| | | | |
|---|---|---|---|
| **PCN Number:** | 20170927001 | **PCN Date:** | Oct. 3, 2017 |
| **Title:** | Qualify New Assembly Material set for Selected Device(s) | | |
| **Customer Contact:** | PCN Manager | **Dept:** | Quality Services |
| **Proposed 1st Ship Date:** | Apr 01, 2018 | **Estimated Sample Availability:** | Date provided at sample 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:**

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:

| Material | Current | Proposed |
|---|---|---|
| Mount compound | 4042500, 4208458 | 4211470 |
| Mold compound | 4205694 | 4209640 |

**Reason for Change:**

Continuity of supply.

**Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):**

None.

**Anticipated impact on Material Declaration**

| | | | |
|---|---|---|---|
| ☐ | No Impact to the Material Declaration | ☒ | Material Declarations or Product Content reports are driven from production data and will be available following the production release. Upon production release the revised reports can be obtained from the TI Eco-Info website. There is no impact to the material meeting current regulatory compliance requirements with this PCN change. |

**Changes to product identification resulting from this PCN:**

None.

**Product Affected:**

| | | | |
|---|---|---|---|
| ISO1176DW | ISO721MD | ISO7221MDRG4 | ISO7240CDWR |
| ISO1176DWG4 | ISO721MDG4 | ISO722D | ISO7240CDWRG4 |
| ISO1176DWR | ISO721MDR | ISO722DG4 | ISO7240CFDW |
| ISO1176DWRG4 | ISO721MDRG4 | ISO722DR | ISO7240CFDWG4 |
| ISO15DW | ISO7220AD | ISO722DRG4 | ISO7240CFDWR |
| ISO15DWG4 | ISO7220ADG4 | ISO722MD | ISO7240MDW |
| ISO15DWR | ISO7220ADR | ISO722MDR | ISO7240MDWG4 |
| ISO15DWRG4 | ISO7220ADRG4 | ISO722MDRG4 | ISO7240MDWR |
| ISO15MDW | ISO7220BD | ISO7230ADW | ISO7240MDWRG4 |
| ISO15MDWR | ISO7220BDG4 | ISO7230ADWG4 | ISO7241ADW |
| ISO3080DW | ISO7220BDR | ISO7230ADWR | ISO7241ADWG4 |
| ISO3080DWG4 | ISO7220BDRG4 | ISO7230CDW | ISO7241ADWR |
| ISO3080DWR | ISO7220CD | ISO7230CDWG4 | ISO7241ADWRG4 |
| ISO3080DWRG4 | ISO7220CDG4 | ISO7230CDWR | ISO7241CDW |
| ISO3082DW | ISO7220CDR | ISO7230MDW | ISO7241CDWG4 |
| ISO3082DWG4 | ISO7220CDRG4 | ISO7230MDWG4 | ISO7241CDWR |
| ISO3082DWR | ISO7220MD | ISO7230MDWR | ISO7241CDWRG4 |
| ISO3082DWRG4 | ISO7220MDG4 | ISO7231ADW | ISO7241MDW |
| ISO3086DW | ISO7220MDR | ISO7231ADWG4 | ISO7241MDWG4 |
| ISO3086DWG4 | ISO7220MDRG4 | ISO7231ADWR | ISO7241MDWR |
| ISO3086DWR | ISO7221AD | ISO7231ADWRG4 | ISO7241MDWRG4 |
| ISO3088DW | ISO7221ADG4 | ISO7231CDW | ISO7242ADW |
| ISO3088DWG4 | ISO7221ADR | ISO7231CDWG4 | ISO7242ADWG4 |
| ISO3088DWR | ISO7221ADRG4 | ISO7231CDWR | ISO7242ADWR |
| ISO3088DWRG4 | ISO7221BD | ISO7231CDWRG4 | ISO7242ADWRG4 |
| ISO35DW | ISO7221BDG4 | ISO7231MDW | ISO7242CDW |
| ISO35DWG4 | ISO7221BDR | ISO7231MDWG4 | ISO7242CDWG4 |
| ISO35DWR | ISO7221BDRG4 | ISO7231MDWR | ISO7242CDWR |
| ISO35DWRG4 | ISO7221CD | ISO7231MDWRG4 | ISO7242MDW |
| ISO35MDW | ISO7221CDG4 | ISO7240ADW | ISO7242MDWG4 |
| ISO35MDWR | ISO7221CDR | ISO7240ADWG4 | ISO7242MDWR |
| ISO721D | ISO7221CDRG4 | ISO7240ADWR | ISO7242MDWRG4 |
| ISO721DG4 | ISO7221MD | ISO7240ADWRG4 | MPD23782D |
| ISO721DR | ISO7221MDG4 | ISO7240CDW | |
| ISO721DRG4 | ISO7221MDR | ISO7240CDWG4 | |

# Qualification Plan

## BCB site change from Amkor K4 to TIEM as well as BOM change to latest approved ISO BOM

(Qualification Target date: Apr 01, 2018)

### Product Attributes

| Attributes | Qual Device: AMC1203BDUB | Qual Device: ISO7221AQDRQ1 | Qual Device: ISO7221CD | Qual Device: ISO7221CHD | Qual Device: AMC1203BDW | Qual Device: ISO3082DW | Qual Device: ISO35TDW | Qual Device: ISO7241CQDWRQ1 |
|---|---|---|---|---|---|---|---|---|
| **Assembly Site** | HNT | TAI | TAI | TAI | TAI | TAI | TAI | TAI |
| **Package Family** | SOP | SOIC | SOIC | SOIC | SOIC | SOIC | SOIC | SOIC |
| **Flammability Rating** | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 |
| **Wafer Fab Supplier** | DFAB, TSMC | DFAB | DFAB | DFAB | DFAB, TSMC | DFAB | DFAB | DFAB |
| **Wafer Fab Process** | 0.5UM, LBC4 | LBC4 | LBC4 | LBC4 | 0.5UM, LBC4 | LBC3S, LBC4 | LBC4, lbc3s | LBC4 |

- QBS: Qual By Similarity
- Qual Devices ISO7221CHD and ISO7221CD are qualified at LEVEL1-260C
- Qual Devices ISO3082DW and ISO35TDW are qualified at LEVEL2-260C
- Qual Devices ISO7241CQDWRQ1, AMC1203BDUB, AMC1203BDW, and ISO7221AQDRQ1 are qualified at LEVEL3-260C
- The following Devices contain multiple dies: ISO35TDW, ISO7221CHD, ISO7221CD, ISO7241CQDWRQ1, AMC1203BDUB, ISO7221AQDRQ1, AMC1203BDW, ISO3082DW

### Qualification Plan

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

| Type | Test Name / Condition | Duration | Qual Device: ..AMC1203BDUB | Qual Device: .ISO7221AQDRQ1 | Qual Device: .ISO7221CD | Qual Device: .ISO7221CHD |
|---|---|---|---|---|---|---|
| AC | Autoclave 121C | 96 Hours | 3/77/TBD | 3/77/TBD | 3/77/TBD | 1/77/TBD |
| ED | Electrical Characterization | Per Datasheet Parameters | 1/30/0 | TBD | TBD | TBD |
| HAST | **Biased HAST 130C/85%RH | 96 Hours | 3/77/TBD | 3/77/TBD | 3/77/TBD | - |
| HTOL | Life Test, 140C | 480 Hours | - | 3/77/TBD | - | - |
| HTSL | High Temp. Storage Life, 175C | 500 Hours | - | 1/45/TBD | - | - |
| HTSL | High Temp. Storage Bake, 170C | 420 Hours | 3/77/TBD | - | 3/77/TBD | - |
| TC | Temperature Cycle, -65/150C | Cycles | 3/77/TBD | 3/77/TBD | 3/77/TBD | - |
| WBP | Bond Pull | 76 Wires, 3 units min | 3/76/TBD | 3/76/TBD | 3/76/TBD | 3/76/TBD |
| WBS | Ball Bond Shear | Wires | 3/76/TBD | 3/76/TBD | 3/76/TBD | 3/76/TBD |

| Type | Test Name / Condition | Duration | Qual Device: AMC1203BDW | Qual Device: ISO3082DW | Qual Device: ISO35TDW | Qual Device: ISO7241CQDWRQ1 |
|---|---|---|---|---|---|---|
| AC | Autoclave 121C | 96 Hours | 1/77/TBD | 1/77/TBD | 1/77/TBD | 3/77/TBD |
| ED | Electrical Characterization | Per Datasheet Parameters | TBD | TBD | TBD | - |
| HAST | **Biased HAST 130C/85%RH | 96 Hours | - | - | - | 3/77/TBD |
| HTOL | Life Test, 140C | 480 Hours | - | - | - | 3/77/TBD |
| HTSL | High Temp. Storage Life, 175C | 500 Hours | - | - | - | 1/45/TBD |
| HTSL | High Temp. Storage Bake, 170C | 420 Hours | 1/77/TBD | 1/77/TBD | 1/77/TBD | - |
| TC | Temperature Cycle, -65/150C | Cycles | 1/77/TBD | 1/77/TBD | 1/77/TBD | 3/77/TBD |
| WBP | Bond Pull | 76 Wires, 3 units min | 1/76/TBD | 1/76/TBD | 1/76/TBD | 3/76/TBD |
| WBS | Ball Bond Shear | Wires | 1/76/TBD | 1/76/TBD | 1/76/TBD | 3/76/TBD |

- 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

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 |
|---|---|
| USA | PCNAmericasContact@list.ti.com |
| Europe | PCNEuropeContact@list.ti.com |
| Asia Pacific | PCNAsiaContact@list.ti.com |
| Japan | PCNJapanContact@list.ti.com |