| PCN Number: | 20210730004.1A | PCN Date: | August 20, 2021 |
|---|---|---|---|
| Title: | Qualify additional Assembly site for select SOT devices | | |
| Customer Contact: | PCN Manager | Dept: | Quality Services |
| Proposed 1st Ship Date: | Nov 20, 2021 | Estimated Sample Availability: | Provided upon Request |

**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 A** is to announce the addition of new devices that was not included on the original PCN notification. The new device is highlighted and **bolded** in the device list below. The expected first shipment date for the new device will be 90 days from this notice (Nov 20, 2021) for the newly added device only. The proposed 1st ship date of Nov 02, 2021 still applies for the original set of devices.

Texas Instruments Incorporated is announcing the qualification of additional Assembly sites for devices listed below in the product affected section. Construction differences and current assembly sites are as follows:

**Group 1 Device:**

| SOT-5X3 (DRL) | |
|---|---|
| Assembly Sites | TIPI, HNA, JCETC8, JCETJY, CDAT |
| Lead Finish | Matte Sn |
| Mold Compound | 4222198<br>450214<br>111020003809 |

**Group 2 Device:**

| SOT-23 (DDC) | |
|---|---|
| Assembly Sites | TIPI, HNA, UTL, JCETC8, JCETJY, CDAT, TIEM |
| Lead Finish | Matte Sn |
| Mold Compound | 4222198<br>450207<br>8097131<br>120800005407 |

**Reason for Change:**

Continuity of Supply

**Anticipated impact on Fit, Form, 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 | | |
|---|---|---|
| TI Philippines | Assembly Site Origin (22L) | ASO: PHI |
| Hana | Assembly Site Origin (22L) | ASO: HNT |
| UTL | Assembly Site Origin (22L) | ASO: NS2 |
| JCETC8 | Assembly Site Origin (22L) | ASO: JC8 |
| JCETJY | Assembly Site Origin (22L) | ASO: JCE |
| TI Chengdu | Assembly Site Origin (22L) | ASO: CDA |
| TI Melaka | Assembly Site Origin (22L) | ASO: CU6 |

Sample product shipping label (not actual product label)


## Group 1 Product Affected:

| | |
|---|---|
| **TPS562231DRLR** | **TPS562231DRLT** |

## Group 2 Product Affected:

| | | | |
|---|---|---|---|
| **SN1501019ADDCR** | TPS562231DRLR | **TPS563209DDCR** | **TPS54202DDCR** |
| **SN1501019DDCR** | **TPS54202DDCT** | **SN1706011DDCT** | TPS562231DRLT |
| **SN1501019DDCT** | **TPS54202HDDCR** | **SN1708041DDCR** | **TPS563209DDCT** |
| **SN1501020DDCR** | **TPS54202HDDCT** | **SN1708041DDCT** | TPS563240DDCR |
| **SN1501020DDCT** | **TPS561201DDCR** | **SN1711021DDCR** | TPS563240DDCT |
| **SN1504025DDCR** | **TPS561201DDCT** | **SN1711021DDCT** | TPS563249DDCR |
| **SN1504025DDCT** | **TPS561208DDCR** | **SN1711023DDCR** | TPS563249DDCT |
| **SN1504026DDCR** | **TPS561208DDCT** | **SN1711023DDCT** | **TPS56339DDCR** |
| **SN1504026DDCT** | **TPS562200DDCR** | **TPS27081ADDCR** | **TPS56339DDCT** |
| SN1611045DDCR | **TPS562200DDCT** | **TPS27082LDDCR** | TPS564201DDCR |
| **SN1702049DDCR** | **TPS562209DDCR** | **TPS54200DDCR** | TPS564201DDCT |
| **SN1704026DDCR** | **TPS562209DDCT** | **TPS54200DDCT** | TPS564208DDCR |
| **SN1704026DDCT** | **TPS563200DDCR** | **TPS54201DDCR** | TPS564208DDCT |
| **SN1706011DDCR** | **TPS563200DDCT** | **TPS54201DDCT** | |

# Group 1 Qualification Report
# (SOT-5X3)

## Qualification Results

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

| | Stress Test | Duration | TIPI TLV62568DRL | CDAT TPS562231DRL |
|---|---|---|---|---|
| TC | Temperature Cycling - 65/150C | 500 Cycles | 3/231/0 | 3/231/0 |
| HAST | Biased HAST 130C/85%RH | 96 hours | 3/231/0 | 3/231/0 |
| HTSL | High Temp. Storage Bake 150C | 1000 hours | - | - |
| HTSL | High Temp. Storage Bake 170C | 420 hours | 3/231/0 | 3/231/0 |
| UHAST | Unbiased HAST, 130C/85%RH | 96 hours | - | 3/231/0 |
| AC | Autoclave 121C | 96 hours | 3/231/0 | - |
| SD | Solderability | 8 Hour Steamage or 155C Dry Bake | 3/66/0 | 3/66/0 |
| MQ | Manufacturability | - | Pass | Pass |

| | Stress Test | Duration | JCETC8 TLV62568PDRL | HNA TMP390A2DRL | JCETJY TMP302BDRL |
|---|---|---|---|---|---|
| TC | Temperature Cycling - 65/150C | 500 Cycles | 3/231/0 | 3/231/0 | 3/231/0 |
| HAST | Biased HAST 130C/85%RH | 96 hours | 3/231/0 | - | 3/231/0 |
| HTSL | Biased HAST 110C/85%RH | 264 hours | - | 3/231/0 | - |
| HTSL | High Temp. Storage Bake 170C | 420 hours | 3/231/0 | 3/231/0 | 3/231/0 (b) |
| UHAST | Unbiased HAST, 130C/85%RH | 96 hours | - | 3/231/0 | 3/231/0 |
| AC | Autoclave 121C | 96 hours | 3/231/0 | - | - |
| SD | Solderability | 8 Hour Steam age or 155C Dry Bake | 3/66/0 | 3/66/0 (a) | 3/66/0 (b) |
| MQ | Manufacturability | - | Pass | Pass | Pass |

All qualification devices in the tables are qualified at L1-260C MSL rating.

Note a – Data collected on SN74AVC1T45DRL
Note b – Data collected on TMP102AIDRL and TMP302BDRL

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, and HTSL, as applicable
- The following are equivalent HTSL options based on activation energy of 0.7eV: 150C/1k Hours, and 170C/420 Hours

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

# Group 2 Qualification Report
# (SOT-23)

## Qualification Results

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

| | Stress Test | Duration | TIPI TPS563249DDC | CDAT TPS563249DDC |
|---|---|---|---|---|
| TC | Temperature Cycling - 65/150C | 500 Cycles | 3/231/0 | 3/231/0 |
| HAST | Biased HAST 130C/85%RH | 96 hours | 3/231/0 | 3/231/0 |
| HTSL | High Temp. Storage Bake 150C | 1000 hours | - | - |
| HTSL | High Temp. Storage Bake 170C | 420 hours | 3/231/0 | 3/231/0 |
| UHAST | Unbiased HAST, 130C/85%RH | 96 hours | 3/231/0 | 3/231/0 |
| AC | Autoclave 121C | 96 hours | - | - |
| SD | Solderability | 8 Hour Steamage or 155C Dry Bake | 3/66/0 (TPS563201DDC) | 3/66/0 |
| MQ | Manufacturability | - | Pass | Pass |

| | Stress Test | Duration | JCETC8 TPS563208DDC | JCETJY TLV62569PDDC |
|---|---|---|---|---|
| TC | Temperature Cycling - 65/150C | 500 Cycles | 3/231/0 | 3/231/0 |
| HAST | Biased HAST 130C/85%RH | 96 hours | 3/231/0 | 3/231/0 |
| HTSL | High Temp. Storage Bake 150C | 1000 hours | - | - |
| HTSL | High Temp. Storage Bake 170C | 420 hours | 3/231/0 | 3/231/0 |
| UHAST | Unbiased HAST, 130C/85%RH | 96 hours | 3/231/0 | - |
| AC | Autoclave 121C | 96 hours | - | 3/231/0 |
| SD | Solderability | 8 Hour Steamage or 155C Dry Bake | 3/66/0 | 3/66/0 (TPS27081ADDC) |
| MQ | Manufacturability | - | Pass | Pass |

| | Stress Test | Duration | UTL LM73CxQDDCRQ1 | TIEM TPL5010QDDCRQ1 | HNA LV2862XLVDDC |
|---|---|---|---|---|---|
| TC | Temperature Cycling - 65/150C | 500 Cycles | 3/231/0 | 3/231/0 | 3/231/0 |
| HAST | Biased HAST 130C/85%RH | 96 hours | 3/231/0 | 3/231/0 | 3/231/0 |
| HTSL | High Temp. Storage Bake 150C | 1000 hours | - | 3/231/0 | - |
| HTSL | High Temp. Storage Bake 170C | 420 hours | 3/231/0 (a) | - | 3/135/0 (b) |
| UHAST | Unbiased HAST, 130C/85%RH | 96 hours | - | 3/231/0 | - |
| AC | Autoclave 121C | 96 hours | 3/231/0 | - | 3/231/0 |
| SD | Solderability | 8 Hour Steam | 2/44/0 (TPS62242QDDC) | 2/44/0 (LM2734XQMK) | 3/66/0 (b) |

| | Stress Test | Duration | UTL LM73CxQDDCRQ1 | TIEM TPL5010QDDCRQ1 | HNA LV2862XLVDDC |
|---|---|---|---|---|---|
| | | age or 155C Dry Bake | | | |
| MQ | Manufacturability | - | Pass | Pass | Pass |

All qualification devices in the tables are qualified at L1-260C MSL rating.

Note a – Data collected on TPS3702EX33QDDCRQ1 and LM73CxQDDCRQ1
Note b – Data collected on LMP8640QMKX-T/NOPB

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, and HTSL, as applicable
- The following are equivalent HTSL options based on activation energy of 0.7eV: 150C/1k Hours, and 170C/420 Hours

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.

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