



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

**PCN# 20250806001.2B**

**Qualification of additional Fab site (DFAB) and additional  
Assembly/Test site (FMX) options for select JI devices  
Change Notification / Sample Request**

**Date:** September 10, 2025

**To:** MOUSER PCN

Dear Customer:

**Revision B** is to update the BOM information for Group 5 device in the description of change section.

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

**20250806001.2B**  
**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 |
|------------|----------------------|
| TL1431QD   | NULL                 |
| TL1431QDG4 | NULL                 |

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

|                                                                                                                                                |                                                                                                                   |                            |                                        |                            |                       |                              |                       |
|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------------------------|----------------------------|-----------------------|------------------------------|-----------------------|
| <b>PCN Number:</b>                                                                                                                             | 20250806001.2B                                                                                                    |                            | <b>PCN Date:</b>                       | September 10, 2025         |                       |                              |                       |
| <b>Title:</b>                                                                                                                                  | Qualification of additional Fab site (DFAB) and additional Assembly/Test site (FMX) options for select JI devices |                            |                                        |                            |                       |                              |                       |
| <b>Customer Contact:</b>                                                                                                                       | Change Management team                                                                                            |                            | <b>Dept:</b>                           | Quality Services           |                       |                              |                       |
| <b>Proposed 1<sup>st</sup> Ship Date:</b>                                                                                                      | February 02, 2026                                                                                                 |                            | <b>Sample requests accepted until:</b> | October 05, 2025*          |                       |                              |                       |
| <b>*Sample requests received after October 05, 2025 will not be supported.</b>                                                                 |                                                                                                                   |                            |                                        |                            |                       |                              |                       |
| <b>Change Type:</b>                                                                                                                            |                                                                                                                   |                            |                                        |                            |                       |                              |                       |
| <input checked="" type="checkbox"/> Assembly Site                                                                                              | <input type="checkbox"/>                                                                                          | Design                     | <input type="checkbox"/>               | Wafer Bump Material        |                       |                              |                       |
| <input type="checkbox"/> Assembly Process                                                                                                      | <input 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 checked="" type="checkbox"/>                                                                               | Test Site                  | <input checked="" type="checkbox"/>    | Wafer Fab Materials        |                       |                              |                       |
| <input checked="" type="checkbox"/> Packing/Shipping/Labeling                                                                                  | <input checked="" type="checkbox"/>                                                                               | Test Process               | <input type="checkbox"/>               | Wafer Fab Process          |                       |                              |                       |
| <b>PCN Details</b>                                                                                                                             |                                                                                                                   |                            |                                        |                            |                       |                              |                       |
| <b>Description of Change:</b>                                                                                                                  |                                                                                                                   |                            |                                        |                            |                       |                              |                       |
| <b>Revision B</b> is to update the current site BOM for Group 5 device. We apologize for any inconvenience this may have caused.               |                                                                                                                   |                            |                                        |                            |                       |                              |                       |
| Texas Instruments is pleased to announce the addition of DFAB and an additional Assembly/Test site (FMX) options for the devices listed below. |                                                                                                                   |                            |                                        |                            |                       |                              |                       |
| <b>Group 1 Device:</b>                                                                                                                         |                                                                                                                   |                            |                                        |                            |                       |                              |                       |
| <b>Current Fab Site</b>                                                                                                                        |                                                                                                                   |                            | <b>Additional Fab Site</b>             |                            |                       |                              |                       |
| <b>Current Fab Site</b>                                                                                                                        | <b>Process</b>                                                                                                    | <b>Wafer Diameter</b>      | <b>Additional Fab Site</b>             | <b>Process</b>             | <b>Wafer Diameter</b> |                              |                       |
| SFAB                                                                                                                                           | JI                                                                                                                | 150 mm                     | DFAB                                   | JI                         | 200 mm                |                              |                       |
|                                                                                                                                                |                                                                                                                   | <b>Current</b>             | <b>New</b>                             |                            |                       |                              |                       |
| Wafer Probe Test site                                                                                                                          |                                                                                                                   | SH-BIP-1                   | No Probe                               |                            |                       |                              |                       |
| <b>Group 2 Device:</b>                                                                                                                         |                                                                                                                   |                            |                                        |                            |                       |                              |                       |
| <b>Current Fab Site</b>                                                                                                                        |                                                                                                                   |                            |                                        | <b>Additional Fab Site</b> |                       |                              |                       |
| <b>Fab Site</b>                                                                                                                                | <b>Process</b>                                                                                                    | <b>Metallization</b>       | <b>Wafer Diameter</b>                  | <b>Fab Site</b>            | <b>Process</b>        | <b>Metallization</b>         | <b>Wafer Diameter</b> |
| SFAB                                                                                                                                           | JI                                                                                                                | 2300A TiW/<br>14K AICu 2%  | 150 mm                                 | DFAB                       | JI                    | 2300A TiW/<br>14K AICu 0.5%  | 200 mm                |
|                                                                                                                                                |                                                                                                                   | <b>Current</b>             | <b>New</b>                             |                            |                       |                              |                       |
| Wafer Probe Test site                                                                                                                          |                                                                                                                   | SH-BIP-1                   | CD-PR                                  |                            |                       |                              |                       |
| <b>Group 3 Device:</b>                                                                                                                         |                                                                                                                   |                            |                                        |                            |                       |                              |                       |
| <b>Current Fab Site</b>                                                                                                                        |                                                                                                                   |                            |                                        | <b>Additional Fab Site</b> |                       |                              |                       |
| <b>Fab Site</b>                                                                                                                                | <b>Process</b>                                                                                                    | <b>Metallization</b>       | <b>Wafer Diameter</b>                  | <b>Fab Site</b>            | <b>Process</b>        | <b>Metallization</b>         | <b>Wafer Diameter</b> |
| SFAB                                                                                                                                           | JI                                                                                                                | 2300A TiW/<br>7.6kA AICu2% | 150 mm                                 | DFAB                       | JI                    | 2300A TiW/<br>7.6kA AICu0.5% | 200 mm                |
|                                                                                                                                                |                                                                                                                   | <b>Current</b>             | <b>New</b>                             |                            |                       |                              |                       |
| Wafer Probe Test site                                                                                                                          |                                                                                                                   | SH-BIP-1                   | CD-PR                                  |                            |                       |                              |                       |

**Group 4 Device:**

| Current Fab Site |         |                           |                | Additional Fab Site |         |                                |                |
|------------------|---------|---------------------------|----------------|---------------------|---------|--------------------------------|----------------|
| Fab Site         | Process | Metallization             | Wafer Diameter | Fab Site            | Process | Metallization                  | Wafer Diameter |
| SFAB             | JI      | 2300A TiW/<br>14K AICu 2% | 150 mm         | DFAB                | JI      | 2300A TiW/<br>14K AICu<br>0.5% | 200 mm         |

|                       | Current  | New      |
|-----------------------|----------|----------|
| Wafer Probe Test site | SH-BIP-1 | No Probe |

**Group 5 Device:** Construction differences are as follows:

| Current Fab Site |         |                           |                | Additional Fab Site |         |                                |                |
|------------------|---------|---------------------------|----------------|---------------------|---------|--------------------------------|----------------|
| Fab Site         | Process | Metallization             | Wafer Diameter | Fab Site            | Process | Metallization                  | Wafer Diameter |
| SFAB             | JI      | 2300A TiW/<br>14K AICu 2% | 150 mm         | DFAB                | JI      | 2300A TiW/<br>14K AICu<br>0.5% | 200 mm         |

|                       | Current  | New   |
|-----------------------|----------|-------|
| Wafer Probe Test site | SH-BIP-1 | CD-PR |

|                    | Current Site       | Additional Site |
|--------------------|--------------------|-----------------|
| Assembly/Test site | TAI                | FMX             |
| Mount compound     | 4042500<br>4147858 | 4147858         |
| Mold compound      | 4205694<br>4211880 | 4211880         |

No material differences between sites

**Group 6 Device:** Construction differences are as follows:

| Current Fab Site |         |                           |                | Additional Fab Site |         |                                |                |
|------------------|---------|---------------------------|----------------|---------------------|---------|--------------------------------|----------------|
| Fab Site         | Process | Metallization             | Wafer Diameter | Fab Site            | Process | Metallization                  | Wafer Diameter |
| SFAB             | JI      | 2300A TiW/<br>14K AICu 2% | 150 mm         | DFAB                | JI      | 2300A TiW/<br>14K AICu<br>0.5% | 200 mm         |

|                       | Current  | New   |
|-----------------------|----------|-------|
| Wafer Probe Test site | SH-BIP-1 | CD-PR |

|                    | Current Site | Additional Site |
|--------------------|--------------|-----------------|
| Assembly/Test site | TAI          | FMX             |

No material differences between sites

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                                     |
|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| <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>DL-LIN</b> | <b>DLN</b>                  | <b>USA</b>                   | <b>Dallas</b>  |

**Assembly/Test Site Information:**

| Assembly Site | Assembly Site Origin (22L) | Assembly Country Code (23L) | Assembly City             |
|---------------|----------------------------|-----------------------------|---------------------------|
| TAI           | TAI                        | TWN                         | Chung Ho, New Taipei City |
| <b>FMX</b>    | <b>MEX</b>                 | <b>MEX</b>                  | <b>Aguascalientes</b>     |

Sample product shipping label (not actual product label)

**Group 1 Product Affected:** Wafer fab site, Wafer probe test site

TS321QDBVRQ1

**Group 2 Product Affected:** Wafer fab site, Wafer probe test site

|            |               |             |
|------------|---------------|-------------|
| LT1014DMDW | TL1431QDR     | TL1431QDRQ1 |
| SN103592DR | TL1431QDRG4Q1 | TL1431QYPCT |

**Group 3 Product Affected:** Wafer fab site, Wafer probe test site

|                 |                 |                 |
|-----------------|-----------------|-----------------|
| TPS79801QDGNRQ1 | TPS79850QDGNRDL | TPS79850QDGNRQ1 |
|-----------------|-----------------|-----------------|

**Group 4 Product Affected:** Wafer fab site, Wafer probe test site

|              |            |            |
|--------------|------------|------------|
| LM211QD      | LM211QDRQ1 | MLA00269DR |
| LM211QDRG4Q1 | LM211QDRG4 | MLA00332DR |
| LM211QDR     | LM211QDRRB | MLA00407DR |

**Group 5 Product Affected:** Wafer fab site, Wafer probe test site, Assembly/Test site

|            |             |
|------------|-------------|
| TL1431QD   | TL1431QDRDL |
| TL1431QDG4 | TL1431QDRG4 |

**Group 6 Product Affected:** Wafer fab site, Wafer probe test site, Assembly/Test site

|           |             |
|-----------|-------------|
| LT1013DMD | LT1013DMDG4 |
|-----------|-------------|

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

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

Approve Date 04-June-2025

### Product Attributes

| Attributes               | Qual Device:<br>TPS79801QDGNRQ1 |
|--------------------------|---------------------------------|
| Automotive Grade Level   | Grade 1                         |
| Operating Temp Range (C) | -40 to 125                      |
| Product Function         | Power Management                |
| Wafer Fab Supplier       | DL-LIN                          |
| Assembly Site            | UTL2                            |
| Package Group            | VSSOP                           |
| Package Designator       | DGN                             |
| Pin Count                | 8                               |

QBS: Qual By Similarity, also known as Generic Data

Qual Device TPS79801QDGNRQ1 is qualified at MSL2 260C

Qual Device TPS79801QDGNRQ1 is qualified at MSL2 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:<br>TPS79801QDGNRQ1 |
|------------------------------------------------------|----|-------------------------------------|-------------|----------|-------------------------------|-----------------------------------------|------------|---------------------------------|
| Test Group A - Accelerated Environment Stress Tests  |    |                                     |             |          |                               |                                         |            |                                 |
| PC                                                   | A1 | JEDEC J-STD-020 JESD22-A113         | 3           | 77       | Preconditioning               | MSL2 260C                               | -          | 3/0/0                           |
| HAST                                                 | A2 | JEDEC JESD22-A110                   | 3           | 77       | Biased HAST                   | 130C/85%RH                              | 96 Hours   | 3/231/0                         |
| AC/UHAST                                             | A3 | JEDEC JESD22-A102/JEDEC JESD22-A118 | 3           | 77       | Unbiased HAST                 | 130C/85%RH                              | 96 Hours   | 3/231/2 <sup>1</sup>            |
| TC                                                   | A4 | JEDEC JESD22-A104 and Appendix 3    | 3           | 77       | Temperature Cycle             | -65C/150C                               | 500 Cycles | 3/231/1 <sup>1</sup>            |
| TC-BP                                                | A4 | MIL-STD883 Method 2011              | 1           | 5        | Post Temp Cycle Bond Pull     | -                                       | -          | 1/5/0                           |
| HTSL                                                 | A6 | JEDEC JESD22-A103                   | 1           | 45       | High Temperature Storage Life | 150C                                    | 1000 Hours | 1/45/0                          |
| 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      | 3/90/0                          |
| WBP                                                  | C2 | MIL-STD883 Method 2011              | 1           | 30       | Wire Bond Pull                | Minimum of 5 devices, 30 wires Cpk>1.67 | Wires      | 3/90/0                          |
| SD                                                   | C3 | JEDEC J-STD-002                     | 1           | 15       | PB Solderability              | >95% Lead Coverage                      | -          | 1/15/0                          |
| SD                                                   | C3 | JEDEC J-STD-002                     | 1           | 15       | PB-Free Solderability         | >95% Lead Coverage                      | -          | 1/15/0                          |
| PD                                                   | C4 | JEDEC JESD22-B100 and B108          | 3           | 10       | Physical Dimensions           | Cpk>1.67                                | -          | 3/30/0                          |

| Test Group D - Die Fabrication Reliability Tests |    |              |   |    |                                     |                              |            |                                               |
|--------------------------------------------------|----|--------------|---|----|-------------------------------------|------------------------------|------------|-----------------------------------------------|
| EM                                               | D1 | JESD61       | - | -  | Electromigration                    | -                            | -          | Completed Per Process Technology Requirements |
| Tddb                                             | D2 | JESD35       | - | -  | Time Dependent Dielectric Breakdown | -                            | -          | Completed Per Process Technology Requirements |
| HCI                                              | D3 | JESD60 & 28  | - | -  | Hot Carrier Injection               | -                            | -          | Completed Per Process Technology Requirements |
| BTI                                              | D4 | -            | - | -  | Bias Temperature Instability        | -                            | -          | Completed Per Process Technology Requirements |
| SM                                               | D5 | -            | - | -  | Stress Migration                    | -                            | -          | 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                                         |
| ESD                                              | E3 | AEC Q100-011 | 1 | 3  | ESD CDM                             | -                            | 1000 Volts | 1/3/0                                         |
| LU                                               | E4 | AEC Q100-004 | 1 | 3  | Latch-Up                            | Per AEC Q100-004             | -          | 1/3/0                                         |
| ED                                               | E5 | AEC Q100-009 | 3 | 30 | Electrical Distributions            | Cpk>1.67 Room, hot, and cold | -          | 3/90/0                                        |

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

**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-2203-030

[1]-EIPD damage between pins 1 & 8. FA and 8D report are available upon request.

**Automotive Qualification Summary**  
**(As per AEC-Q100 Rev. H and JEDEC Guidelines)**  
Approved 05-Dec-2016

**Product Attributes**

| Attributes             | Qual Device: LM2902KAVQDRQ1 | Qual Device: LM2904AVQDRQ1 | Qual Device: SN104569DR | Qual Device: ULQ2003AQDRQ1 | QBS Package Reference: ULQ2003AQDRQ1 |
|------------------------|-----------------------------|----------------------------|-------------------------|----------------------------|--------------------------------------|
| Operating Temp Range   | -40 to +125 C               | -40 to +125 C              | -40 to +125 C           | -40 to +125 C              | -40 to +125 C                        |
| Automotive Grade Level | Grade 1                     | Grade 1                    | Grade 1                 | Grade 1                    | Grade 1                              |
| Product Function       | Signal Chain                | Signal Chain               | Signal Chain            | Interface                  | Interface                            |
| Wafer Fab Supplier     | SFAB                        | SFAB                       | SFAB                    | SFAB                       | SFAB                                 |
| Die Revision           | E                           | E                          | A                       | C                          | C                                    |
| Assembly Site          | FMX                         | FMX                        | FMX                     | FMX                        | FMX                                  |
| Package Type           | SOIC                        | SOIC                       | SOIC                    | SOIC                       | SOIC                                 |
| Package Designator     | D                           | D                          | D                       | D                          | D                                    |
| Ball/Lead Count        | 14                          | 8                          | 14                      | 16                         | 16                                   |

QBS: Qual By Similarity

Qual Devices qualified at LEVEL1-260CG: SN104569DR, ULQ2003AQDRQ1, LM2902KAVQDRQ1, LM2904AVQDRQ1

**Qualification Results**

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

| Type                                                 | #  | Test Spec                           | Min Lot Qty | SS/<br>Lot | Test Name / Condition                                     | Duration            | Qual Device:<br>LM2902KAVQDRQ1 | Qual Device:<br>LM2904AVQDRQ1 | Qual Device:<br>SN104569DR | Qual Device:<br>ULQ2003AQDRQ1 | QBS Package Reference:<br>ULQ2003AQDRQ1 |
|------------------------------------------------------|----|-------------------------------------|-------------|------------|-----------------------------------------------------------|---------------------|--------------------------------|-------------------------------|----------------------------|-------------------------------|-----------------------------------------|
| Test Group A – Accelerated Environment Stress Tests  |    |                                     |             |            |                                                           |                     |                                |                               |                            |                               |                                         |
| PC                                                   | A1 | JEDEC J-STD-020<br>JESD22-A113      | 3           | 77         | Automotive<br>Preconditioning                             | Level 1-260C        | Pass                           | Pass                          | Pass                       | Pass                          | Pass                                    |
|                                                      |    | AEC-Q006                            | -           | -          | Post-Preconditioning                                      | -                   | Pass                           | Pass                          | Pass                       | Pass                          | -                                       |
| HAST                                                 | A2 | JEDEC JESD22-A110                   | 3           | 77         | Biased HAST,<br>130C/85%RH                                | 96 Hours            | -                              | 3/231/0                       | -                          | -                             | 3/231/0                                 |
|                                                      |    | AEC-Q006                            | 3           | 11         | HAST SAM                                                  | Post 96 Hours       | -                              | 3/33/0                        | -                          | -                             | 1/11/0                                  |
|                                                      |    | AEC-Q006                            | 3           | 3          | HAST Bond Pull (Ball<br>Bond)                             | Post 96 Hours       | -                              | 3/9/0                         | -                          | -                             | -                                       |
|                                                      |    | AEC-Q006                            | 3           | 3          | HAST Bond Pull (Stitch<br>Bond)                           | Post 96 Hours       | -                              | 3/9/0                         | -                          | -                             | -                                       |
|                                                      |    | AEC-Q006                            | 3           | 3          | HAST Bond Shear                                           | Post 96 Hours       | -                              | 3/9/0                         | -                          | -                             | -                                       |
|                                                      |    | AEC-Q006                            | 3           | 1          | HAST Cross-Section                                        | Post 96 Hours       | -                              | 3/3/0                         | -                          | -                             | -                                       |
| HAST                                                 | A2 | JEDEC JESD22-A110                   | 3           | 70         | Biased HAST,<br>130C/85%RH                                | 192 Hours           | -                              | 3/210/0                       | -                          | -                             | 3/210/0                                 |
|                                                      |    | AEC-Q006                            | 3           | 11         | HAST SAM                                                  | Post 192 Hours      | -                              | 3/33/0                        | -                          | -                             | 1/11/0                                  |
|                                                      |    | AEC-Q006                            | 3           | 2          | HAST Bond Pull (Ball<br>Bond)                             | Post 192 Hours      | -                              | 3/6/0                         | -                          | -                             | -                                       |
|                                                      |    | AEC-Q006                            | 3           | 2          | HAST Bond Pull (Stitch<br>Bond)                           | Post 192 Hours      | -                              | 3/6/0                         | -                          | -                             | -                                       |
|                                                      |    | AEC-Q006                            | 3           | 2          | HAST Bond Shear                                           | Post 192 Hours      | -                              | 3/6/0                         | -                          | -                             | -                                       |
|                                                      |    | AEC-Q006                            | 3           | 1          | HAST Cross-Section                                        | Post 192 Hours      | -                              | 3/3/0                         | -                          | -                             | -                                       |
| AC                                                   | A3 | JEDEC JESD22-A102                   | 3           | 77         | Autoclave 121C                                            | 96 Hours            | 3/231/0                        | 3/231/0                       | 3/231/0                    | 3/231/0                       | 3/231/0                                 |
| AC                                                   | A3 | JEDEC JESD22-A102                   | 3           | 77         | Autoclave 121C                                            | 192 Hours           | 3/231/0                        | 3/231/0                       | 3/231/0                    | 3/231/0                       | 3/231/0                                 |
| TC                                                   | A4 | JEDEC JESD22-A104                   | 3           | 77         | Temperature Cycle, -                                      | 500 Cycles          | 3/231/0                        | 3/231/0                       | 3/231/0                    | 3/231/0                       | 3/231/0                                 |
|                                                      |    | and Appendix 3                      |             |            | 65/150C                                                   |                     |                                |                               |                            |                               |                                         |
|                                                      |    | AEC-Q006                            | 3           | 11         | Temp Cycle SAM                                            | Post 500 Cycles     | 3/33/0                         | 3/33/0                        | -                          | 3/33/0                        | 3/33/0                                  |
|                                                      |    | AEC-Q006                            | 3           | 3          | Temp Cycle Bond Pull<br>(Ball Bond)                       | Post 500 Cycles     | 3/9/0                          | 3/9/0                         | -                          | 3/9/0                         | -                                       |
|                                                      |    | AEC-Q006                            | 3           | 3          | Temp Cycle Bond Pull<br>(Stitch Bond)                     | Post 500 Cycles     | 3/9/0                          | 3/9/0                         | -                          | 3/9/0                         | -                                       |
|                                                      |    | AEC-Q006                            | 3           | 3          | Temp Cycle Bond<br>Shear                                  | Post 500 Cycles     | 3/9/0                          | 3/9/0                         | -                          | 3/9/0                         | -                                       |
|                                                      |    | AEC-Q006                            | 3           | 1          | Temp Cycle Cross-<br>Section                              | Post 500 Cycles     | -                              | 3/3/0                         | -                          | 3/3/0                         | 3/3/0                                   |
| TC-BP                                                | A4 | MIL-STD883 Method<br>2011           | 1           | 30         | Post Temp. Cycle Bond<br>Pull                             | Wires               | 1/30/0                         | 1/30/0                        | 1/30/0                     | 1/30/0                        | 1/30/0                                  |
| TC                                                   | A4 | JEDEC JESD22-A104<br>and Appendix 3 | 3           | 70         | Temperature Cycle, -                                      | 1000 Cycles         | 3/210/0                        | 3/210/0                       | 3/210/0                    | 3/210/0                       | 3/210/0                                 |
|                                                      |    | AEC-Q006                            | 3           | 11         | Temp Cycle SAM                                            | Post 1000<br>Cycles | 3/33/0                         | 3/33/0                        | -                          | 3/33/0                        | 3/33/0                                  |
|                                                      |    | AEC-Q006                            | 3           | 3          | Temp Cycle Bond Pull<br>(Ball Bond)                       | Post 1000<br>Cycles | 3/6/0                          | 3/6/0                         | -                          | 3/6/0                         | -                                       |
|                                                      |    | AEC-Q006                            | 3           | 3          | Temp Cycle Bond Pull<br>(Stitch Bond)                     | Post 1000<br>Cycles | 3/6/0                          | 3/6/0                         | -                          | 3/6/0                         | -                                       |
|                                                      |    | AEC-Q006                            | 3           | 3          | Temp Cycle Bond<br>Shear                                  | Post 1000<br>Cycles | 3/6/0                          | 3/6/0                         | -                          | 3/6/0                         | -                                       |
|                                                      |    | AEC-Q006                            | 3           | 1          | Temp Cycle Cross-<br>Section                              | Post 1000<br>Cycles | -                              | 3/3/0                         | -                          | 3/3/0                         | 3/3/0                                   |
| PTC                                                  | A5 | JEDEC JESD22-A105                   | 1           | 45         | Power Temperature<br>Cycle                                | 1000 Cycles         | N/A                            | N/A                           | N/A                        | N/A                           | -                                       |
| HTSL                                                 | A6 | JEDEC JESD22-A103                   | 1           | 45         | High Temp Storage<br>Bake 150C                            | 1000 Hours          | -                              | -                             | -                          | -                             | 1/45/0                                  |
| HTSL                                                 | A6 | JEDEC JESD22-A103                   | 1           | 44         | High Temp Storage<br>Bake 150C                            | 2000 Hours          | -                              | -                             | -                          | -                             | 1/44/0                                  |
|                                                      |    | AEC-Q006                            | 3           | 1          | HTSL Cross-Section                                        | Post 2000 Hours     | -                              | -                             | -                          | -                             | 3/3/0                                   |
| Test Group B – Accelerated Lifetime Simulation Tests |    |                                     |             |            |                                                           |                     |                                |                               |                            |                               |                                         |
| HTOL                                                 | B1 | JEDEC JESD22-<br>A108               | 3           | 77         | Life Test, 150C                                           | 408 Hours           | -                              | -                             | -                          | -                             | 3/231/0                                 |
| EDR                                                  | B3 | AEC Q100-005                        | 3           | 77         | NVM Endurance, Data<br>Retention, and<br>Operational Life | -                   | N/A                            | N/A                           | N/A                        | N/A                           | -                                       |
| Test Group C – Package Assembly Integrity Tests      |    |                                     |             |            |                                                           |                     |                                |                               |                            |                               |                                         |
| WBS                                                  | C1 | AEC Q100-001                        | 1           | 30         | Bond Shear (Cpk>1.67)                                     | Wires               | 3/90/0                         | 3/90/0                        | 3/90/0                     | 3/90/0                        | -                                       |
| WBP                                                  | C2 | MIL-STD883 Method<br>2011           | 1           | 30         | Bond Pull (Cpk>1.67)                                      | Wires               | 3/90/0                         | 3/90/0                        | 3/90/0                     | 3/90/0                        | -                                       |
| SD                                                   | C3 | JEDEC JESD22-B102                   | 1           | 15         | Solderability                                             | Pb Free             | -                              | -                             | -                          | -                             | 1/15/0                                  |
| SD                                                   | C3 | JEDEC JESD22-B102                   | 1           | 15         | Surface Mount<br>Solderability                            | Pb                  | -                              | -                             | -                          | -                             | 1/15/0                                  |
| Test Group E – Electrical Verification Tests         |    |                                     |             |            |                                                           |                     |                                |                               |                            |                               |                                         |
| ED                                                   | E5 | AEC Q100-009                        | 3           | 30         | Electrical Distributions                                  | Cpk>1.67            | -                              | 3/90/0                        | -                          | -                             | 3/90/0                                  |

A1 (PC): Preconditioning:

Performed for THB, Biased HAST, AC, uHAST & TC 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 I): -40°C to +85°C

E1 (TEST): Electrical test temperatures of Qual samples (High temperature according to Grade level):

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TI Information - Selective Disclosure

PCN# 20250806001.2B

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

Change Number: C1407210  
TI Qualification ID: 20150818-115047

ZVEI ID's: SEM-PW-02, SEM-PW-07, SEM-PW-13, SEM-PA-11, SEM-PA-07, SEM-PA-18, SEM-TF-01, 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).

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