TEXAS INSTRUMENTS 12500 TI Boulevard, MS 8640, Dallas, Texas 75243

# PCN#20150624001
# Add Cu as Alternative Wire Base Metal for Selected Device(s)
## Change Notification / Sample Request

**Date:** 7/1/2015
**To:** Newark/Farnell 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 Manager (PCN_ww_admin_team@list.ti.com).

Sincerely,

PCN Team
SC Business Services

## 20150624001
## Attachment: 1

### 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 |
|---|---|
| SN74AVC32T245ZKER | null |

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

| | | | |
|---|---|---|---|
| **PCN Number:** | 20150624001 | **PCN Date:** | 07/01/2015 |
| **Title:** | Add Cu as Alternative Wire Base Metal for Selected Device(s) | | |
| **Customer Contact:** | PCN Manager | **Dept:** | Quality Services |
| **Proposed 1st Ship Date:** | 10/01/2015 | **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 Cu as an additional bond wire option for devices listed in "Product affected" section below. Devices will remain in current assembly facilities and there will be no other piece part changes:

| Group | Pkg Family | Current Wire | Additional Wire |
|---|---|---|---|
| 1 | uBGA | Au, 0.96 mil | Cu, 0.80 mil |
| 2 | SOP | Au, 0.96 mil | Cu, 0.96 mil |

### Reason for Change:

Continuity of supply.

1) To align with world technology trends and use wiring with enhanced mechanical and electrical properties
2) Maximize flexibility within our Assembly/Test production sites.
3) Cu is easier to obtain and stock

### 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 from the TI ECO website. |

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

None

## Product Affected:

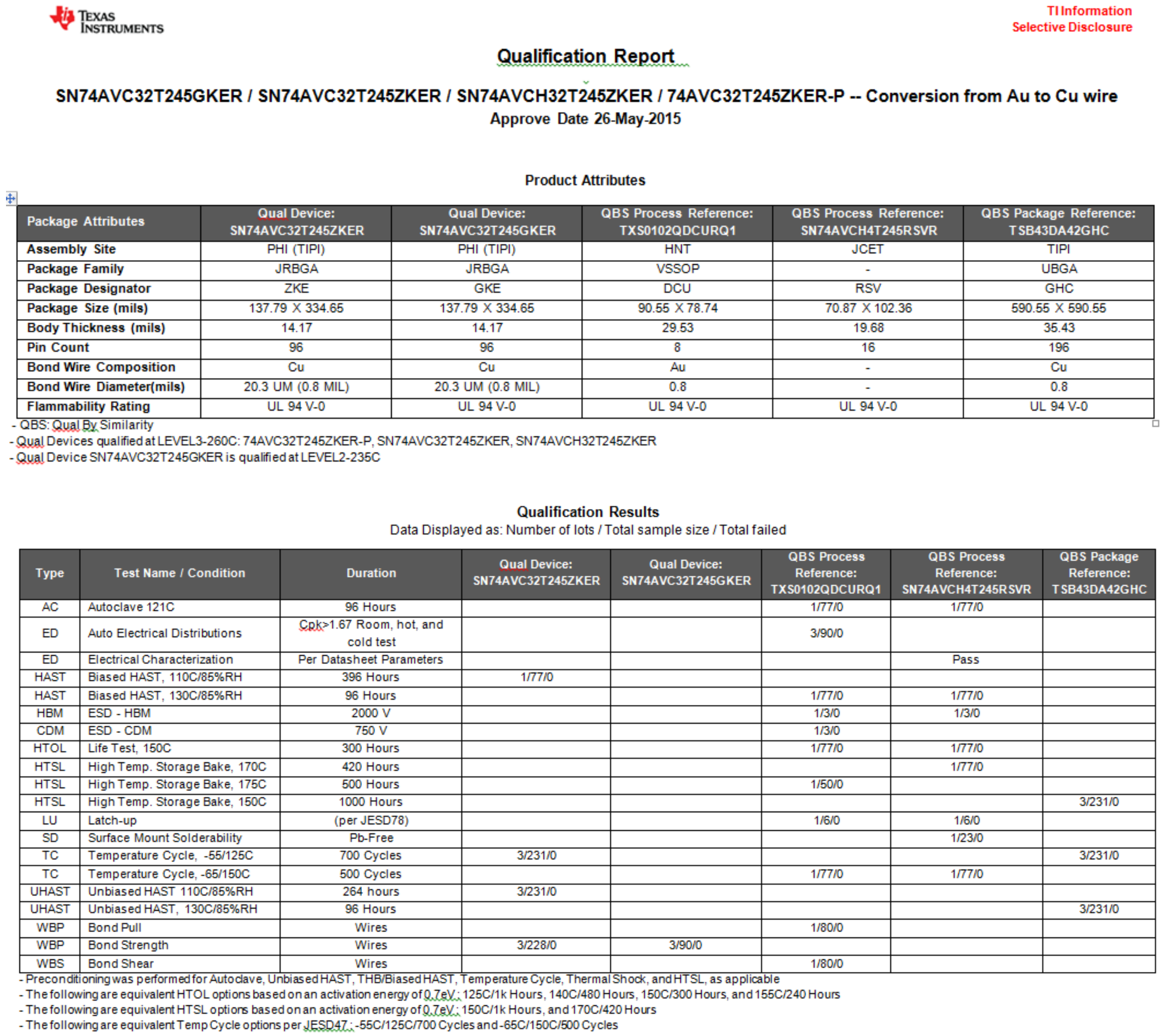
### Group 1 Devices

| | | | |
|---|---|---|---|
| 74AVC32T245ZKER-P | SN74AVC32T245GKER | SN74AVC32T245ZKER | SN74AVCH32T245ZKER |

### Group 2 Devices

| |
|---|
| SN1301037NSR |

## Group 1 Devices Qualification Data



TI Information
Selective Disclosure

### Qualification Report

**SN74AVC32T245GKER / SN74AVC32T245ZKER / SN74AVCH32T245ZKER / 74AVC32T245ZKER-P -- Conversion from Au to Cu wire**
**Approve Date 26-May-2015**

**Product Attributes**

| Package Attributes | Qual Device: SN74AVC32T245ZKER | Qual Device: SN74AVC32T245GKER | QBS Process Reference: TXS0102QDCURQ1 | QBS Process Reference: SN74AVCH4T245RSVR | QBS Package Reference: TSB43DA42GHC |
|---|---|---|---|---|---|
| **Assembly Site** | PHI (TIPI) | PHI (TIPI) | HNT | JCET | TIPI |
| **Package Family** | JRBGA | JRBGA | VSSOP | - | UBGA |
| **Package Designator** | ZKE | GKE | DCU | RSV | GHC |
| **Package Size (mils)** | 137.79 X 334.65 | 137.79 X 334.65 | 90.55 X 78.74 | 70.87 X 102.36 | 590.55 X 590.55 |
| **Body Thickness (mils)** | 14.17 | 14.17 | 29.53 | 19.68 | 35.43 |
| **Pin Count** | 96 | 96 | 8 | 16 | 196 |
| **Bond Wire Composition** | Cu | Cu | Au | - | Cu |
| **Bond Wire Diameter(mils)** | 20.3 UM (0.8 MIL) | 20.3 UM (0.8 MIL) | 0.8 | - | 0.8 |
| **Flammability Rating** | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 |

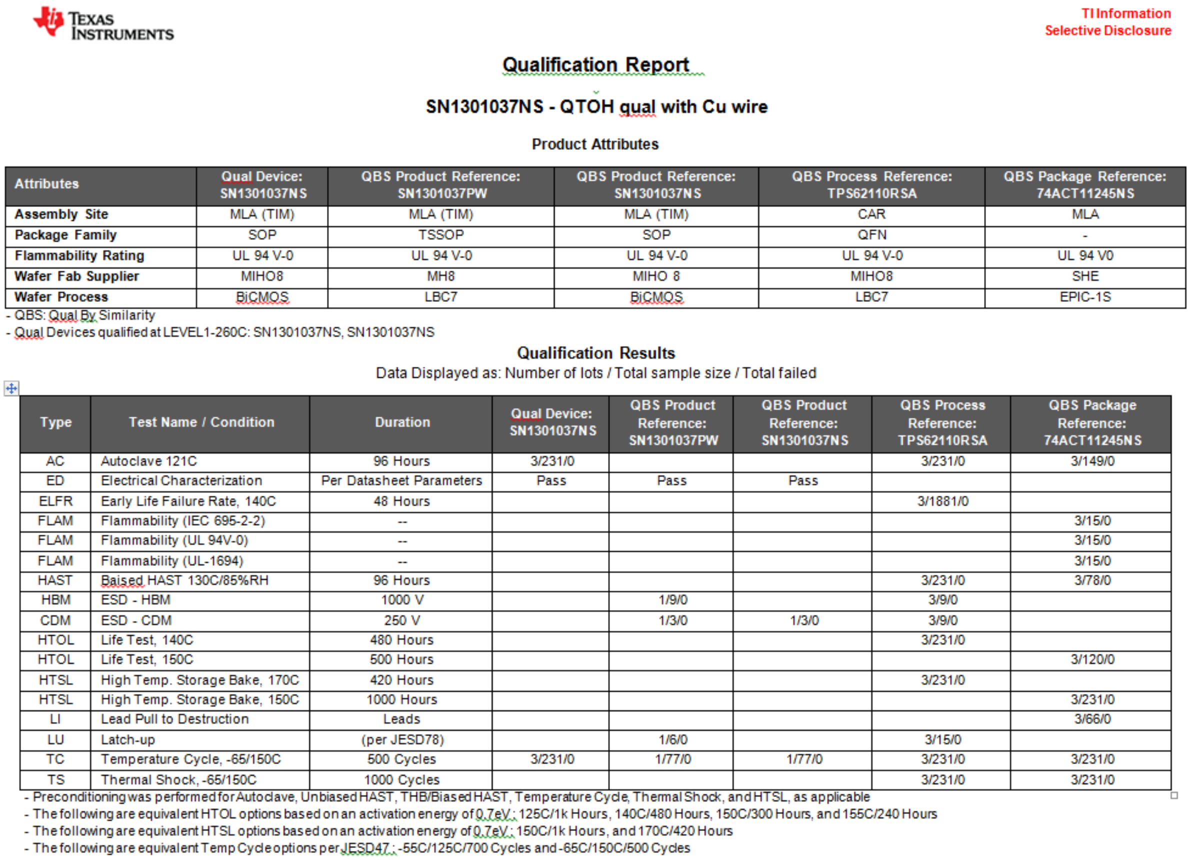
- QBS: Qual By Similarity
- Qual Devices qualified at LEVEL3-260C: 74AVC32T245ZKER-P, SN74AVC32T245ZKER, SN74AVCH32T245ZKER
- Qual Device SN74AVC32T245GKER is qualified at LEVEL2-235C

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

| Type | Test Name / Condition | Duration | Qual Device: SN74AVC32T245ZKER | Qual Device: SN74AVC32T245GKER | QBS Process Reference: TXS0102QDCURQ1 | QBS Process Reference: SN74AVCH4T245RSVR | QBS Package Reference: TSB43DA42GHC |
|---|---|---|---|---|---|---|---|
| AC | Autoclave 121C | 96 Hours | | | 1/77/0 | 1/77/0 | |
| ED | Auto Electrical Distributions | Cpk>1.67 Room, hot, and cold test | | | 3/90/0 | | |
| ED | Electrical Characterization | Per Datasheet Parameters | | | | Pass | |
| HAST | Biased HAST, 110C/85%RH | 396 Hours | 1/77/0 | | | | |
| HAST | Biased HAST, 130C/85%RH | 96 Hours | | | 1/77/0 | 1/77/0 | |
| HBM | ESD - HBM | 2000 V | | | 1/3/0 | 1/3/0 | |
| CDM | ESD - CDM | 750 V | | | 1/3/0 | | |
| HTOL | Life Test, 150C | 300 Hours | | | 1/77/0 | 1/77/0 | |
| HTSL | High Temp. Storage Bake, 170C | 420 Hours | | | | 1/77/0 | |
| HTSL | High Temp. Storage Bake, 175C | 500 Hours | | | 1/50/0 | | |
| HTSL | High Temp. Storage Bake, 150C | 1000 Hours | | | | | 3/231/0 |
| LU | Latch-up | (per JESD78) | | | 1/6/0 | 1/6/0 | |
| SD | Surface Mount Solderability | Pb-Free | | | | 1/23/0 | |
| TC | Temperature Cycle, -55/125C | 700 Cycles | 3/231/0 | | | | 3/231/0 |
| TC | Temperature Cycle, -65/150C | 500 Cycles | | | 1/77/0 | 1/77/0 | |
| UHAST | Unbiased HAST 110C/85%RH | 264 hours | 3/231/0 | | | | |
| UHAST | Unbiased HAST, 130C/85%RH | 96 Hours | | | | | 3/231/0 |
| WBP | Bond Pull | Wires | | | 1/80/0 | | |
| WBP | Bond Strength | Wires | 3/228/0 | 3/90/0 | | | |
| WBS | Bond Shear | Wires | | | 1/80/0 | | |

- 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

## Group 2 Device Qualification Data



TI Information
Selective Disclosure

### Qualification Report

### SN1301037NS - QTOH qual with Cu wire

**Product Attributes**

| Attributes | Qual Device: SN1301037NS | QBS Product Reference: SN1301037PW | QBS Product Reference: SN1301037NS | QBS Process Reference: TPS62110RSA | QBS Package Reference: 74ACT11245NS |
|---|---|---|---|---|---|
| **Assembly Site** | MLA (TIM) | MLA (TIM) | MLA (TIM) | CAR | MLA |
| **Package Family** | SOP | TSSOP | SOP | QFN | - |
| **Flammability Rating** | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V0 |
| **Wafer Fab Supplier** | MIHO8 | MH8 | MIHO 8 | MIHO8 | SHE |
| **Wafer Process** | BiCMOS | LBC7 | BiCMOS | LBC7 | EPIC-1S |

- QBS: Qual By Similarity
- Qual Devices qualified at LEVEL1-260C: SN1301037NS, SN1301037NS

**Qualification Results**

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

| Type | Test Name / Condition | Duration | Qual Device: SN1301037NS | QBS Product Reference: SN1301037PW | QBS Product Reference: SN1301037NS | QBS Process Reference: TPS62110RSA | QBS Package Reference: 74ACT11245NS |
|---|---|---|---|---|---|---|---|
| AC | Autoclave 121C | 96 Hours | 3/231/0 | | | 3/231/0 | 3/149/0 |
| ED | Electrical Characterization | Per Datasheet Parameters | Pass | Pass | Pass | | |
| ELFR | Early Life Failure Rate, 140C | 48 Hours | | | | 3/1881/0 | |
| FLAM | Flammability (IEC 695-2-2) | -- | | | | | 3/15/0 |
| FLAM | Flammability (UL 94V-0) | -- | | | | | 3/15/0 |
| FLAM | Flammability (UL-1694) | -- | | | | | 3/15/0 |
| HAST | Baised HAST 130C/85%RH | 96 Hours | | | | 3/231/0 | 3/78/0 |
| HBM | ESD - HBM | 1000 V | | 1/9/0 | | 3/9/0 | |
| CDM | ESD - CDM | 250 V | | 1/3/0 | 1/3/0 | 3/9/0 | |
| HTOL | Life Test, 140C | 480 Hours | | | | 3/231/0 | |
| HTOL | Life Test, 150C | 500 Hours | | | | | 3/120/0 |
| HTSL | High Temp. Storage Bake, 170C | 420 Hours | | | | 3/231/0 | |
| HTSL | High Temp. Storage Bake, 150C | 1000 Hours | | | | | 3/231/0 |
| LI | Lead Pull to Destruction | Leads | | | | | 3/66/0 |
| LU | Latch-up | (per JESD78) | | 1/6/0 | | 3/15/0 | |
| TC | Temperature Cycle, -65/150C | 500 Cycles | 3/231/0 | 1/77/0 | 1/77/0 | 3/231/0 | 3/231/0 |
| TS | Thermal Shock, -65/150C | 1000 Cycles | | | | 3/231/0 | 3/231/0 |

- 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

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 |