12500 TI Boulevard, MS 8640, Dallas, Texas 75243

**PCN#20250710001.2**
**Qualification of RFAB as an additional Fab site option,**
**Die Revision, Datasheet & BOM options for select devices**
**Change Notification / Sample Request**

**Date:** July 11, 2025
**To:** MOUSER PCN

Dear Customer:

This is an announcement of a change to a device that is currently offered by Texas Instruments. The details of this change are on the following pages.

Texas Instruments 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.

The changes discussed within this PCN will not take effect any earlier than the proposed first ship date on Page 3 of this notification, unless customer agreement has been reached on an earlier implementation of the change.

This notice does not change the end-of-life status of any product. Should product affected be on a previously issued product withdrawal/discontinuance notice, this notification does not extend the life of that product or change the life time buy offering/discontinuance plan.

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.

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

Sincerely,

Change Management Team
SC Business Services

**20250710001.2**
**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 |
|---|---|
| CLVC125AQPWRG4Q1 | CLVC125AQPWRG4Q1 |
| SN74LVC32AQPWRG4Q1 | NULL |

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

| | | | |
|---|---|---|---|
| **PCN Number:** | 20250710001.2 | **PCN Date:** | July 11, 2025 |
| **Title:** | Qualification of RFAB as an additional Fab site option, Die Revision, Datasheet & BOM options for select devices | | |
| **Customer Contact:** | Change Management Team | **Dept:** | Quality Services |
| **Proposed 1st Ship Date:** | January 07, 2026 | **Sample requests accepted until:** | September 09, 2025* |

*Sample requests received after September 09, 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 Material |
| ☒ | Packing/Shipping/Labeling | ☒ | Test Process | ☒ | Wafer Fab Process |

## PCN Details

**Description of Change:**

Texas Instruments is pleased to announce the qualification of RFAB as an additional Fab site option & 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** |
| FFAB | ASLNONC 10 | 200mm | RFAB | LBC7 | 300mm |

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

**Wafer Probe Test:**

| | Current | Proposed |
|---|---|---|
| Wafer probe test | With Probe | No Probe |

Construction differences are as follows:

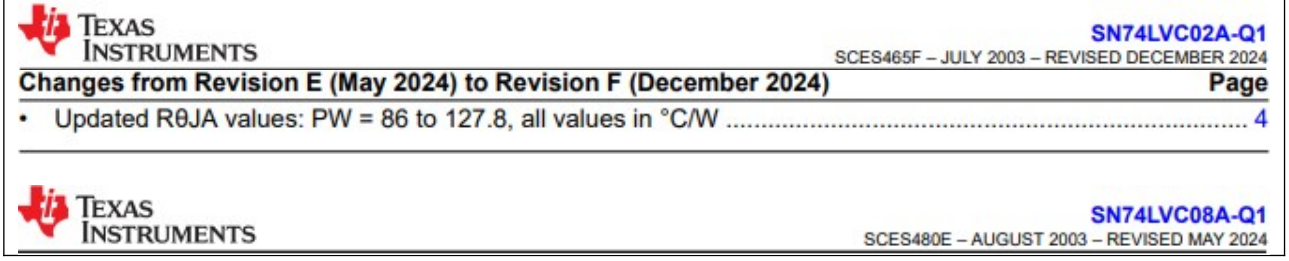
**Group 1 device**

| | Current BOM | Additional BOM |
|---|---|---|
| Wire bond diam/type | 0.96mil Au | 0.8mil Cu |

**Group 2 device**

| | Current BOM | Additional BOM |
|---|---|---|
| Wire bond diam/type | 0.96mil Au, 1.0mil Cu | 0.8mil Cu |
| Mount compound | 4147858, 4042500 | 4147858 |
| Mold compound | 4211471, 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.



TEXAS INSTRUMENTS — SN74LVC02A-Q1
SCES465F – JULY 2003 – REVISED DECEMBER 2024

**Changes from Revision E (May 2024) to Revision F (December 2024)** — **Page**

- Updated RθJA values: PW = 86 to 127.8, all values in °C/W ..... 4

TEXAS INSTRUMENTS — SN74LVC08A-Q1
SCES480E – AUGUST 2003 – REVISED MAY 2024

**Changes from Revision D (March 2024) to Revision E (May 2024)** **Page**

- Updated RθJA values: PW = 113 to 150.8, all values in °C/W ..... 4

TEXAS INSTRUMENTS

**SN74LVC00A-Q1**

SCAS703D – SEPTEMBER 2003 – REVISED MAY 2024

**Changes from Revision C (March 2024) to Revision D (May 2024)** **Page**

- Updated RθJA values: PW = 113 to 150.8, all values in °C/W ..... 4

TEXAS INSTRUMENTS

**SN74LVC32A-Q1**

SCAS706E – SEPTEMBER 2003 – REVISED DECEMBER 2024

**Changes from Revision D (May 2024) to Revision E (December 2024)** **Page**

- Updated RθJA value: D = 86 to 127.8, all values in °C/W ..... 4

TEXAS INSTRUMENTS

**SN74LVC74A-Q1**

SCES481E – AUGUST 2003 – REVISED AUGUST 2024

**Changes from Revision D (May 2024) to Revision E (August 2024)** **Page**

- Updated thermal values for PW package from RθJA = 113 to 150.8, RθJC(top) = 50.3 to 78.3, RθJB = 63.4 to 93.8, ΨJT = 6.2 to 24.7, ΨJB = 62.8 to 93.2, all values in °C/W ..... 4

TEXAS INSTRUMENTS

**SN74LVC86A-Q1**

SCAS707E – SEPTEMBER 2003 – REVISED DECEMBER 2024

**Changes from Revision D (August 2024) to Revision E (December 2024)** **Page**

- Updated RθJA values: D = 86 to 127.8, all values in °C/W..... 4

TEXAS INSTRUMENTS

**SN74LVC125A-Q1**

SCAS762E – FEBRUARY 2004 – REVISED DECEMBER 2024

**Changes from Revision D (May 2024) to Revision E (December 2024)** **Page**

- Updated RθJA values: D = 86 to 127.8, all values in °C/W ..... 5

TEXAS INSTRUMENTS

**SN74LVC126A-Q1**

SCAS763D – FEBRUARY 2004 – REVISED OCTOBER 2024

**Changes from Revision C (May 2024) to Revision D (October 2024)** **Page**

- Updated RθJA values: D = 86 to 127.8, all values in °C/W ..... 5

| Product Folder | Current Datasheet Number | New Datasheet Number | Link to full datasheet |
|---|---|---|---|
| SN74LVC02A-Q1 | SCES465E | **SCES465F** | http://www.ti.com/product/SN74LVC02A-Q1 |
| SN74LVC08A-Q1 | SCES480D | **SCAS480E** | http://www.ti.com/product/SN74LVC08A-Q1 |
| SN74LVC00A-Q1 | SCAS703C | **SCAS703D** | http://www.ti.com/product/SN74LVC00A-Q1 |
| SN74LVC32A-Q1 | SCAS706E | **SCAS706D** | http://www.ti.com/product/SN74LVC32A-Q1 |
| SN74LVC74A-Q1 | SCES481D | **SCES481E** | http://www.ti.com/product/SN74LVC74A-Q1 |
| SN74LVC86A-Q1 | SCAS707D | **SCAS707E** | http://www.ti.com/product/SN74LVC86A-Q1 |
| SN74LVC125A-Q1 | SCAS762D | **SCAS762E** | http://www.ti.com/product/SN74LVC125A-Q1 |
| SN74LVC126A-Q1 | SCAS763C | **SCAS763D** | http://www.ti.com/product/SN74LVC126A-Q1 |

Qual details are provided in the Qual Data Section.
Test coverage, insertions, conditions will remain consistent with current testing.

**Reason for Change:**

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 |
|---|---|---|---|
| FFAB | TID | DEU | Freising |
| **RFAB** | **RFB** | **USA** | **Richardson** |

**Die Rev:**

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

Sample product shipping label (not actual product label):


## Group 1 Product Affected: (Fab, Die rev, BOM)

| | | |
|---|---|---|
| SN74LVC86AQDRG4Q1.A | SN74LVC125AQDRQ1.B | SN74LVC32AQDRQ1.B |
| SN74LVC86AQDRG4Q1.B | SN74LVC126AQDRG4Q1 | SN74LVC74AQDRG4Q1 |
| SN74LVC02AQDRG4Q1.B | SN74LVC126AQDRG4Q1.B | SN74LVC74AQDRG4Q1.A |
| SN74LVC02AQDRQ1 | SN74LVC126AQDRQ1 | SN74LVC74AQDRG4Q1.B |
| SN74LVC02AQDRQ1.A | SN74LVC126AQDRQ1.A | SN74LVC86AQDRG4Q1 |
| SN74LVC02AQDRQ1.B | SN74LVC126AQDRQ1.B | SN74LVC02AQDRG4Q1 |
| SN74LVC125AQDRQ1 | SN74LVC32AQDRQ1 | |
| SN74LVC125AQDRQ1.A | SN74LVC32AQDRQ1.A | |

## Group 2 Product Affected: (Fab, Die rev, BOM)

| | | |
|---|---|---|
| SN74LVC86AQPWRG4Q1 | SN74LVC32AQPWRG4Q1.B | SN74LVC00AQPWRG4Q1 |
| CLVC125AQPWRG4Q1.B | SN74LVC74AQPWRG4Q1 | SN74LVC00AQPWRG4Q1.B |
| SN74LVC02AQPWRG4Q1 | SN74LVC74AQPWRG4Q1.B | SN74LVC08AQPWRG4Q1.B |
| SN74LVC02AQPWRG4Q1.B | SN74LVC86AQPWRG4Q1.B | SN74LVC32AQPWRG4Q1 |
| SN74LVC08AQPWRG4Q1 | CLVC125AQPWRG4Q1 | |

# Group 1
# Qualification Report
# Automotive Qualification Summary
# (As per AEC-Q100 Rev. J and JEDEC Guidelines)

Approve Date 20-DECEMBER -2024

## Product Attributes

| Attributes | Qual Device: SN74LVC74AQDRG4Q1 | Qual Device: SN74LVC125AQDRQ1 | Qual Device: SN74LVC02AQDRQ1 | QBS Process Reference: SN3257QDYYRQ1 | QBS Package, Product Reference: SN74LVC11ADRQ1 | QBS Package, Product Reference: SN74LVC132ADRQ1 | QBS Package, Product Reference: SN74LVC74ADRQ1 |
|---|---|---|---|---|---|---|---|
| **Automotive Grade Level** | Grade 1 | 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 | -40 to 125 |
| **Product Function** | Logic | Logic | Logic | Logic | Logic | Logic | Logic |
| **Wafer Fab Supplier** | RFAB | RFAB | RFAB | RFAB | RFAB | RFAB | RFAB |
| **Assembly Site** | FMX | FMX | FMX | PHI | FMX | FMX | FMX |
| **Package Group** | SOIC | SOIC | SOIC | SOT | SOIC | SOIC | SOIC |
| **Package Designator** | D | D | D | DYY | D | D | D |
| **Pin Count** | 14 | 14 | 14 | 16 | 14 | 14 | 14 |

QBS: Qual By Similarity, also known as Generic Data
Qual Device SN74LVC74AQDRG4Q1 is qualified at MSL1 260C
Qual Device SN74LVC125AQDRQ1 is qualified at MSL1 260C
Qual Device SN74LVC02AQDRQ1 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: SN74LVC74AQDRG4Q1 | Qual Device: SN74LVC125AQDRQ1 | Qual Device: SN74LVC02AQDRQ1 | QBS Process Reference: SN3257QDYYRQ1 | QBS Package, Product Reference: SN74LVC11ADRQ1 | QBS Package, Product Reference: SN74LVC132ADRQ1 | QBS Package Product Reference: SN74LVC74ADR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Test Group A - Accelerated Environment Stress Tests** | | | | | | | | | | | | | | |
| PC | A1 | JEDEC J-STD-020 JESD22-A113 | 3 | 77 | Preconditioning | MSL1 260C | - | - | - | - | 3/0/0 | 1/0/0 | 1/0/0 | 1/0/0 |
| HAST | A2 | JEDEC JESD22-A110 | 3 | 77 | Biased HAST | 130C/85%RH | 96 Hours | - | - | - | 3/231/0 | 1/77/0 | 1/77/0 | 1/77/0 |
| AC/UHAST | A3 | JEDEC JESD22-A102/JEDEC JESD22-A118 | 3 | 77 | Autoclave | 121C/15psig | 96 Hours | - | - | - | 3/231/0 | 1/77/0 | 1/77/0 | 1/77/0 |
| TC | A4 | JEDEC JESD22-A104 and Appendix 3 | 3 | 77 | Temperature Cycle | -65C/150C | 500 Cycles | - | - | - | 3/231/0 | 1/77/0 | 1/77/0 | 1/77/0 |
| HTSL | A6 | JEDEC JESD22-A103 | 1 | 45 | High Temperature Storage Life | 150C | 1000 Hours | - | - | - | 3/135/0 | - | - | - |
| HTSL | A6 | JEDEC JESD22-A103 | 1 | 45 | High Temperature Storage Life | 175C | 500 Hours | - | - | - | - | 1/45/0 | 1/45/0 | 1/45/0 |
| **Test Group B - Accelerated Lifetime Simulation Tests** | | | | | | | | | | | | | | |
| HTOL | B1 | JEDEC JESD22-A108 | 3 | 77 | Life Test | 150C | 300 Hours | - | - | - | 3/231/0 | 1/77/0 | - | - |
| ELFR | B2 | AEC Q100-008 | 3 | 800 | Early Life Failure Rate | 150C | 24 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 | 1/30/0 | 1/30/0 | 1/30/0 |
| WBP | C2 | MIL-STD883 Method 2011 | 1 | 30 | Wire Bond Pull | Minimum of 5 devices, 30 wires Cpk>1.67 | Wires | - | - | - | 3/90/0 | 1/30/0 | 1/30/0 | 1/30/0 |
| 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 | 1/15/0 | - | - |
| PD | C4 | JEDEC JESD22-B100 and B108 | 3 | 10 | Physical Dimensions | Cpk>1.67 | - | - | - | - | 3/30/0 | 1/10/0 | 1/10/0 | 1/10/0 |
| **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 | Completed Per Process Technolc 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 | Completed Per Process Technolc 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 | Completed Per Process Technolc 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 | Completed Per Process Technolc 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 | Completed Per Process Technolc 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 | 1/3/0 | 1/3/0 | - | - |
| ESD | E3 | AEC Q100-011 | 1 | 3 | ESD CDM | - | 1500 Volts | - | - | - | 1/3/0 | - | - | - |
| ESD | E3 | AEC Q100-011 | 1 | 3 | ESD CDM | - | 500 Volts | 1/3/0 | 1/3/0 | 1/3/0 | - | 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 | 1/3/0 | 1/3/0 | 1/6/0 | 1/3/0 | - | - |
| ED | E5 | AEC Q100-009 | 3 | 30 | Electrical Distributions | Cpk>1.67 Room, hot, and cold | - | 1/30/0 | 1/30/0 | 1/30/0 | 3/90/0 | 2/60/0 | 1/30/0 | 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
**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-2408-074

# Group 2
# Qualification Report
# Automotive Qualification Summary
# (As per AEC-Q100 Rev. J and JEDEC Guidelines)

Approve Date 07-MAY -2024

## Product Attributes

| Attributes | Qual Device: SN74LVC125AQPWRQ1 | Qual Device: SN74LVC02AQPWRQ1 | QBS Process Reference: SN3257QDYYRQ1 | QBS Package Reference: SN74HCS74QPWRQ1 | QBS Product Reference: SN74LVC11AWBQARQ1 | QBS Product Reference: SN74LVC125AWBQARQ1 | QBS Product Reference: SN74LVC11APWRQ1 | QBS Product Reference: SN74LVC132APWRQ1 | QBS Product Reference: SN74LVC02AWBQARQ1 |
|---|---|---|---|---|---|---|---|---|---|
| **Automotive Grade Level** | Grade 1 | Grade 1 | Grade 1 | 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 | -40 to 125 | -40 to 125 | -40 to 125 |
| **Product Function** | Logic | Logic | Logic | Logic | Logic | Logic | Logic | Logic | Logic |
| **Wafer Fab Supplier** | RFAB | RFAB | RFAB | RFAB | RFAB | RFAB | RFAB | RFAB | RFAB |
| **Assembly Site** | MLA | MLA | PHI | MLA | CDAT | CDAT | MLA | MLA | CDAT |
| **Package Group** | TSSOP | TSSOP | SOT | TSSOP | QFN | QFN | TSSOP | TSSOP | QFN |
| **Package Designator** | PW | PW | DYY | PW | BQA | BQA | PW | PW | BQA |
| **Pin Count** | 14 | 14 | 16 | 14 | 14 | 14 | 14 | 14 | 14 |

QBS: Qual By Similarity
Qual Device SN74LVC125AQPWRQ1 is qualified at MSL1 260C
Qual Device SN74LVC02AQPWRQ1 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: SN74LVC125AQPWRQ1 | Qual Device: SN74LVC02AQPWRQ1 | QBS Process Reference: SN3257QDYYRQ1 | QBS Package Reference: SN74HCS74QPWRQ1 | QBS Product Reference: SN74LVC11AWBQARQ1 | QBS Product Reference: SN74LVC125AWBQARQ1 | QBS Product Reference: SN74LVC11APWRQ1 | QBS Product Reference: SN74LVC132APWRQ1 | QBS Product Reference: SN74LVC02AWBQAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Test Group A - Accelerated Environment Stress Tests** | | | | | | | | | | | | | | | | |
| PC | A1 | JEDEC J-STD-020 JESD22-A113 | 3 | 77 | Preconditioning | MSL1 260C | - | - | - | 3/0/0 | 3/0/0 | 1/0/0 | - | 1/0/0 | - | - |
| HAST | A2 | JEDEC JESD22-A110 | 3 | 77 | Biased HAST | 130C/85%RH | 96 Hours | - | - | 3/231/0 | 3/231/0 | 1/77/0 | - | 1/77/0 | - | - |
| AC/UHAST | A3 | JEDEC JESD22-A102/JEDEC JESD22-A118 | 3 | 77 | Autoclave | 121C/15psig | 96 Hours | - | - | 3/231/0 | 3/231/0 | - | - | - | - | - |
| AC/UHAST | A3 | JEDEC JESD22-A102/JEDEC JESD22-A118 | 3 | 77 | Unbiased HAST | 130C/85%RH | 96 Hours | - | - | - | - | 1/77/0 | - | 1/77/0 | - | - |
| TC | A4 | JEDEC JESD22-A104 and Appendix 3 | 3 | 77 | Temperature Cycle | -65C/150C | 500 Cycles | - | - | 3/231/0 | 3/231/0 | 1/77/0 | - | 1/77/0 | - | - |
| 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 | - | - | 3/135/0 | 3/135/0 | 1/45/0 | - | 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 | 1/77/0 | - | - | - | - |
| HTOL | B1 | JEDEC JESD22-A108 | 3 | 77 | Life Test | 150C | 300 Hours | - | - | 3/231/0 | - | - | - | - | - | - |
| ELFR | B2 | AEC Q100-008 | 3 | 800 | Early Life Failure Rate | 125C | 48 Hours | - | - | - | 3/2400/0 | - | - | - | - | - |
| ELFR | B2 | AEC Q100-008 | 3 | 800 | Early Life Failure Rate | 150C | 24 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 | 3/90/0 | 1/30/0 | - | 1/30/0 | - | - |
| WBP | C2 | MIL-STD883 Method 2011 | 1 | 30 | Wire Bond Pull | Minimum of 5 devices, 30 wires Cpk>1.67 | Wires | - | - | 3/90/0 | 3/90/0 | 1/30/0 | - | 1/30/0 | - | - |
| 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 | - | - | - | 3/30/0 | 3/30/0 | 1/10/0 | - | 1/10/0 | - | - |
| **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 | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Proces 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 | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Proces 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 | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Proces 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 | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Proces 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 | Completed Per Process Technology Requirements | Completed Per Process Technology Requirements | Completed Per Proces 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 | 1/3/0 | 1/3/0 | 1/3/0 | 1/3/0 | - | 1/3/0 |
| ESD | E3 | AEC Q100-011 | 1 | 3 | ESD CDM | - | 1500 Volts | - | - | 1/3/0 | - | - | - | - | - | - |
| ESD | E3 | AEC Q100-011 | 1 | 3 | ESD CDM | - | 500 Volts | 1/3/0 | 1/3/0 | - | 1/3/0 | 1/3/0 | 1/3/0 | 1/3/0 | 1/3/0 | 1/3/0 |
| LU | E4 | AEC Q100-004 | 1 | 6 | Latch-Up | Per AEC Q100-004 | - | 1/6/0 | 1/6/0 | 1/6/0 | 1/6/0 | 1/6/0 | 1/6/0 | 1/6/0 | - | 1/6/0 |
| ED | E5 | AEC Q100-009 | 3 | 30 | Electrical Distributions | Cpk>1.67 Room, hot, and cold | - | 1/30/0 | 1/30/0 | 3/90/0 | 3/90/0 | 3/90/0 | 1/30/0 | 1/30/0 | 1/30/0 | 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
**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-2403-036

# Qualification Report
# Automotive Qualification Summary
# (As per AEC Q006 and JEDEC Guidelines)

Approve Date 20-DECEMBER -2024

## Product Attributes

| Attributes | Qual Device: SN74LVC74AQDRG4Q1 | Qual Device: SN74LVC125AQDRQ1 | Qual Device: SN74LVC02AQDRQ1 | QBS Package, Product Reference: SN74LVC11ADRQ1 | QBS Package, Product Reference: SN74LVC132ADRQ1 | QBS Package, Product Reference: SN74LVC74ADRQ1 |
|---|---|---|---|---|---|---|
| **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** | Logic | Logic | Logic | Logic | Logic | Logic |
| **Wafer Fab Supplier** | RFAB | RFAB | RFAB | RFAB | RFAB | RFAB |
| **Assembly Site** | FMX | FMX | FMX | FMX | FMX | FMX |
| **Package Group** | SOIC | SOIC | SOIC | SOIC | SOIC | SOIC |
| **Package Designator** | D | D | D | D | D | D |
| **Pin Count** | 14 | 14 | 14 | 14 | 14 | 14 |

QBS: Qual By Similarity, also known as Generic Data
Qual Device SN74LVC74AQDRG4Q1 is qualified at MSL1 260C
Qual Device SN74LVC125AQDRQ1 is qualified at MSL1 260C
Qual Device SN74LVC02AQDRQ1 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: SN74LVC74AQDRG4Q1 | Qual Device: SN74LVC125AQDRQ1 | Qual Device: SN74LVC02AQDRQ1 | QBS Reference: SN74LVC11ADRQ1 | QBS Reference: SN74LVC132ADRQ1 | QBS Reference: SN74LVC74ADRQ1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Test Group A - Accelerated Environment Stress Tests | | | | | | | | | | | | | |
| PC | A1 | JEDEC J-STD-020 JESD22-A113 | 3 | 77 | Preconditioning | MSL1 260C | - | - | - | - | 1/0/0 | 1/0/0 | 1/0/0 |
| PC | A1.1 | - | 3 | 22 | SAM Precon Pre | Review for delamination | - | - | - | - | 1/22/0 | 1/22/0 | 1/22/0 |
| PC | A1.2 | - | 3 | 22 | SAM Precon Post | Review for delamination | - | - | - | - | 1/22/0 | 1/22/0 | 1/22/0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HAST | A2.1 | JEDEC JESD22-A110 | 3 | 77 | Biased HAST | 130C/85%RH | 96 Hours | - | - | - | 1/77/0 | 1/77/0 | 1/77/0 |
| HAST | A2.1.2 | - | 3 | 1 | Cross Section, post bHAST, 1X | Post stress cross section | Completed | - | - | - | 1/1/0 | 1/1/0 | 1/1/0 |
| HAST | A2.1.3 | - | 3 | 3 | Wire Bond Shear, post bHAST, 1X | Post stress | - | - | - | - | 1/3/0 | 1/3/0 | 1/3/0 |
| HAST | A2.1.4 | - | 3 | 3 | Bond Pull over Stitch, post bHAST, 1X | Post stress | - | - | - | - | 1/3/0 | 1/3/0 | 1/3/0 |
| HAST | A2.1.5 | - | 3 | 3 | Bond Pull over Ball, post bHAST, 1X | Post stress | - | - | - | - | 1/3/0 | 1/3/0 | 1/3/0 |
| HAST | A2.2 | JEDEC JESD22-A110 | 3 | 70 | Biased HAST | 130C/85%RH | 192 Hours | - | - | - | 1/77/0 | 1/77/0 | 1/77/0 |
| HAST | A2.2.1 | - | 3 | 22 | SAM Analysis, post bHAST 2X | Review for delamination | Completed | - | - | - | 1/22/0 | 1/22/0 | 1/22/0 |
| HAST | A2.2.2 | - | 3 | 1 | Cross Section, post bHAST, 2X | Post stress cross section | Completed | - | - | - | 1/1/0 | 1/1/0 | 1/1/0 |
| HAST | A2.2.3 | - | 3 | 3 | Wire Bond Shear, post bHAST, 2X | Post stress | - | - | - | - | 1/3/0 | 1/3/0 | 1/3/0 |
| HAST | A2.2.4 | - | 3 | 3 | Bond Pull over Stitch, post bHAST, 2X | Post stress | - | - | - | - | 1/3/0 | 1/3/0 | 1/3/0 |
| HAST | A2.2.5 | - | 3 | 3 | Bond Pull over Ball, post bHAST, 2X | Post stress | - | - | - | - | 1/3/0 | 1/3/0 | 1/3/0 |
| TC | A4.1 | JEDEC JESD22-A104 and Appendix 3 | 3 | 77 | Temperature Cycle | -65C/150C | 500 Cycles | - | - | - | 1/77/0 | 1/77/0 | 1/77/0 |
| TC | A4.1.1 | - | 3 | 22 | SAM Analysis, post TC 1X | Review for delamination | Completed | - | - | - | 1/22/0 | 1/22/0 | 1/22/0 |
| TC | A4.1.2 | - | 3 | 1 | Cross Section, post TC, 1X | Post stress cross section | Completed | - | - | - | 1/1/0 | 1/1/0 | 1/1/0 |
| TC | A4.1.3 | - | 3 | 3 | Wire Bond Shear, post TC, 1X | Post stress | - | - | - | - | 1/3/0 | 1/3/0 | 1/3/0 |
| TC | A4.1.4 | - | 3 | 3 | Bond Pull over Stitch, post TC, 1X | Post stress | - | - | - | - | 1/3/0 | 1/3/0 | 1/3/0 |
| TC | A4.1.5 | - | 3 | 3 | Bond Pull over Ball, post TC, 1X | Post stress | - | - | - | - | 1/3/0 | 1/3/0 | 1/3/0 |
| TC | A4.2 | JEDEC JESD22-A104 and Appendix 3 | 3 | 70 | Temperature Cycle | -65C/150C | 1000 Cycles | - | - | - | 1/77/0 | 1/77/0 | 1/77/0 |
| TC | A4.2.1 | - | 3 | 22 | SAM Analysis, post TC, 2X | Review for delamination | Completed | - | - | - | 1/22/0 | 1/22/0 | 1/22/0 |
| TC | A4.2.2 | - | 3 | 1 | Cross Section, post TC, 2X | Post stress cross section | Completed | - | - | - | 1/1/0 | 1/1/0 | 1/1/0 |
| TC | A4.2.3 | - | 3 | 3 | Wire Bond Shear, post TC, 2X | Post stress | - | - | - | - | 1/3/0 | 1/3/0 | 1/3/0 |
| TC | A4.2.4 | - | 3 | 3 | Bond Pull over Stitch, post TC, 2X | Post stress | - | - | - | - | 1/3/0 | 1/3/0 | 1/3/0 |
| TC | A4.2.5 | - | 3 | 3 | Bond Pull over Ball, post TC, 2X | Post stress | - | - | - | - | 1/3/0 | 1/3/0 | 1/3/0 |
| HTSL | A6.1 | JEDEC JESD22-A103 | 3 | 45 | High Temperature Storage Life | 150C | 1000 Hours | - | - | - | - | - | - |
| HTSL | A6.1 | JEDEC JESD22-A103 | 3 | 45 | High Temperature Storage Life | 175C | 500 Hours | - | - | - | 1/45/0 | 1/45/0 | 1/45/0 |
| HTSL | A6.1.1 | - | 3 | 1 | Cross Section, post HTSL, 1X | Post stress cross section | Completed | - | - | - | 1/1/0 | 1/1/0 | 1/1/0 |
| HTSL | A6.2 | JEDEC JESD22-A103 | 3 | 44 | High Temperature Storage Life | 150C | 2000 Hours | - | - | - | - | - | - |
| HTSL | A6.2 | JEDEC JESD22-A103 | 3 | 44 | High Temperature Storage Life | 175C | 1000 Hours | - | - | - | 1/45/0 | 1/45/0 | 1/45/0 |
| HTSL | A6.2.1 | - | 3 | 1 | Cross Section, post HTSL, 2X | Post stress cross section | Completed | - | - | - | 1/1/0 | 1/1/0 | 1/1/0 |
| **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 | 1/30/0 |
| 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 | 1/30/0 |

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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-2408-074

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).

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

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