

| | | | |
|--|---|---------------------------------------|-----------------------|
| PCN Number: | 20210730004.1B | PCN Date: | August 25, 2021 |
| Title: | Qualify additional Assembly site for select SOT devices | | |
| Customer Contact: | PCN Manager | Dept: | Quality Services |
| Proposed 1st Ship Date: | Nov 02, 2021 | Estimated Sample Availability: | Provided upon Request |
| Change Type: | | | |
| <input checked="" type="checkbox"/> | Assembly Site | <input type="checkbox"/> | Design |
| <input type="checkbox"/> | Assembly Process | <input type="checkbox"/> | Data Sheet |
| <input checked="" type="checkbox"/> | Assembly Materials | <input type="checkbox"/> | Part number change |
| <input type="checkbox"/> | Mechanical Specification | <input type="checkbox"/> | Test Site |
| <input checked="" type="checkbox"/> | Packing/Shipping/Labeling | <input type="checkbox"/> | Test Process |
| | | <input type="checkbox"/> | Wafer Bump Site |
| | | <input type="checkbox"/> | Wafer Bump Material |
| | | <input type="checkbox"/> | Wafer Bump Process |
| | | <input type="checkbox"/> | Wafer Fab Site |
| | | <input type="checkbox"/> | Wafer Fab Materials |
| | | <input type="checkbox"/> | Wafer Fab Process |
| PCN Details | | | |
| Description of Change: | | | |
| <p>Revision B is to remove TPS562231DRLR/T from Group 2 devices. Highlighted and bolded devices are additional devices that was not included on the original PCN notification issued under rev A. 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.</p> <p>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:</p> | | | |
| Group 1 Device: | | | |
| SOT-5X3 (DRL) | | | |
| Assembly Sites | TIPI, HNA, JCETC8, JCETJY, CDAT | | |
| Lead Finish | Matte Sn | | |
| Mold Compound | 4222198 450214 111020003809 | | |
| Group 2 Device: | | | |
| SOT-23 (DDC) | | | |
| Assembly Sites | TIPI, HNA, UTL, JCETC8, JCETJY, CDAT, TIEM | | |
| Lead Finish | Matte Sn | | |
| Mold Compound | 4222198 450207 8097131 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 |
|---|---|---|---|
| <input checked="" type="checkbox"/> 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)

TEXAS INSTRUMENTS
 MADE IN: Malaysia
 2DC: 2d:
 MSL 2 /260C/1 YEAR SEAL DT
 MSL 1 /235C/UNLIM 03/29/04
 OPT:
 ITEM: 39
 LBL: 5A (L)T0:1750

(1P) SN74LS07NSR
 (Q) 2000 (D) 0336
 (31T) LOT: 3959047MLA
 (4W) TKY (1T) 7523483SI2
 (P)
 (2P) REV: (V) 0033317
 (20L) CSO: SHE (21L) CCO:USA
 (22L) ASO: MLA (23L) ACO: MYS

Group 1 Product Affected:

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

Group 2 Product Affected:

| | | | |
|-----------------------|----------------------|--------------------------|-----------------------|
| SN1501019ADDCR | SN1708041DDCR | TPS54202HDDCT | TPS563240DDCR |
| SN1501019DDCR | SN1708041DDCT | TPS561201DDCR | TPS563240DDCT |
| SN1501019DDCT | SN1711021DDCR | TPS561201DDCT | TPS563249DDCR |
| SN1501020DDCR | SN1711021DDCT | TPS561208DDCR | TPS563249DDCT |
| SN1501020DDCT | SN1711023DDCR | TPS561208DDCT | TPS56339DDCR |
| SN1504025DDCR | SN1711023DDCT | TPS562200DDCR | TPS56339DDCT |
| SN1504025DDCT | TPS27081ADDCR | TPS562200DDCT | TPS564201DDCR |
| SN1504026DDCR | TPS27082LDDCR | TPS562209DDCR | TPS564201DDCT |
| SN1504026DDCT | TPS54200DDCR | TPS562209DDCT | TPS564208DDCR |
| SN1611045DDCR | TPS54200DDCT | TPS562231DRLR | TPS564208DDCT |
| SN1702049DDCR | TPS54201DDCR | TPS562231DRLT | TPS92200D1DDCR |
| SN1704026DDCR | TPS54201DDCT | TPS563200DDCR | TPS92200D2DDCR |
| SN1704026DDCT | TPS54202DDCR | TPS563200DDCT | |
| SN1706011DDCR | TPS54202DDCT | TPS563209DDCR | |
| SN1706011DDCT | TPS54202HDDCR | TPS563209DDCT | |

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 Steam age 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 | CDAT |
|-------|-------------------------------|-----------------------------------|--------------------------|--------------|
| | | | TPS563249DDC | 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 Steam age or 155C Dry Bake | 3/66/0 (TPS563201DDC) | 3/66/0 |
| MQ | Manufacturability | - | Pass | Pass |

| | Stress Test | Duration | JCETC8 | JCETJY |
|-------|-------------------------------|-----------------------------------|--------------|--------------------------|
| | | | TPS563208DDC | 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 Steam age or 155C Dry Bake | 3/66/0 | 3/66/0 (TPS27081ADDC) |
| MQ | Manufacturability | - | Pass | Pass |

| | Stress Test | Duration | UTL | TIEM | HNA |
|-------|-------------------------------|--------------|--------------------------|------------------------|--------------|
| | | | LM73CxQDDCRQ1 | TPL5010QDDCRQ1 | 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 LM73CxQDDCRQ 1 | TIEM TPL5010QDDCR Q1 | HNA LV2862XLVDD C |
|----|-------------------|----------------------------|--------------------------|----------------------------|-------------------------|
| | | 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

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