

| PCN Number: | 20211001000.1 | PCN Date: | October 11, 2021 | | | | | | | | | |
|--|--|---|---|----------|---------|----------|----------------|--------|--------|---------------|--------|--------|
| Title: | Qualify New Assembly Material set for Selected Device(s) | | | | | | | | | | | |
| Customer Contact: | PCN Manager | Dept: | Quality Services | | | | | | | | | |
| Proposed 1st Ship Date: | Jan 11, 2022 | Estimated Sample Availability: | Date provided at sample request | | | | | | | | | |
| Change Type: | | | | | | | | | | | | |
| <input 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 type="checkbox"/> | Packing/Shipping/Labeling | <input type="checkbox"/> | Test Process | | | | | | | | | |
| <input type="checkbox"/> | | <input type="checkbox"/> | Wafer Bump Site | | | | | | | | | |
| <input type="checkbox"/> | | <input type="checkbox"/> | Wafer Bump Material | | | | | | | | | |
| <input type="checkbox"/> | | <input type="checkbox"/> | Wafer Bump Process | | | | | | | | | |
| <input type="checkbox"/> | | <input type="checkbox"/> | Wafer Fab Site | | | | | | | | | |
| <input type="checkbox"/> | | <input type="checkbox"/> | Wafer Fab Materials | | | | | | | | | |
| <input type="checkbox"/> | | <input type="checkbox"/> | Wafer Fab Process | | | | | | | | | |
| PCN Details | | | | | | | | | | | | |
| Description of Change: | | | | | | | | | | | | |
| <p>Texas Instruments is pleased to announce the qualification of new assembly material set for devices listed in "Product affected" section below. Devices will remain in current assembly facility and piece part changes as follows:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Material</th> <th>Current</th> <th>Proposed</th> </tr> </thead> <tbody> <tr> <td>Mount compound</td> <td>400181</td> <td>400180</td> </tr> <tr> <td>Mold compound</td> <td>450419</td> <td>450423</td> </tr> </tbody> </table> | | | | Material | Current | Proposed | Mount compound | 400181 | 400180 | Mold compound | 450419 | 450423 |
| Material | Current | Proposed | | | | | | | | | | |
| Mount compound | 400181 | 400180 | | | | | | | | | | |
| Mold compound | 450419 | 450423 | | | | | | | | | | |
| 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 | <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: | | | | | | | | | | | | |
| None. | | | | | | | | | | | | |
| Product Affected: | | | | | | | | | | | | |
| TLV70012DDCR | TLV70025DDCT | TLV70036DDCR | TPS62223DDCT | | | | | | | | | |
| TLV70012DDCT | TLV70028DDCR | TLV70036DDCT | TPS62224DDCR | | | | | | | | | |
| TLV70013DDCR | TLV70028DDCT | TPS62220DDCR | TPS62224DDCT | | | | | | | | | |
| TLV70013DDCT | TLV70030DDCR | TPS62220DDCT | TPS62225DDCR | | | | | | | | | |
| TLV70015DDCR | TLV70030DDCT | TPS62221DDCR | TPS62225DDCT | | | | | | | | | |
| TLV70015DDCT | TLV70032DDCR | TPS62221DDCT | TPS62227DDCR | | | | | | | | | |
| TLV70018DDCR | TLV70032DDCT | TPS62222DDCR | TPS62227DDCT | | | | | | | | | |
| TLV70018DDCT | TLV70033DDCR | TPS62222DDCT | TPS62228DDCR | | | | | | | | | |
| TLV70025DDCR | TLV70033DDCT | TPS62223DDCR | TPS62229DDCT | | | | | | | | | |

Qualification Report

Approve Date 30-Sept-2021

Qualification Results

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

| Type | Test Name / Condition | Duration | Qual Device: TLV70036DDCR | Qual Device: TPS62221DDCR | QBS Device TPS25221DBVR | QBS Device TS5A3159DBVR | QBS Device TS5A3166DBVR |
|-------|-------------------------------|-------------------------------|------------------------------|------------------------------|----------------------------|----------------------------|----------------------------|
| PC | Preconditioning | Level 1 - 260C | -- | 1/154/0 | 3/693/0 | 3/693/0 | 3/693/0 |
| PC | Preconditioning | Level 2 - 260C | 1/154/0 | -- | -- | -- | -- |
| AC | Autoclave, 121C | 96 Hours | -- | -- | 3/231/0 | 3/231/0 | 3/231/0 |
| BHAST | Biased HAST, 130C | 96 Hours | -- | -- | 3/231/0 | -- | -- |
| UHAST | Unbiased HAST, 130C | 96 Hours | 1/77/0 | 1/77/0 | -- | -- | -- |
| HTOL | Life Test, 140C | 480 Hours | -- | -- | 1/77/0 | -- | -- |
| HTSL | High Temp. Storage Bake, 150C | 1000 Hours | -- | -- | -- | 3/231/0 | 3/231/0 |
| TC | Temperature Cycle, -65C/150C | 500 Cycles | 1/77/0 | 1/77/0 | 3/231/0 | 3/231/0 | 3/231/0 |
| ED | Electrical Distributions | (per datasheet requirements) | -- | -- | 3/Pass | -- | -- |
| MQ | Manufacturability (Assembly) | (per mfg. site specification) | 1/Pass | 1/Pass | 3/Pass | 3/Pass | 3/Pass |
| PD | Physical Dimensions | (per drawing requirements) | 1/30/0 | 1/30/0 | 3/15/0 | 3/15/0 | 3/15/0 |
| LI | Lead Fatigue | Leads | -- | -- | -- | 3/66/0 | -- |
| LI | Lead Pull | Leads | -- | -- | -- | 3/66/0 | -- |
| SD | Solderability | Pb-Free | -- | -- | -- | 3/66/0 | -- |
| YLD | FTY and Bin Summary | - | 1/Pass | 1/Pass | -- | -- | 3/Pass |

- QBS: Qual By Similarity
- Qual Device TPS62221DDCR is qualified at LEVEL1-260C
- Qual Device TLV70036DDCR is qualified at LEVEL2-260C
- QBS Device TPS25221DBVR is qualified at LEVEL1-260C
- QBS Device TS5A3166DBVR is qualified at LEVEL1-260C
- QBS Device TS5A3159DBVR is qualified at LEVEL1-260C

- 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/1000 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/1000 Hours, and 170C/420 Hours
- The following are equivalent Temp 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

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