12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20140319001A
Add Cu as Alternative Wire Base Metal for Selected Device(s) on QFN, QFP and SOT-23 packages
Change Notification / Sample Request

Dear Customer:

The purpose of this version A is to retract and add devices from this change notification. The retraction is for select devices that were inadvertently included and are not affected by this change. We apologize for any inconvenience this may have caused

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 changes discussed within this PCN will not take effect any earlier than **90** days from the date of this notification, unless customer agreement has been reached on an earlier implementation of the change. This notification period is per TI's standard process.

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
Phone: +1(214) 480-6037
Fax: +1(214) 480-6659

PCN# 20140319001A
Attachment: 1

Products Affected:

According to our records, there are the affected device(s) that you have purchased within the past twenty-four (24) months. Technical details of this Product Change follow on the next page(s).

PCN Number:	20140319001A	PCN Date:	05/15/2014
Title:	Add Cu as Alternative Wire Base Metal for Selected Device(s) on QFN, QFP and SOT-23 packages		
Customer Contact:	PCN Manager	Phone: +1(214)480-6037	Dept: Quality Services
Proposed 1st Ship Date:	08/15/2014	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:

The purpose of Revision A is to Retract devices (which were inadvertently added and are not affected by this change) and to Add devices under Group 3 in the Product Affected Section.

- Retracted device – with ~~strikethrough~~ and highlighted in yellow
- Additional device – highlighted in yellow

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 facility and piece part changes as follows.

Group 1 Device: No other piece part change, Only Au to Cu wire

Group 2 Device: Changes Wire Composition and Wire Diameter

	From	To
Wire	0.96 mil Au	0.80 mil Cu

Group 3 Device: Changes Mold Compound, Wire Composition and Wire Diameter

	From	To
Mold Compound	450207, 450228	450413
Wire	0.60, 0.80, 1.0 mil Au	0.80, 1.0 mil Cu

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 Fit, Form, Function, Quality or Reliability (positive / negative):

None.

Changes to product identification resulting from this PCN:

None.

Product Affected: Group 1 devices - No other piece part change, Only Au to Cu wire

TPS65633ARTER	TPS65633RTER	TPS65633RTET

Product Affected: Group 2 devices - Changes Wire Composition and Wire Diameter

DRV91670PHP	DRV91670PHP-MC	DRV91670PHPR

Product Affected: Group 3 devices - Changes Mold Compound, Wire Composition and Wire Diameter

74AHC1G125DBVRE4	SN74AHC1G08DBVR	SN74LVC1G32DBVRG4	TS5A4594DBVRE4
74AHC1G125DBVRG4	SN74AHC1G08DBVRE4	SN74LVC1G34DBVR	TS5A4594DBVRG4
74AHC1G126DBVRE4	SN74AHC1G08DBVRG4	SN74LVC1G34DBVRE4	SN74AHC1G02DBVT
74AHC1G126DBVRG4	SN74AHC1G125DBVR	SN74LVC1G34DBVRG4	SN74AHC1G86DBV6
74AHC1GU04DBVRE4	SN74AHC1G126DBVR	SN74LVC1G66DBVR	SN74AHC1G86DBVT
74AHC1GU04DBVRG4	SN74AHC1G86DBVR	SN74LVC1G66DBVRE4	SN74AHC1GU04DBVT
74AHCT1G00DBVRE4	SN74AHC1G86DBVRE4	SN74LVC1G66DBVRG4	SN74AHCT1G00DBVT
74AHCT1G00DBVRG4	SN74AHC1G86DBVRG4	SN74LVC1G79DBVR	SN74AHCT1G04DBVT
74AHCT1G04DBVRE4	SN74AHC1GU04DBVR	SN74LVC1G79DBVRE4	SN74AHCT1G125DBVT
74AHCT1G04DBVRG4	SN74AHCT1G00DBVR	SN74LVC1G79DBVRG4	SN74AHCT1G86DBV6
74AHCT1G08DBVRE4	SN74AHCT1G04DBVR	SN74LVC1G80DBVR	SN74AHCT1G86DBVT
74AHCT1G08DBVRG4	SN74AHCT1G08DBVR	SN74LVC1G80DBVRE4	SN74AUC1G04DBVR
74AHCT1G125DBVRE4	SN74AHCT1G125DBVR	SN74LVC1G80DBVRG4	SN74AUC1G08DBVR
74AHCT1G125DBVRG4	SN74AHCT1G126DBVR	SN74LVC1G86DBVR	SN74AUC1G125DBVR
74AHCT1G126DBVRE4	SN74AHCT1G32DBVR	SN74LVC1G86DBVRE4	SN74AUC1G240DBVR
74AHCT1G126DBVRG4	SN74AHCT1G86DBVR	SN74LVC1G86DBVRG4	SN74AUP1G04DBVT
74AHCT1G32DBVRE4	SN74AUP1G04DBVR	SN74LVC1GU04DBVR	SN74AUP1G14DBVR
74AHCT1G32DBVRG4	SN74AUP1G04DBVRE4	TL343IDBVR	SN74AUP1G32DBVR
74AHCT1G86DBVRE4	SN74AUP1G04DBVRG4	TL343IDBVRE4	SN74AUP1G34DBVR
74AHCT1G86DBVRG4	SN74AUP1G07DBVR	TL343IDBVRG4	SN74CBT1G384DBVR
74AUP1G125DBVRE4	SN74AUP1G07DBVRE4	TL431ACDBVR	SN74CBT1G384DBVT
74AUP1G125DBVRG4	SN74AUP1G07DBVRG4	TL431ACDBVRE4	SN74CBTD1G125DBVR
74CBT1G125DBVRE4	SN74AUP1G125DBVR	TL431ACDBVRG4	SN74CBTD1G125DBVT
74CBT1G125DBVRG4	SN74CBT1G125DBVR	TL431CDBVR	SN74CBTD1G384DBVR
74CBTLV1G125DBVRE4	SN74CBTLV1G125DBVR	TL431CDBVRE4	SN74LVC1G02DBVT
74CBTLV1G125DBVRG4	SN74LVC1G02DBVR	TL431CDBVRG4	SN74LVC1G06DBVT
74LVC1G126DBVRE4	SN74LVC1G02DBVRE4	TL431IDBVR	SN74LVC1G07DBVT
74LVC1G126DBVRG4	SN74LVC1G02DBVRG4	TL431IDBVRE4	SN74LVC1G132DBVT
74LVC1G132DBVRE4	SN74LVC1G06DBVR	TL431IDBVRG4	SN74LVC1G14DBVT
74LVC1G132DBVRG4	SN74LVC1G06DBVRE4	~~TLV431AIDBVR~~	SN74LVC1G240DBVT
74LVC1G240DBVRE4	SN74LVC1G06DBVRG4	~~TLV431AIDBVRE4~~	SN74LVC1G32DBVT
74LVC1G240DBVRG4	SN74LVC1G07DBVR	~~TLV431AIDBVRG4~~	SN74LVC1G34DBVT
74LVC1GU04DBVRE4	SN74LVC1G07DBVRE4	~~TLV431CDBVR~~	SN74LVC1G66DBVT
74LVC1GU04DBVRG4	SN74LVC1G07DBVRG4	~~TLV431CDBVRE4~~	SN74LVC1G79DBVT
SN003166DBVR	SN74LVC1G126DBVR	~~TLV431CDBVRG4~~	SN74LVC1G80DBVT
SN1003028DBVR	SN74LVC1G132DBVR	~~TLV431IDBVR~~	SN74LVC1G86DBVT
SN74AHC1G02DBVR	SN74LVC1G14DBVR	~~TLV431IDBVRE4~~	SN74LVC1GU04DBVT
SN74AHC1G02DBVRE4	SN74LVC1G14DBVRE4	~~TLV431IDBVRG4~~	TL431CDBVT
SN74AHC1G02DBVRG4	SN74LVC1G14DBVRG4	TS5A3166DBVR	TS5A4595DBVR
SN74AHC1G04DBVR	SN74LVC1G240DBVR	TS5A3166DBVRE4	
SN74AHC1G04DBVRE4	SN74LVC1G32DBVR	TS5A3166DBVRG4	
SN74AHC1G04DBVRG4	SN74LVC1G32DBVRE4	TS5A4594DBVR	

Qualification Data : Group 1 Devices

This qualification has been developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.

Qual Vehicle 1 : TPA2017D2RTJ (MSL 2-260C)

Package Construction Details

Assembly Site:	TI-Clark	Mold Compound:	4208625
# Pins-Designator, Family:	20-RTJ, QFN	Mount Compound:	4207768
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu

Qualification: ☐ **Plan** ☒ **Test Results**

Reliability Test	Conditions	Sample Size/Fail		
		Lot# 1	Lot# 2	Lot# 3
**High Temp Storage Bake	170C (420 Hrs)	86/0	87/0	87/0
**Autoclave	121C (240 Hrs)	87/0	87/0	87/0
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
X-ray	(top side only)	5/0	5/0	-
Salt Atmosphere	24 Hours	22/0	22/0	22/0
Surface Mount Solderability	8 Hours Steam Age-Pb Free Solder	22/0	22/0	22/0
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass
Moisture Sensitivity	(level 2 @ 260C peak +5/-0C)	12/0	12/0	12/0

Notes **- Preconditioning sequence: Level 2-260C.

Qual Vehicle 2 : TPS2543QRTE (MSL 2-260C)

Package Construction Details

Assembly Site:	TI-Clark	Mold Compound:	4208625
# Pins-Designator, Family:	16-RTE, QFN	Mount Compound:	4207768
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	2.0 Mil Dia., Cu

Qualification: ☐ **Plan** ☒ **Test Results**

Reliability Test	Conditions	Sample Size/Fail		
		Lot# 1	Lot# 2	Lot# 3
** Life Test	150C (408 Hrs)	77/0	77/0	77/0
**High Temp Storage Bake	175C (500 Hrs)	78/0	80/0	79/0
**Autoclave	121C (240 Hrs)	87/0	87/0	87/0
**Biased HAST	130C/85%RH (96 Hrs)	77/0	77/0	77/0
**Temperature Cycle	-65C/+150C (500 Cyc)	77/0	77/0	77/0
Surface Mount Solderability	Pb Free/Solder-	15/0	15/0	-
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass
Moisture Sensitivity	(level 2 @ 260C peak +5/-0C)	12/0	12/0	12/0

Notes **- Preconditioning sequence: Level 2-260C.

Qualification Data : Group 2 Devices

This qualification has been developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.

Qual Vehicle 1 : DRV91670PHPR (MSL 3-260C)

Package Construction Details

Assembly Site:	TAI	Mold Compound:	4205443
# Pins-Designator, Family:	48-PHP, HTQFP	Mount Compound:	4208458
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.80 Mil Dia., Cu

Qualification: ☐ **Plan** ☒ **Test Results**

Reliability Test	Conditions	Sample Size/Fail		
		Lot# 1	Lot# 2	Lot# 3
Electrical Characterization	-	Pass	Pass	Pass
**High Temp Storage Bake	170C (420 Hrs)	77/0	77/0	77/0
**Autoclave	121C (96 Hrs)	77/0	77/0	77/0
** Temperature Cycle	-65C/+150C (500 Cyc)	77/0	77/0	77/0
ESD CDM	+/- 250V; +/- 1500V	3/0	-	-
ESD HBM	+/- 1000V; +/- 2500V	3/0	-	-
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass
Moisture Sensitivity	(level 3 @ 260C peak +5/-0C)	12/0	-	-

Notes **- Preconditioning sequence: Level 3-260C.

Qualification Data : Group 3 Devices

This qualification has been developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.

Qual Vehicle 1 : SN74AHC1G126DBVR (MSL 1-260C)

Package Construction Details

Assembly Site:	HNT	Mold Compound:	450413
# Pins-Designator, Family:	5-DBV, SOT-23	Mount Compound:	400154
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	1.0 Mil Dia., Cu

Qualification: ☐ **Plan** ☒ **Test Results**

Reliability Test	Conditions	Sample Size/Fail		
		Lot# 1	Lot# 2	Lot# 3
**High Temp Storage Bake	170C (600 Hrs)	82/0	85/0	84/0
**Autoclave	121C (192 Hrs)	77/0	77/0	77/0
** Temperature Cycle	-65C/+150C (500 Cyc)	77/0	77/0	77/0
Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	22/0	22/0	22/0

Notes **- Preconditioning sequence: Level 1-260C.

Qual Vehicle 2 : SN74CBTLV1G125DBVR (MSL 1-260C)			
Package Construction Details			
Assembly Site:	HNT	Mold Compound:	450413
# Pins-Designator, Family:	5-DBV, SOT-23	Mount Compound:	400154
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.8 Mil Dia., Cu

Qualification: ☐ **Plan** ☒ **Test Results**

Reliability Test	Conditions	Sample Size/Fail
**High Temp Storage Bake	170C (600 Hrs)	90/0
**Autoclave	121C (96 Hrs)	77/0
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0

Notes **- Preconditioning sequence: Level 1-260C.

Qual Vehicle 3 : SN74LVC1GU04DBVR (MSL 1-260C)			
Package Construction Details			
Assembly Site:	HNT	Mold Compound:	450413
# Pins-Designator, Family:	5-DBV, SOT-23	Mount Compound:	400154
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.80 Mil Dia., Cu

Qualification: ☐ **Plan** ☒ **Test Results**

Reliability Test	Conditions	Sample Size/Fail		
		Lot# 1	Lot# 2	Lot# 3
**High Temp Storage Bake	170C (420 Hrs)	87/0	87/0	89/0
**Autoclave	121C (192 Hrs)	77/0	77/0	77/0
**Biased HAST	130C/85%RH (192 Hrs)	80/0	80/0	80/0
** Temperature Cycle	-65C/+150C (500 Cyc)	77/0	77/0	77/0
Solderability	Pb Free/Solder	22/0	22/0	22/0
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass
Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	22/0	22/0	22/0

Notes **- Preconditioning sequence: Level 1-260C.

Qual Vehicle 4 : TS321IDBVT (MSL 1-260C)			
Package Construction Details			
Assembly Site:	HNT	Mold Compound:	450413
# Pins-Designator, Family:	5-DBV, SOT-23	Mount Compound:	400154
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	1.0 Mil Dia., Cu

Qualification: ☐ **Plan** ☒ **Test Results**

Reliability Test	Conditions	Sample Size/Fail		
		Lot# 1	Lot# 2	Lot# 3
**High Temp Storage Bake	170C (420 Hrs)	79/0	80/0	80/0
**Autoclave	121C (192 Hrs)	77/0	77/0	77/0
** Temperature Cycle	-65C/+150C (500 Cyc)	77/0	77/0	77/0
Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	22/0	22/0	22/0

Notes **- Preconditioning sequence: Level 1-260C.

Qual Vehicle 5 : TS5A3166DBVR (MSL 1-260C)			
Package Construction Details			
Assembly Site:	HNT	Mold Compound:	450413
# Pins-Designator, Family:	5-DBV, SOT-23	Mount Compound:	400154
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.8 Mil Dia., Cu

Qualification: ☐ **Plan** ☒ **Test Results**

Reliability Test	Conditions	Sample Size/Fail
**Autoclave	121C (96 Hrs)	77/0
** Temperature Cycle	-65C/+150C (500 Cyc)	77/0
Notes **- Preconditioning sequence: Level 1-260C.		

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