12500 TI Boulevard, MS 8640, Dallas, Texas 75243

**PCN#20190301000.1**
**Qualification of TI Chengdu A/T (CDAT) as an Assembly and test site Select Devices**
**Change Notification / Sample Request**

**Date:** March 04, 2019
**To:** TOKYO ELECTRON DEVICE (DSTR) PCN

Dear Customer:

This is an announcement of a change to a device that is currently offered by Texas Instruments. The details of this change are on the following pages.

We request you acknowledge receipt of this notification within **30** days of the date of this notice. Lack of acknowledgement of this notice within 30 days constitutes acceptance of the change. If you require samples or additional data to support your evaluation, please request within 30 days.

The proposed first ship date is indicated on page 3 of this notification, unless customer agreement has been reached on an earlier implementation of the change.

This notice does not change the end-of-life status of any product. Should product affected be on a previously issued product withdrawal/discontinuance notice, this notification does not extend the life of that product or change the life time buy offering/discontinuance plan.

For questions regarding this notice, contact your local Field Sales Representative or the PCN Team (PCN_ww_admin_team@list.ti.com). For sample requests or sample related questions, contact the TI Samples Team at pcn_sr_team@list.ti.com.

Sincerely,

PCN Team
SC Business Services

**20190301000.1**
**Change Notification / Sample Request**
**Attachments**

## Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

| DEVICE | CUSTOMER PART NUMBER |
|---|---|
| CC2533F64RHAR | null |
| CC2540F256RHAT | null |
| MSP430FR5969IRGZT | null |
| MSP430FR5869IRGZR | null |
| MSP430FR5869IRGZT | null |
| CC2533F96RHAR | null |

Technical details of this Product Change follow on the next page(s).

| | | | |
|---|---|---|---|
| **PCN Number:** | 20190301000.1 | **PCN Date:** | Mar 4 2019 |
| **Title:** | Qualification of TI Chengdu A/T (CDAT) as an Assembly and test site for Select Devices | | |
| **Customer Contact:** | PCN Manager | **Dept:** | Quality Services |
| **Proposed 1st Ship Date:** | June 4 2019 | **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 TI Chengdu (CDAT) as an Additional Assembly site for the list of devices shown below. Current assembly sites and Material differences are as follows:

**Group 1 Devices:**

| | Clark | CDAT |
|---|---|---|
| Leadframe Prep | none | roughened |
| Mold compound | 4208625 | 4222198 |
| Mount Compound | 4207768 | 4207123 |

**Group 2 Devices:**

| | Clark | CDAT |
|---|---|---|
| Mold compound | 4208625 | 4222198 |

**Group 3 Devices:**

| | Clark | UTAC | CDAT |
|---|---|---|---|
| Mold compound | 4208625 | SID#CZ0134 | 4222198 |
| Mount compound | 4207123 | SID#PZ0031 | 4207123 |
| Lead Finish | NiPdAu | NiPdAuAg | NiPdAu |

Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.

**Reason for Change:**

Continuity of Supply

**Anticipated impact on Form, Fit, 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 at the site link below http://www.ti.com/quality/docs/materialcontentsearch.tsp |

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

| Assembly Site | Assembly Site Origin (22L) | Assembly Country Code (21L) | Assembly City |
|---|---|---|---|
| TI Clark | QAB | PHL | Angeles City, Pampanga |
| UTAC | NSE | THA | Bangkok |
| **CDAT** | **CDA** | **CHN** | **Chengdu** |

Sample product shipping label (not actual product label)


## Product Affected:

### Group 1 Devices:

| | | | |
|---|---|---|---|
| MSP430FR58671IRGZR | MSP430FR5868IRGZR | MSP430FR5967IRGZR | MSP430FR59691IRGZR |
| MSP430FR58671IRGZT | MSP430FR5868IRGZT | MSP430FR5967IRGZT | MSP430FR59691IRGZT |
| MSP430FR5867IRGZR | MSP430FR5869IRGZR | MSP430FR5968IRGZR | MSP430FR5969IRGZR |
| MSP430FR5867IRGZT | MSP430FR5869IRGZT | MSP430FR5968IRGZT | MSP430FR5969IRGZT |

### Group 2 Devices:

| | | | |
|---|---|---|---|
| TPS25740ARGER | TPS25740RGER | TPS25741ARSMR | TPS25741RSMR |
| TPS25740ARGET | TPS25740RGET | TPS25741ARSMT | TPS25741RSMT |

### Group 3 Devices:

| | | | |
|---|---|---|---|
| CC2530F128RHAR | CC2531F256RHAT | CC2534RHAX | CC2541F256RHAR |
| CC2530F128RHAT | CC2533ARHAR | CC2540F128RHAR | CC2541F256RHAT |
| CC2530F12CRHA | CC2533CRHAR | CC2540F128RHAT | CC2541SRHAR |
| CC2530F256RHAR | CC2533F32RHAR | CC2540F256RHAR | CC2541SRHAT |
| CC2530F256RHAT | CC2533F32RHAT | CC2540F256RHAT | CC2570RHAR |
| CC2530F25CRHA | CC2533F64RHAR | CC2540F25ARHAR | CC2570RHAT |
| CC2530F32RHAR | CC2533F64RHAT | CC2540TF256RHAR | CC2571RHAR |
| CC2530F32RHAT | CC2533F96RHA | CC2540TF256RHAT | CC2571RHAT |
| CC2530F64RHAR | CC2533F96RHAR | CC2541CRHA | FRE008RHAR |
| CC2530F64RHAT | CC2533F96RHAT | CC2541CRHAR | FRE009RHAR |
| CC2531F128RHAR | CC2534RHA | CC2541F128RHAR | FRE010RHAR |
| CC2531F128RHAT | CC2534RHAR | CC2541F128RHAT | FRE015RHAR |
| CC2531F256RHAR | CC2534RHAT | | |

## Group 1 Devices Qual Memo:

TI Information
Selective Disclosure

# Qualification Report

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

| Type | Test Name / Condition | Duration | Qual Device: MSP430FR5969IRGZ | QBS Package Reference: MSP430FR2633IRHB |
|---|---|---|---|---|
| AC | Autoclave 121C | 96 Hours | 3/231/0 | - |
| HAST | Biased HAST, 110C/85%RH | 264 Hours | - | 3/231/0 |
| HTSL | High Temp. Storage Bake, 150C | 1000 Hours | - | 3/231/0 |
| TC | Temperature Cycle, -65/150C | 500 Cycles | 3/231/0 | - |
| WBP | Bond Pull | Wires | 3/228/0 | - |
| WBS | Ball Bond Shear | Wires | 3/228/0 | - |

- QBS: Qualification By Similarity
- Qualification Device MSP430FR5969IRGZ is qualified at LEVEL2-260C
- Preconditioning was performed for Autoclave, Biased HAST, Temperature Cycle, and High Temp. Storage Bake.

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 Devices Qual Memo:

TI Information
Selective Disclosure

# Qualification Report

### Qualification Results

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

| Type | Test Name / Condition | Duration | Qual Device: TPS25725RSM | Qual Device: TPS25740ARGE | Qual Device: TPS25740RGE | Qual Device: TPS25741ARSM | Qual Device: TPS25741RSM | QBS Package Reference: TPS2231RGPR |
|---|---|---|---|---|---|---|---|---|
| AC | Autoclave 121C | 96 Hours | - | - | - | - | - | 3/231/0 |
| ED | Electrical Characterization | Per Datasheet Parameters | - | - | Pass | - | Pass | - |
| ELFR | Early Life Failure Rate, 125C | 48 Hours | - | - | - | - | - | - |
| HAST | Biased HAST, 130C/85%RH | 96 Hours | - | - | - | - | - | - |
| HBM | ESD - HBM | 3000 V | - | 1/3/0 | - | - | - | - |
| CDM | ESD - CDM | 1000 V | 1/3/0 | 1/3/0 | - | - | 1/3/0 | - |
| HTOL | Life Test, 125C | 1000 Hours | - | - | - | - | - | - |
| HTOL | Life Test, 140C | 480 Hours | - | - | - | - | - | - |
| HTOL | Life Test, 150C | 300 Hours | - | - | - | - | - | - |
| HTOL | Life Test, 155C | 240 Hours | - | - | - | - | - | 3/231/0 |
| HTSL | High Temp. Storage Bake, 170C | 420 Hours | - | - | - | - | - | 3/231/0 |
| HTSL | High Temp. Storage Bake, 150C | 500 Hours | - | - | - | - | - | - |
| LU | Latch-up | (per JESD78) | - | 1/6/0 | - | - | 1/6/0 | - |
| PD | Physical Dimensions | -- | - | - | - | - | - | 3/15/0 |
| SD | Solderability | 8 Hours Steam Age | - | - | - | - | - | 3/66/0 |
| TC | Temperature Cycle, -55/125C | 700 Cycles | - | - | - | - | - | - |
| TC | Temperature Cycle, -65/150C | 500 Cycles | - | - | - | - | - | 3/231/0 |
| TS | Thermal Shock -65/150C | 500 Cycles | - | - | - | - | - | 3/231/0 |
| UHAST | Unbiased HAST, 130C/85%RH | 96 Hours | - | - | - | - | - | - |
| WBP | Bond Pull | Wires | - | - | - | - | - | 3/228/0 |
| WBS | Bond Shear | Wires | - | - | - | - | - | 3/228/0 |
| YLD | FTY and Bin Summary | -- | Pass | Pass | Pass | Pass | Pass | - |

- QBS: Qual By Similarity
- Qual Devices qualified at LEVEL2-260CG: TPS25740RGE, TPS25741RSM, TPS25725RSM, TPS25740ARGE, TPS25741ARSM
- 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

## Group 3 Devices Qual Memo:

TI Information
Selective Disclosure

### Qualification Report

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

| Type | Test Name / Condition | Duration | Qual Device: CC2540F256RHAR | QBS Package Reference: MSP430F5172IRSBR |
|---|---|---|---|---|
| AC | Autoclave 121C | 96 Hours | 1/77/0 | 3/231/0 |
| HAST | Biased HAST, 110C/85%RH | 264 Hours | - | 3/77/0 |
| HTSL | High Temp Storage Bake 150C | 1000 Hours | - | 3/231/0 |
| TC | Temperature Cycle, -55/125C | 700 Cycles | 1/77/0 | - |
| TC | Temperature Cycle, -65/150C | 500 Cycles | - | 3/231/0 |

- QBS: Qual By Similarity
- Qual Device CC2540F256RHAR is qualified at LEVEL3-260C
- 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/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 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 |
| WW PCN Team | PCN_ww_admin_team@list.ti.com |