| PCN Number: | 20221201000.1B | PCN Date: | February 09, 2023 |
|---|---|---|---|
| Title: | Qualification of ASEN as Additional Assembly Site for Select Package Devices | | |
| Customer Contact: | PCN Manager | Dept: | Quality Services |
| Proposed 1st Ship Date: | Mar 02, 2023 | Sample requests accepted until: | Mar 10, 2023* |

*Sample requests received after "Mar 10, 2023" will not be supported.

**Change Type:**

| | | | | | |
|---|---|---|---|---|---|
| ☒ | Assembly Site | ☐ | Design | ☐ | Wafer Bump Site |
| ☐ | Assembly Process | ☐ | Data Sheet | ☐ | Wafer Bump Material |
| ☒ | Assembly Materials | ☐ | Part number change | ☐ | Wafer Bump Process |
| ☐ | Mechanical Specification | ☐ | Test Site | ☐ | Wafer Fab Site |
| ☒ | Packing/Shipping/Labeling | ☐ | Test Process | ☐ | Wafer Fab Materials |
| | | | | ☐ | Wafer Fab Process |

## PCN Details

**Description of Change:**

**Revision B** is to announce the addition of new devices that was not included on the original PCN notification. The new devices are highlighted and **bolded** in the device list below. The expected first shipment date for the new devices will be 90 days from this notice (May 10, 2023) for the newly added devices only. The proposed 1st ship date of Mar 02, 2023 still applies for the original set of devices.

Texas Instruments Incorporated is announcing the qualification of ASEN as Additional Assembly Site for select devices listed in the "Product Affected" Section. Current assembly sites and Material differences are as follows.

| Assembly Site | Assembly Site Origin | Assembly Country Code | Assembly Site City |
|---|---|---|---|
| UTAC | NSE | THA | Bangkok |
| **ASEN** | **ASN** | **CHN** | **Suzhou** |

**Material Differences:**

| | UTAC | ASEN |
|---|---|---|
| Mold Compound | CZ0138 | 1801512111 |

**Reason for Change:**

Continuity of supply.

**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:**

| Assembly Site | | |
|---|---|---|
| UTAC | Assembly Site Origin (22L) | ASO: NSE |
| ASEN | Assembly Site Origin (22L) | ASO: ASN |

Sample product shipping label (not actual product label)


**Product Affected:**

| | | | |
|---|---|---|---|
| 74LVC1G3157DRYRG4 | TPS3421ECDRYR | TPS3896PDRYT | TPS62237DRYR |
| **SN74AUC1G74RSER** | TPS3421ECDRYT | TPS3898ADRYR | TPS62237DRYT |
| SN74LVC1G07DRYR | TPS3421EGDRYR | TPS3898ADRYT | TPS62730DRYR |
| SN74LVC1G07DRYRG4 | TPS3421EGDRYT | TPS3898PDRYR | TPS62730DRYT |
| SN74LVC1G125DRYR | TPS3422EGDRYR | TPS3898PDRYT | TPS62732DRYR |
| SN74LVC1G126DRYR | TPS3422EGDRYT | TPS622311DRYR | TPS62732DRYT |
| SN74LVC1G14DRYR | TPS3895ADRYR | TPS622311DRYT | TPS62733DRYR |
| SN74LVC1G175DRYR | TPS3895ADRYT | TPS622314DRYR | TPS62733DRYT |
| SN74LVC1G3157DRYR | TPS3895PDRYR | TPS622314DRYT | **TS3A24157RSER** |
| TCA6507RUER | TPS3895PDRYT | **TPS62231DRYR** | **TS3A24157RSERG4** |
| TPD3E001DRYR | TPS3896ADRYR | **TPS62231DRYT** | **TS5A23157HRSER** |
| TPD3E001DRYRG4 | TPS3896ADRYT | **TPS62232DRYR** | **TS5A23157RSER** |
| **TPD6E001RSER** | TPS3896PDRYR | **TPS62232DRYT** | |

# Qualification Report

Approved Date 21-Nov-2022

## Qualification Results

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

| Type | Test Name / Condition | Duration | Qual Device: TCA6507RUER |
|---|---|---|---|
| PC | Preconditioning | Level 1 - 260C | 3/693/0 |
| TC | Temperature Cycle, -55C/125C | 700 Cycles | 3/231/0 |
| SAM | Post Temperature Cycle SAM | Devices | 3/15/0 |
| UHAST | Unbiased HAST, 130C | 96 Hours | 3/231/0 |
| SAM | Post Unbiased HAST SAM | Devices | 3/15/0 |
| BHAST | Biased HAST, 130C | 96 Hours | 3/231/0 |
| SAM | Post Biased HAST SAM | Devices | 3/15/0 |
| SD | Solderability, Pb | 155C Dry Bake Preconditioning | 3/66/0 |
| SD | Solderability, Pb-Free | 155C Dry Bake Preconditioning | 3/66/0 |
| BBS | Ball Bond Shear | Ball Bonds | 3/228/0 |
| WBP | Wire Bond Pull | Wires | 3/228/0 |
| PD | Physical Dimensions | (per package drawing requirements) | 3/60/0 |
| MQ | Manufacturability (Assembly) | (per mfg. site requirements) | 3/PASS |
| DSS | Die Shear Strength | Die | 3/30/0 |
| CHAR | Electrical Characterization | Devices | 1/30/0 |
| MSL | Moisture Sensitivity Level | Level 1 - 260C | 3/36/0 |

| | | | |
|---|---|---|---|
| YLD | FTY and Bin Summary | Lots | 3/PASS |

Qual Device TCA6507RUER 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 Temperature Cycle options per JESD47: -55C/125C/700 Cycles and -65C/150C/500 Cycles

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

**Green/Pb-free Status:**

Qualified Pb-Free (SMT) and Green

# Qualification Report

Approved Date 02-Dec-2022

## Qualification Results

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

| Type | Test Name / Condition | Duration | Qual Device: SN74LVC1G07DRYR |
|---|---|---|---|
| PC | Preconditioning | Level 1 - 260C | 3/693/0 |
| TC | Temperature Cycle, -55C/125C | 700 Cycles | 3/231/0 |
| SAM | Post Temperature Cycle SAM | Devices | 3/15/0 |
| UHAST | Unbiased HAST, 130C | 96 Hours | 3/231/0 |
| SAM | Post Unbiased HAST SAM | Devices | 3/15/0 |
| BHAST | Biased HAST, 130C | 96 Hours | 3/231/0 |
| SAM | Post Biased HAST SAM | Devices | 3/15/0 |
| SD | Solderability, Pb-Free | 155C Dry Bake Preconditioning | 3/66/0 |
| BBS | Ball Bond Shear | Ball Bonds | 3/228/0 |
| WBP | Wire Bond Pull | Wires | 3/228/0 |
| PD | Physical Dimensions | (per package drawing requirements) | 3/60/0 |
| MQ | Manufacturability (Assembly) | (per mfg. site requirements) | 3/PASS |
| DSS | Die Shear Strength | Die | 3/30/0 |
| CHAR | Electrical Characterization | Devices | 1/30/0 |
| MSL | Moisture Sensitivity Level | Level 1 - 260C | 3/36/0 |
| YLD | FTY and Bin Summary | Lots | 3/PASS |

Qual Device SN74LVC1G07DRYR 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 Temperature Cycle options per JESD47: -55C/125C/700 Cycles and -65C/150C/500 Cycles

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

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

# Qualification Report

Approved Date 06-Feb-2023

## Qualification Results

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

| Type | Test Name / Condition | Duration | Qual Device: TS5A23157RSER |
|---|---|---|---|
| PC | Preconditioning | Level 1 - 260C | 3/693/0 |
| BHAST | Biased HAST, 130C | 96 Hours | 3/231/0 |
| UHAST | Unbiased HAST, 130C | 96 Hours | 3/231/0 |
| TC | Temperature Cycle, -55C/125C | 700 Cycles | 3/231/0 |
| SAM | Post Temperature Cycle SAM | Devices | 3/15/0 |
| SD | Solderability, Pb-Free | 155C Dry Bake Preconditioning | 3/66/0 |
| MQ | Manufacturability (Assembly) | (per mfg. site requirements) | 3/PASS |
| DSS | Die Shear Strength | Die | 3/30/0 |
| BBS | Ball Bond Shear | Ball Bonds | 3/228/0 |
| WBP | Wire Bond Pull | Wires | 3/228/0 |
| PD | Physical Dimensions | (per package drawing requirements) | 3/60/0 |
| CHAR | Electrical Characterization | Devices | 1/30/0 |
| MSL | Moisture Sensitivity Level | Level 1 - 260C | 3/36/0 |
| YLD | FTY and Bin Summary | Lots | 3/PASS |

Qual Device TS5A23157RSER 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 Temperature Cycle options per JESD47: -55C/125C/700 Cycles and -65C/150C/500 Cycles
Quality and Environmental data is available at TI's external Web site: http://www.ti.com/
Green/Pb-free Status: Qualified Pb-Free (SMT) and Green

# Qualification Report

Approved Date 01-Feb-2023

## Qualification Results

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

| Type | Test Name / Condition | Duration | Qual Device: TPS62231DRYR | Qual Device: TPS62232DRYR |
|---|---|---|---|---|
| PC | Preconditioning | Level 1 - 260C | 3/693/0 | 3/693/0 |
| UHAST | Unbiased HAST, 130C | 96 Hours | 3/231/0 | 3/231/0 |
| SAM | Post Unbiased HAST SAM | Devices | 3/15/0 | 3/15/0 |
| BHAST | Biased HAST, 130C | 96 Hours | 3/231/0 | 3/231/0 |
| SAM | Post Biased HAST SAM | Devices | 3/15/0 | 3/15/0 |

| Type | Test Name / Condition | Duration | Qual Device: TPS62231DRYR | Qual Device: TPS62232DRYR |
|---|---|---|---|---|
| TC | Temperature Cycle, -55C/125C | 700 Cycles | 3/231/0 | 3/231/0 |
| SAM | Post Temperature Cycle SAM | Devices | 3/15/0 | 3/15/0 |
| SD | Solderability, Pb-Free | 155C Dry Bake | 3/66/0 | 3/66/0 |
| MQ | Manufacturability (Assembly) | (per mfg site requirements) | 3/PASS | 3/PASS |
| DSS | Die Shear Strength | Die | 3/30/0 | 3/30/0 |
| BBS | Ball Bond Shear | Ball Bonds | 3/228/0 | 3/228/0 |
| WBP | Wire Bond Pull | Wires | 3/228/0 | 3/228/0 |
| PD | Physical Dimensions | (per pkg drawing requirements) | 3/60/0 | 3/60/0 |
| CHAR | Electrical Characterization | Devices | 1/30/0 | 1/30/0 |
| MSL | Moisture Sensitivity Level | Level 1 - 260C | 3/36/0 | 3/36/0 |
| YLD | FTY and Bin Summary | Lots | 3/PASS | 3/PASS |

Qual Device TPS62231DRYR is qualified at MSL1-260C
Qual Device TPS62232DRYR 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 Temperature Cycle options per JESD47: -55C/125C/700 Cycles and -65C/150C/500 Cycles
Quality and Environmental data is available at TI's external Web site: http://www.ti.com/
Green/Pb-free Status: Qualified Pb-Free (SMT) and Green

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

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

**IMPORTANT NOTICE AND DISCLAIMER**

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

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

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