF2 | TSMC WF2 | DM5 | MH8 | MH8 | SFAB |
| Wafer Fab Process | ASL3C | 0.6-DPDM | 0.6-DPDM | LBC5X | LBC7 | LBC7 | J11 |

Product Attributes

| Attributes | Qual Device: TLC320AD77CDBR | Qual Device: TPS2074DB | Qual Device: TPS2101D | Qual Device: TPS2214ADB | Qual Device: TSS721AD | Qual Device: UC27131D | QBS Package Reference: ULQ2003AQDRQ1_STDLF |
|---------------------|--------------------------------|---------------------------|--------------------------|----------------------------|--------------------------|--------------------------|---|
| Assembly Site | MLA | MLA | TAI | MLA | TAI | FMX | FMX |
| Package Family | SSOP | SSOP | SOIC | SSOP | SOIC | SOIC | SOIC |
| Flammability Rating | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 |
| Wafer Fab Supplier | ANAM-1, DFAB | DFAB | DFAB | DFAB | SFAB | SFAB | SFAB |
| Wafer Fab Process | 33A21X3, 33C10X3 | LBC3S | LBC3S | LBC3S | J11 | J1-PWR1 | J11-SLM |

- QBS: Qual By Similarity

- Qual Devices qualified at LEVEL1-260C: TL494IDR, TSS721AD, 1P8T245NSR, PCM1801U, TLC320AD77CDBR, TPS2074DB, TPS2101D, SN65HVD1781DR, TCA9546ADR, TPS2214ADB

- Qual Devices qualified at LEVEL2-260C: ADS900E, UC27131D

- Device TLC320AD77CDBR contains multiple dies.

Qualification Results

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

| Type | Test Name / Condition | Duration | Qual Device: 1P8T245NSR | Qual Device: ADS900E | Qual Device: PCM1801U | Qual Device: SN65HVD1781DR | Qual Device: TCA9546ADR | Qual Device: TCA9546ADR_RLF | Qual Device: TL494IDR |
|-------|------------------------------|-------------------------------|----------------------------|-------------------------|--------------------------|-------------------------------|----------------------------|--------------------------------|--------------------------|
| AC | Autoclave 121C | 96 Hours | 3/231/0 | - | 3/231/0 | - | 3/231/0 | 3/231/0 | - |
| FLAM | Flammability (UL 94V-0) | - | - | - | - | - | 3/15/0 | 3/15/0 | - |
| HAST | Biased HAST, 130C/85%RH | 96 Hours | - | - | - | - | - | - | 3/231/0 |
| HTSL | High Temp Storage Bake 170C | 420 Hours | 3/231/0 | - | 3/231/0 | - | 3/231/0 | 3/231/0 | - |
| MQ | Manufacturability (Assembly) | (per mfg. Site specification) | Pass | Pass | Pass | Pass | Pass | Pass | - |
| TC | Temperature Cycle, -65/150C | 500 Cycles | 3/231/0 | 3/222/0 | 3/231/0 | 3/231/0 | 3/231/0 | 3/231/0 | - |
| TC-BP | Post TC Bond Pull | Wires | - | - | - | 3/90/0 | 3/162/0 | 3/90/0 | - |

Qualification Results

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

| Type | Test Name / Condition | Duration | Qual Device: TLC320AD77CDBR | Qual Device: TPS2074DB | Qual Device: TPS2101D | Qual Device: TPS2214ADB | Qual Device: TSS721AD | Qual Device: UC27131D | QBS Package Reference: ULQ2003AQDRQ1_STDLF |
|-------|-----------------------------------|-------------------------------|--------------------------------|---------------------------|--------------------------|----------------------------|--------------------------|--------------------------|---|
| AC | Autoclave 121C | 96 Hours | 3/231/0 | 3/231/0 | - | 3/231/0 | - | - | 3/231/0 |
| HAST | Biased HAST, 130C/85%RH | 96 Hours | - | - | - | - | - | - | 3/231/0 |
| HTOL | Life Test, 150C | 408 Hours | - | - | - | - | - | - | 3/231/0 |
| HTSL | High Temp Storage Bake 150C | 1000 Hours | - | - | - | - | - | - | 1/45/0 |
| HTSL | High Temp Storage Bake 170C | 420 Hours | 3/231/0 | 3/231/0 | - | 3/231/0 | - | - | - |
| MQ | Manufacturability (Assembly) | (per mfg. Site specification) | Pass | Pass | Pass | Pass | Pass | Pass | - |
| MQ | Manufacturability (Auto Assembly) | (per automotive requirements) | - | - | - | - | - | - | Pass |
| TC | Temperature Cycle, -65/150C | 500 Cycles | 3/231/0 | 3/231/0 | 3/231/0 | 3/231/0 | 3/231/0 | - | 3/231/0 |
| TC-BP | Post TC Bond Pull | Wires | - | - | - | - | - | - | 1/30/0 |

- 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/>

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

TI Qualification ID: 20141019-109101, 20140520-104903 (QBS)

For questions regarding this notice, e-mails can be sent to the contact below or your local Field Sales Representative.

| Location | E-Mail |
|---------------------------|--|
| WW Change Management Team | PCN_ww_admin_team@list.ti.com |

IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES “AS IS” AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disdaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI’s products are provided subject to TI’s Terms of Sale (www.ti.com/legal/termsofsale.html) or other applicable terms available either on ti.com or provided in conjunction with such TI products. TI’s provision of these resources does not expand or otherwise alter TI’s applicable warranties or warranty disclaimers for TI products.