12500 TI Boulevard, MS 8640, Dallas, Texas 75243

# PCN# 20250319001.2
# Qualification of RFAB using qualified Process Technology, Die Revision, Datasheet and additional Assembly BOM options for select devices
# Change Notification / Sample Request

**Date:** May 01, 2025
**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 60 days of the date of this notice. Lack of acknowledgement of this notice within 60 days constitutes acceptance and approval of this change. If samples or additional data are required, requests must be received within 60 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 60 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.

TI values customer engagement and feedback related to TI changes. Customers should contact TI if there are questions or concerns regarding a change notification.

Change Management Team
SC Business Services

## 20250319001.2
## 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** |
|---|---|
| UCC2800QDRQ1 | NULL |
| UCC2804QDRQ1 | UCC2804QDRQ1 |
| UCC2803QDRQ1 | UCC2803QDRQ1 |
| UCC2813QDR-2Q1 | UCC2813QDR-2Q1 |
| UCC2805QDRQ1 | UCC2805QDRQ1 |
| UCC2813QDR-0Q1 | UCC2813QDR-0Q1 |
| UCC2801QDRQ1 | NULL |
| UCC2813QDR-5Q1 | UCC2813QDR-5Q1 |
| UCC2813QPWR-3Q1 | UCC2813QPWR-3Q1 |
| UCC2802QDRQ1 | UCC2802QDRQ1 |

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

| | | | |
|---|---|---|---|
| **PCN Number:** | 20250319001.2 | **PCN Date:** | May 01, 2025 |
| **Title:** | Qualification of RFAB using qualified Process Technology, Die Revision, Datasheet and additional Assembly BOM options for select devices | | |
| **Customer Contact:** | Change Management team | **Dept:** | Quality Services |
| **Proposed 1st Ship Date:** | October 28, 2025 | **Sample requests accepted until:** | June 30, 2025* |

***Sample requests received after June 30, 2025 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 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 | IMP-PWR1 | 150 mm | RFAB | LBC9 | 300 mm |

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

| | Current | New |
|---|---|---|
| Probe Site | SH-BIP-1 | None |

Construction differences are as follows:

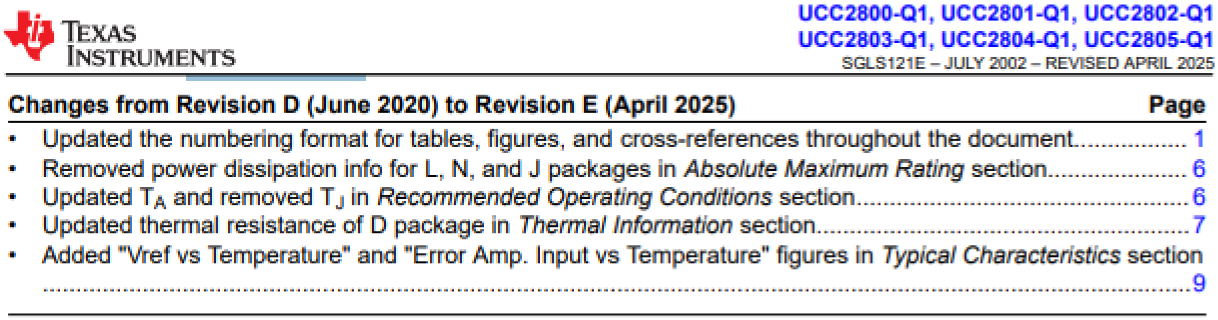
**Group 1 Device:**

| | Current | Additional |
|---|---|---|
| Wire type/diam | 1.18mil Au | 0.8mil Cu |
| Device marking | TI logo | TI letter |

**Group 2 Device:**

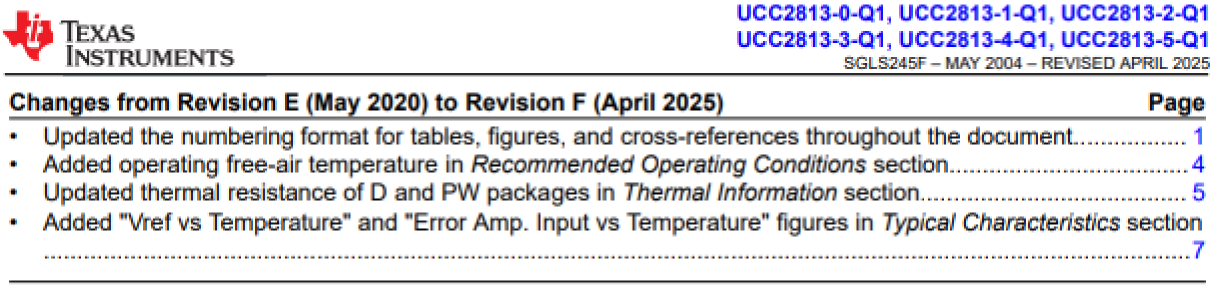
| | Current | Additional |
|---|---|---|
| Wire type/diam | 1.15mil Au | 0.8mil Cu |
| Mount compound | 4042500 | 4147858 |
| Mold compound | 4206193 | 4211471 |

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.


UCC2800-Q1, UCC2801-Q1, UCC2802-Q1
UCC2803-Q1, UCC2804-Q1, UCC2805-Q1
SGLS121E – JULY 2002 – REVISED APRIL 2025

**Changes from Revision D (June 2020) to Revision E (April 2025)** **Page**

- Updated the numbering format for tables, figures, and cross-references throughout the document................. 1
- Removed power dissipation info for L, N, and J packages in *Absolute Maximum Rating* section..................... 6
- Updated $T_A$ and removed $T_J$ in *Recommended Operating Conditions* section................................................... 6
- Updated thermal resistance of D package in *Thermal Information* section......................................................... 7
- Added "Vref vs Temperature" and "Error Amp. Input vs Temperature" figures in *Typical Characteristics* section .......................................................................................................................................................................9


UCC2813-0-Q1, UCC2813-1-Q1, UCC2813-2-Q1
UCC2813-3-Q1, UCC2813-4-Q1, UCC2813-5-Q1
SGLS245F – MAY 2004 – REVISED APRIL 2025

**Changes from Revision E (May 2020) to Revision F (April 2025)** **Page**

- Updated the numbering format for tables, figures, and cross-references throughout the document................. 1
- Added operating free-air temperature in *Recommended Operating Conditions* section.................................... 4
- Updated thermal resistance of D and PW packages in *Thermal Information* section........................................ 5
- Added "Vref vs Temperature" and "Error Amp. Input vs Temperature" figures in *Typical Characteristics* section .......................................................................................................................................................................7

| **Product Folder** | **Current Datasheet Number** | **New Datasheet Number** | **Link to full datasheet** |
|---|---|---|---|
| UCC280x-Q1 | SGLS121D | SGLS121E | http://www.ti.com/product/UCC2800-Q1 |
| UCC2813-x-Q1 | SGLS245E | SGLS245F | http://www.ti.com/product/UCC2813-0-Q1 |

Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.

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 |
|---|---|---|---|
| SH-BIP-1 | SHE | USA | Sherman |
| **RFAB** | **RFB** | **USA** | **Richardson** |

**Die Rev:**

| **Current** | **New** |
|---|---|
| Die Rev [2P] | **Die Rev [2P]** |
| - | **B** |

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

## Product Affected:

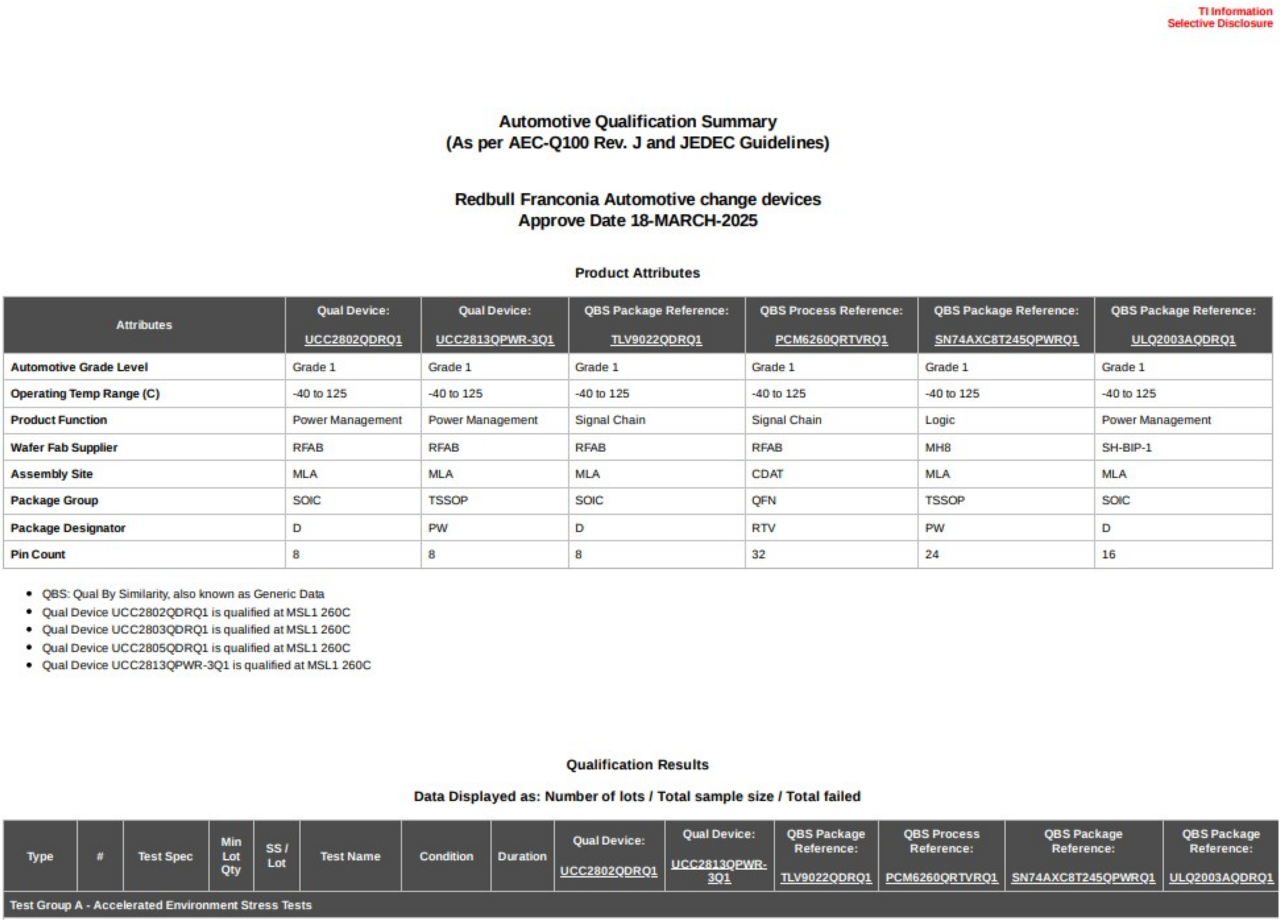
### Group 1:

| | | | |
|---|---|---|---|
| UCC2800QDRQ1 | UCC2804QDRQ1 | UCC2813QDR-0Q1 | UCC2813QDR-5Q1 |
| UCC2801QDRQ1 | UCC2805QDRCT | UCC2813QDR-2Q1 | |
| UCC2802QDRQ1 | UCC2805QDRHT | UCC2813QDR-3Q1 | |
| UCC2803QDRQ1 | UCC2805QDRQ1 | UCC2813QDR-4Q1 | |

### Group 2:

UCC2813QPWR-3Q1

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



TI Information
Selective Disclosure

Automotive Qualification Summary
(As per AEC-Q100 Rev. J and JEDEC Guidelines)

Redbull Franconia Automotive change devices
Approve Date 18-MARCH-2025

Product Attributes

| Attributes | Qual Device: UCC2802QDRQ1 | Qual Device: UCC2813QPWR-3Q1 | QBS Package Reference: TLV9022QDRQ1 | QBS Process Reference: PCM6260QRTVRQ1 | QBS Package Reference: SN74AXC8T245QPWRQ1 | QBS Package Reference: ULQ2003AQDRQ1 |
|---|---|---|---|---|---|---|
| **Automotive Grade Level** | Grade 1 | Grade 1 | Grade 1 | Grade 1 | Grade 1 | Grade 1 |
| **Operating Temp Range (C)** | -40 to 125 | -40 to 125 | -40 to 125 | -40 to 125 | -40 to 125 | -40 to 125 |
| **Product Function** | Power Management | Power Management | Signal Chain | Signal Chain | Logic | Power Management |
| **Wafer Fab Supplier** | RFAB | RFAB | RFAB | RFAB | MH8 | SH-BIP-1 |
| **Assembly Site** | MLA | MLA | MLA | CDAT | MLA | MLA |
| **Package Group** | SOIC | TSSOP | SOIC | QFN | TSSOP | SOIC |
| **Package Designator** | D | PW | D | RTV | PW | D |
| **Pin Count** | 8 | 8 | 8 | 32 | 24 | 16 |

- QBS: Qual By Similarity, also known as Generic Data
- Qual Device UCC2802QDRQ1 is qualified at MSL1 260C
- Qual Device UCC2803QDRQ1 is qualified at MSL1 260C
- Qual Device UCC2805QDRQ1 is qualified at MSL1 260C
- Qual Device UCC2813QPWR-3Q1 is qualified at MSL1 260C

Qualification Results

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

| Type | # | Test Spec | Min Lot Qty | SS / Lot | Test Name | Condition | Duration | Qual Device: UCC2802QDRQ1 | Qual Device: UCC2813QPWR-3Q1 | QBS Package Reference: TLV9022QDRQ1 | QBS Process Reference: PCM6260QRTVRQ1 | QBS Package Reference: SN74AXC8T245QPWRQ1 | QBS Package Reference: ULQ2003AQDRQ1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Test Group A - Accelerated Environment Stress Tests | | | | | | | | | | | | | |

| Type | # | Test Spec | Min Lot Qty | SS / Lot | Test Name | Condition | Duration | Qual Device:<br>UCC2802QDRQ1 | Qual Device:<br>UCC2813QPWR-3Q1 | QBS Package Reference:<br>TLV9022QDRQ1 | QBS Process Reference:<br>PCM6260QRTVRQ1 | QBS Package Reference:<br>SN74AXC8T245QPWRQ1 | QBS Package Reference:<br>ULQ2003AQDRQ1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PC | A1 | JEDEC J-STD-020 JESD22-A113 | 3 | 77 | Preconditioning | MSL1 260C | - | No Fails | No Fails | No Fails | - | No Fails | No Fails |
| HAST | A2 | JEDEC JESD22-A110 | 3 | 77 | Biased HAST | 130C/85%RH | 96 Hours | 1/77/0 | - | 3/231/0 | - | 3/231/0 | 3/231/0 |
| AC/UHAST | A3 | JEDEC JESD22-A102/JEDEC JESD22-A118 | 3 | 77 | Autoclave | 121C/15psig | 96 Hours | 1/77/0 | - | - | - | 3/231/0 | 3/231/0 |
| AC/UHAST | A3 | JEDEC JESD22-A102/JEDEC JESD22-A118 | 3 | 77 | Unbiased HAST | 130C/85%RH | 96 Hours | - | - | 3/231/0 | - | - | - |
| TC | A4 | JEDEC JESD22-A104 and Appendix 3 | 3 | 77 | Temperature Cycle | -65C/150C | 500 Cycles | 1/77/0 | 1/77/0 | 3/231/0 | - | 3/231/0 | 3/231/0 |
| TC-BP | A4 | MIL-STD883 Method 2011 | 1 | 5 | Post Temp Cycle Bond Pull | - | - | 1/5/0 | 1/5/0 | - | - | - | - |
| TC-SAM | A4 | - | 3 | 3 | Post TC SAM | <50% delamination | - | 1/12/0 | - | - | - | - | - |
| HTSL | A6 | JEDEC JESD22-A103 | 1 | 45 | High Temperature Storage Life | 150C | 1000 Hours | 1/77/0 | - | 3/135/0 | - | 3/135/0 | 3/135/0 |
| **Test Group B - Accelerated Lifetime Simulation Tests** | | | | | | | | | | | | | |
| HTOL | B1 | JEDEC JESD22-A108 | 3 | 77 | Life Test | 125C | 1000 Hours | - | - | - | 3/231/0 | - | - |
| ELFR | B2 | AEC Q100-008 | 3 | 800 | Early Life Failure Rate | 125C | 48 Hours | - | - | - | 3/2400/0 | - | - |
| **Test Group C - Package Assembly Integrity Tests** | | | | | | | | | | | | | |
| WBS | C1 | AEC Q100-001 | 1 | 30 | Wire Bond Shear | Minimum of 5 devices, 30 wires Cpk>1.67 | Wires | 1/30/0 | 1/30/0 | 3/90/0 | - | 3/90/0 | 3/90/0 |
| WBP | C2 | MIL-STD883 Method 2011 | 1 | 30 | Wire Bond Pull | Minimum of 5 devices, 30 wires Cpk>1.67 | Wires | 1/30/0 | 1/30/0 | 3/90/0 | - | 3/90/0 | 3/90/0 |
| SD | C3 | JEDEC J-STD-002 | 1 | 15 | PB Solderability | >95% Lead Coverage | - | - | - | 1/15/0 | - | - | 1/15/0 |
| SD | C3 | JEDEC J-STD-002 | 1 | 15 | PB-Free Solderability | >95% Lead Coverage | - | 1/15/0 | - | 1/15/0 | - | - | 1/15/0 |
| PD | C4 | JEDEC JESD22-B100 and B108 | 3 | 10 | Physical Dimensions | Cpk>1.67 | - | 1/10/0 | 1/10/0 | 3/30/0 | - | - | - |
| **Test Group D - Die Fabrication Reliability Tests** | | | | | | | | | | | | | |
| EM | D1 | JESD61 | - | - | Electromigration | - | - | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements |
| TDDB | D2 | JESD35 | - | - | Time Dependent Dielectric Breakdown | - | - | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements |
| HCI | D3 | JESD60 & 28 | - | - | Hot Carrier Injection | - | - | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements |
| BTI | D4 | - | - | - | Bias Temperature Instability | - | - | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements |
| SM | D5 | - | - | - | Stress Migration | - | - | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements |
| **Test Group E - Electrical Verification Tests** | | | | | | | | | | | | | |
| ESD | E2 | AEC Q100-002 | 1 | 3 | ESD HBM | - | 2000 Volts | 1/3/0 | - | 1/3/0 | 1/3/0 | - | - |
| ESD | E3 | AEC Q100-011 | 1 | 3 | ESD CDM | - | 500 Volts | 1/3/0 | - | 1/3/0 | 1/3/0 | - | - |
| LU | E4 | AEC Q100-004 | 1 | 3 | Latch-Up | Per AEC Q100-004 | - | 1/3/0 | - | 1/6/0 | 1/6/0 | - | - |
| ED | E5 | AEC Q100-009 | 3 | 30 | Electrical Distributions | Cpk>1.67 Room, hot, and cold | - | 3/90/0 | - | 3/90/0 | 3/90/0 | - | - |
| **Additional Tests** | | | | | | | | | | | | | |

- 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

**Ambient Operating Temperature by Automotive Grade Level:**

- Grade 0 (or E): -40C to +150C
- Grade 1 (or Q): -40C to +125C
- Grade 2 (or T): -40C to +105C
- Grade 3 (or I) : -40C to +85C

**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

Quality and Environmental data is available at TI's external Web site: http://www.ti.com/

TI Qualification ID: R-CHG-2310-031

**TI Information**
**Selective Disclosure**

## Automotive Qualification Summary
## (As per AEC and JEDEC Guidelines)

### Q006 SSOP at MLA
### Approve Date 25-JULY-2019

| Attributes | Qual Device: UCC2813QPWR-3Q1 | QBS Package Reference: SN74AXC8T245QPWRQ1 |
|---|---|---|
| **Automotive Grade Level** | Grade 1 | Grade 1 |
| **Operating Temp Range (C)** | -40 to 125 | -40 to 125 |
| **Product Function** | Power Management | Logic |
| **Wafer Fab Supplier** | RFAB | MH8 |
| **Assembly Site** | MLA | MLA |
| **Package Group** | TSSOP | TSSOP |
| **Package Designator** | PW | PW |
| **Pin Count** | 8 | 24 |

**Qualification Results**

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

| Type | # | Test Spec | Min Lot Qty | SS / Lot | Test Name | Condition | Duration | Qual Device: UCC2813QPWR-3Q1 | QBS Reference: SN74AXC8T245QPWRQ1 |
|---|---|---|---|---|---|---|---|---|---|
| **Test Group A - Accelerated Environment Stress Tests** | | | | | | | | | |
| PC | A1 | JEDEC J-STD-020 JESD22-A113 | 3 | 77 | Preconditioning | MSL1 260C | - | - | Pass |
| PC | A1.1 | - | 3 | 22 | SAM Precon Pre | Review for delamination | - | - | 3/66/0 |
| PC | A1.2 | - | 3 | 22 | SAM Precon Post | Review for delamination | - | - | 3/66/0 |
| HAST | A2.1 | JEDEC JESD22-A110 | 3 | 77 | Biased HAST | 130C/85%RH | 96 Hours | - | 3/231/0 |
| HAST | A2.1.2 | - | 3 | 1 | Cross Section, post bHAST, 1X | Post stress cross section | Completed | - | 3/3/0 |
| HAST | A2.1.3 | - | 3 | 3 | Wire Bond Shear, post bHAST, 1X | Post stress | - | - | 3/9/0 |
| HAST | A2.1.4 | - | 3 | 3 | Bond Pull over Stitch, post bHAST, 1X | Post stress | - | - | 3/9/0 |
| HAST | A2.1.5 | - | 3 | 3 | Bond Pull over Ball, post bHAST, 1X | Post stress | - | - | 3/9/0 |
| HAST | A2.2 | JEDEC JESD22-A110 | 3 | 70 | Biased HAST | 130C/85%RH | 192 Hours | - | 3/210/0 |
| HAST | A2.2.1 | - | 3 | 22 | SAM Analysis, post bHAST 2X | Review for delamination | Completed | - | 3/66/0 |
| HAST | A2.2.2 | - | 3 | 1 | Cross Section, post bHAST, 2X | Post stress cross section | Completed | - | 3/3/0 |
| HAST | A2.2.3 | - | 3 | 3 | Wire Bond Shear, post bHAST, 2X | Post stress | - | - | 3/9/0 |
| HAST | A2.2.4 | - | 3 | 3 | Bond Pull over Stitch, post bHAST, 2X | Post stress | - | - | 3/9/0 |
| HAST | A2.2.5 | - | 3 | 3 | Bond Pull over Ball, post bHAST, 2X | Post stress | - | - | 3/9/0 |
| TC | A4.1 | JEDEC JESD22-A104 and Appendix 3 | 3 | 77 | Temperature Cycle | -65C/150C | 500 Cycles | - | 3/231/0 |
| TC | A4.1.1 | - | 3 | 22 | SAM Analysis, post TC 1X | Review for delamination | Completed | - | 3/66/0 |
| TC | A4.1.2 | - | 3 | 1 | Cross Section, post TC, 1X | Post stress cross section | Completed | - | 3/3/0 |
| TC | A4.1.3 | - | 3 | 3 | Wire Bond Shear, post TC, 1X | Post stress | - | - | 3/9/0 |
| TC | A4.1.4 | - | 3 | 3 | Bond Pull over Stitch, post TC, 1X | Post stress | - | - | 3/9/0 |
| TC | A4.1.5 | - | 3 | 3 | Bond Pull over Ball, post TC, 1X | Post stress | - | - | 3/9/0 |
| TC | A4.2 | JEDEC JESD22-A104 and Appendix 3 | 3 | 70 | Temperature Cycle | -65C/150C | 1000 Cycles | - | 3/210/0 |
| TC | A4.2.1 | - | 3 | 22 | SAM Analysis, post TC, 2X | Review for delamination | Completed | - | 3/66/0 |
| TC | A4.2.2 | - | 3 | 1 | Cross Section, post TC, 2X | Post stress cross section | Completed | - | 3/3/0 |
| TC | A4.2.3 | - | 3 | 3 | Wire Bond Shear, post TC, 2X | Post stress | - | - | 3/9/0 |
| TC | A4.2.4 | - | 3 | 3 | Bond Pull over Stitch, post TC, 2X | Post stress | - | - | 3/9/0 |
| TC | A4.2.5 | - | 3 | 3 | Bond Pull over Ball, post TC, 2X | Post stress | - | - | 3/9/0 |
| HTSL | A6.1 | JEDEC JESD22-A103 | 3 | 45 | High Temperature Storage Life | 150C | 1000 Hours | - | 3/135/0 |
| HTSL | A6.1.1 | - | 3 | 1 | Cross Section, post HTSL, 1X | Post stress cross section | Completed | - | 3/3/0 |
| HTSL | A6.2 | JEDEC JESD22-A103 | 3 | 44 | High Temperature Storage Life | 150C | 2000 Hours | - | 3/132/0 |
| HTSL | A6.2.1 | - | 3 | 1 | Cross Section, post HTSL, 2X | Post stress cross section | Completed | - | 3/3/0 |
| **Test Group C - Package Assembly Integrity Tests** | | | | | | | | | |
| WBS | C1 | AEC Q100-001 | 1 | 30 | Wire Bond Shear | Minimum of 5 devices, 30 wires Cpk>1.67 | Wires | 1/30/0 | 3/90/0 |

| Type | # | Test Spec | Min Lot Qty | SS / Lot | Test Name | Condition | Duration | Qual Device: UCC2813QPWR-3Q1 | QBS Reference: SN74AXC8T245QPWRQ1 |
|---|---|---|---|---|---|---|---|---|---|
| WBP | C2 | MIL-STD883 Method 2011 | 1 | 30 | Wire Bond Pull | Minimum of 5 devices, 30 wires Cpk>1.67 | Wires | 1/30/0 | 3/90/0 |

- QBS: Qual By Similarity, also known as Generic Data
- Qual Device UCC2802QDRQ1 is qualified at MSL1 260C
- Qual Device UCC2803QDRQ1 is qualified at MSL1 260C
- Qual Device UCC2805QDRQ1 is qualified at MSL1 260C
- Qual Device UCC2813QPWR-3Q1 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

**Ambient Operating Temperature by Automotive Grade Level:**

- Grade 0 (or E): -40C to +150C
- Grade 1 (or Q): -40C to +125C
- Grade 2 (or T): -40C to +105C
- Grade 3 (or I) : -40C to +85C

**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

Quality and Environmental data is available at TI's external Web site: http://www.ti.com/

TI Qualification ID: R-CHG-2310-031

[1]-EOS - handling related

## Automotive Qualification Summary
## (As per AEC and JEDEC Guidelines)

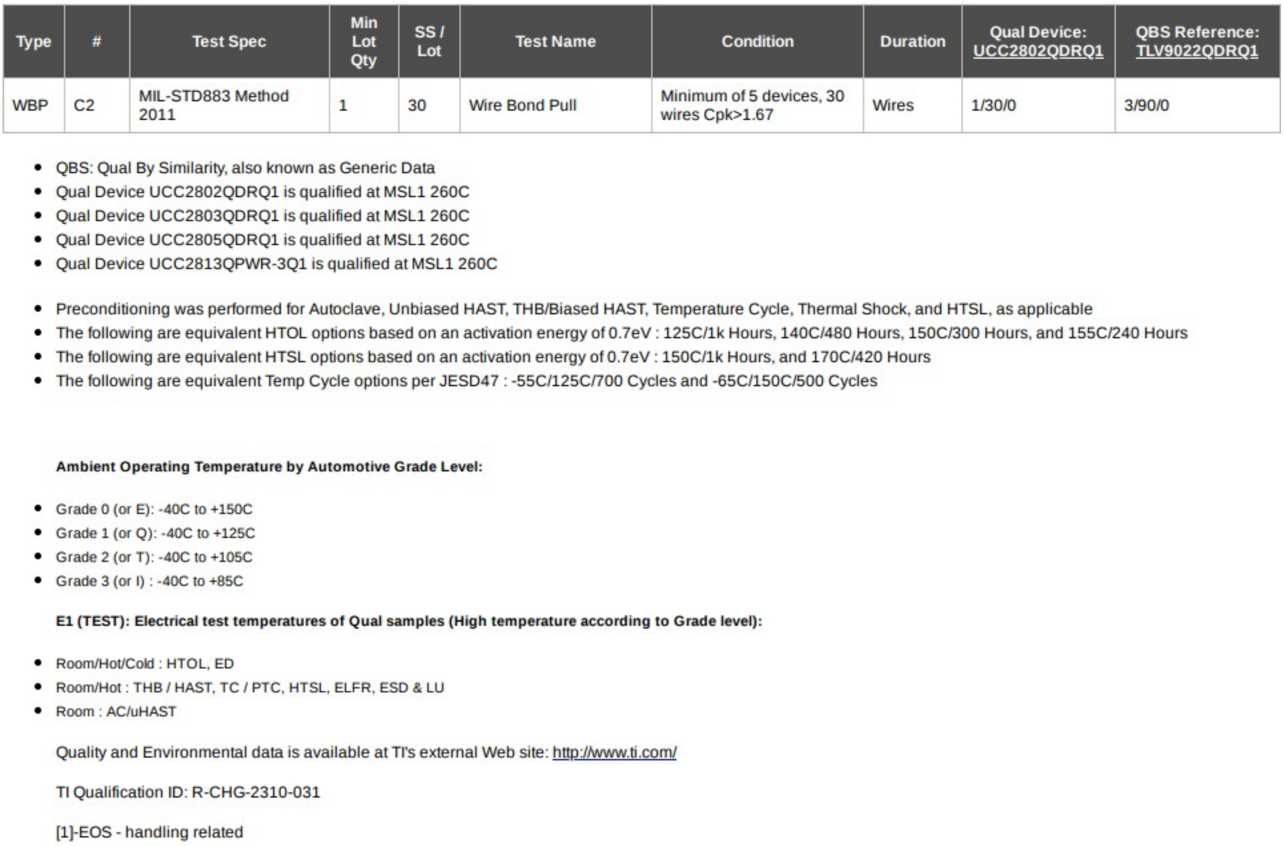
### Q006 SOIC at MLA
### Approve Date 23-DECEMBER-2020

| Attributes | Qual Device: UCC2802QDRQ1 | QBS Package Reference: TLV9022QDRQ1 |
|---|---|---|
| **Automotive Grade Level** | Grade 1 | Grade 1 |
| **Operating Temp Range (C)** | -40 to 125 | -40 to 125 |
| **Product Function** | Power Management | Signal Chain |
| **Wafer Fab Supplier** | RFAB | RFAB |
| **Assembly Site** | MLA | MLA |
| **Package Group** | SOIC | SOIC |
| **Package Designator** | D | D |
| **Pin Count** | 8 | 8 |

**Qualification Results**

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

| Type | # | Test Spec | Min Lot Qty | SS / Lot | Test Name | Condition | Duration | Qual Device: UCC2802QDRQ1 | QBS Reference: TLV9022QDRQ1 |
|---|---|---|---|---|---|---|---|---|---|
| Test Group A - Accelerated Environment Stress Tests | | | | | | | | | |
| PC | A1 | JEDEC J-STD-020 JESD22-A113 | 3 | 77 | Preconditioning | MSL1 260C | - | - | Pass |
| PC | A1.1 | - | 3 | 22 | SAM Precon Pre | Review for delamination | - | - | 3/66/0 |
| PC | A1.2 | - | 3 | 22 | SAM Precon Post | Review for delamination | - | - | 3/66/0 |
| HAST | A2.1 | JEDEC JESD22-A110 | 3 | 77 | Biased HAST | 130C/85%RH | 96 Hours | - | 3/231/0 |
| HAST | A2.1.2 | - | 3 | 1 | Cross Section, post bHAST, 1X | Post stress cross section | Completed | - | 3/3/0 |
| HAST | A2.1.3 | - | 3 | 3 | Wire Bond Shear, post bHAST, 1X | Post stress | - | - | 3/9/0 |
| HAST | A2.1.4 | - | 3 | 3 | Bond Pull over Stitch, post bHAST, 1X | Post stress | - | - | 3/9/0 |
| HAST | A2.1.5 | - | 3 | 3 | Bond Pull over Ball, post bHAST, 1X | Post stress | - | - | 3/9/0 |
| HAST | A2.2 | JEDEC JESD22-A110 | 3 | 70 | Biased HAST | 130C/85%RH | 192 Hours | - | 3/210/0 |
| HAST | A2.2.1 | - | 3 | 22 | SAM Analysis, post bHAST 2X | Review for delamination | Completed | - | 3/66/0 |
| HAST | A2.2.2 | - | 3 | 1 | Cross Section, post bHAST, 2X | Post stress cross section | Completed | - | 3/3/0 |
| HAST | A2.2.3 | - | 3 | 3 | Wire Bond Shear, post bHAST, 2X | Post stress | - | - | 3/9/0 |
| HAST | A2.2.4 | - | 3 | 3 | Bond Pull over Stitch, post bHAST, 2X | Post stress | - | - | 3/9/0 |
| HAST | A2.2.5 | - | 3 | 3 | Bond Pull over Ball, post bHAST, 2X | Post stress | - | - | 3/9/0 |
| TC | A4.1 | JEDEC JESD22-A104 and Appendix 3 | 3 | 77 | Temperature Cycle | -65C/150C | 500 Cycles | - | 3/231/0 |
| TC | A4.1.1 | - | 3 | 22 | SAM Analysis, post TC 1X | Review for delamination | Completed | - | 3/66/0 |
| TC | A4.1.2 | - | 3 | 1 | Cross Section, post TC, 1X | Post stress cross section | Completed | - | 3/3/0 |
| TC | A4.1.3 | - | 3 | 3 | Wire Bond Shear, post TC, 1X | Post stress | - | - | 3/9/0 |
| TC | A4.1.4 | - | 3 | 3 | Bond Pull over Stitch, post TC, 1X | Post stress | - | - | 3/9/0 |
| TC | A4.1.5 | - | 3 | 3 | Bond Pull over Ball, post TC, 1X | Post stress | - | - | 3/9/0 |
| TC | A4.2 | JEDEC JESD22-A104 and Appendix 3 | 3 | 70 | Temperature Cycle | -65C/150C | 1000 Cycles | - | 3/2100 |
| TC | A4.2.1 | - | 3 | 22 | SAM Analysis, post TC, 2X | Review for delamination | Completed | - | 3/66/0 |
| TC | A4.2.2 | - | 3 | 1 | Cross Section, post TC, 2X | Post stress cross section | Completed | - | 3/3/0 |
| TC | A4.2.3 | - | 3 | 3 | Wire Bond Shear, post TC, 2X | Post stress | - | - | 3/9/0 |
| TC | A4.2.4 | - | 3 | 3 | Bond Pull over Stitch, post TC, 2X | Post stress | - | - | 3/9/0 |
| TC | A4.2.5 | - | 3 | 3 | Bond Pull over Ball, post TC, 2X | Post stress | - | - | 3/9/0 |
| HTSL | A6.1 | JEDEC JESD22-A103 | 3 | 45 | High Temperature Storage Life | 150C | 1000 Hours | - | 3/135/0 |
| HTSL | A6.1.1 | - | 3 | 1 | Cross Section, post HTSL, 1X | Post stress cross section | Completed | - | 3/3/0 |
| HTSL | A6.2 | JEDEC JESD22-A103 | 3 | 44 | High Temperature Storage Life | 150C | 2000 Hours | - | 3/132/0 |
| HTSL | A6.2.1 | - | 3 | 1 | Cross Section, post HTSL, 2X | Post stress cross section | Completed | - | 3/3/0 |
| Test Group C - Package Assembly Integrity Tests | | | | | | | | | |
| WBS | C1 | AEC Q100-001 | 1 | 30 | Wire Bond Shear | Minimum of 5 devices, 30 wires Cpk>1.67 | Wires | 1/30/0 | 3/90/0 |



| Type | # | Test Spec | Min Lot Qty | SS / Lot | Test Name | Condition | Duration | Qual Device: UCC2802QDRQ1 | QBS Reference: TLV9022QDRQ1 |
|---|---|---|---|---|---|---|---|---|---|
| WBP | C2 | MIL-STD883 Method 2011 | 1 | 30 | Wire Bond Pull | Minimum of 5 devices, 30 wires Cpk>1.67 | Wires | 1/30/0 | 3/90/0 |

- QBS: Qual By Similarity, also known as Generic Data
- Qual Device UCC2802QDRQ1 is qualified at MSL1 260C
- Qual Device UCC2803QDRQ1 is qualified at MSL1 260C
- Qual Device UCC2805QDRQ1 is qualified at MSL1 260C
- Qual Device UCC2813QPWR-3Q1 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

**Ambient Operating Temperature by Automotive Grade Level:**

- Grade 0 (or E): -40C to +150C
- Grade 1 (or Q): -40C to +125C
- Grade 2 (or T): -40C to +105C
- Grade 3 (or I) : -40C to +85C

**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
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TI Qualification ID: R-CHG-2310-031

[1]-EOS - handling related

ZVEI ID’s:  SEM-DE-01, SEM-DE-02, SEM-DE-03, SEM-DS-01, SEM-PW-02, SEM-PW-09, SEM-PW-13, SEM-PA-08, SEM-PA-11, SEM-PA-07, SEM-PA-13, SEM-QG-01

In performing change qualifications, Texas Instruments follows integrated circuit industry standards in performing defect mechanism analysis and failure mechanism-based accelerated environmental testing to ensure wafer fab process, assembly process and product quality and reliability. As encouraged by these standards, TI uses both product-specific and generic (family) data in qualifying its changes. For devices to be categorized as a ‘product qualification family’ for generic data purposes, they must share similar product, wafer fab process and assembly process elements. The applicability of generic data (also known at TI as Qualification by Similarity (QBS)) is determined by the Reliability Engineering function following these industry standards. Generic data is shown in the qualification report in columns titled “QBS Process” (for wafer fab process), “QBS Package” (for assembly process) and “QBS Product” (for product family).

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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