

<b>PCN Number:</b>	20140319001B		<b>PCN Date:</b>	09/01/2015																
<b>Title:</b>	Add Cu as Alternative Wire Base Metal for Selected Device(s) on QFN, QFP and SOT-23 packages																			
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Dept:</b>	Quality Services																	
<b>Change Type:</b>																				
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design	<input type="checkbox"/>	Wafer Bump Site															
<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet	<input type="checkbox"/>	Wafer Bump Material															
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change	<input type="checkbox"/>	Wafer Bump Process															
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Wafer Fab Site															
<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<input type="checkbox"/>	Wafer Fab Materials															
				<input type="checkbox"/>	Wafer Fab Process															
<b>PCN Details</b>																				
<b>Description of Change:</b>																				
<p>Revision B is to remove select devices in the Product Affected Section (with <del>strikethrough</del>) and highlighted in yellow. These devices were inadvertently added and not affected by this change. The other devices listed below with a strikethrough were retracted under revision A of PCN20140319001.</p> <p>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.</p> <p><b>Group 1 Device: No other piece part change, Only Au to Cu wire</b></p> <p><b>Group 2 Device: Changes Wire Composition and Wire Diameter</b></p> <table border="1"> <thead> <tr> <th></th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td>Wire</td> <td>0.96 mil Au</td> <td>0.80 mil Cu</td> </tr> </tbody> </table> <p><b>Group 3 Device: Changes Mold Compound, Wire Composition and Wire Diameter</b></p> <table border="1"> <thead> <tr> <th></th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td>Mold Compound</td> <td>450207, 450228</td> <td>450413</td> </tr> <tr> <td>Wire</td> <td>0.60, 0.80, 1.0 mil Au</td> <td>0.80, 1.0 mil Cu</td> </tr> </tbody> </table>							From	To	Wire	0.96 mil Au	0.80 mil Cu		From	To	Mold Compound	450207, 450228	450413	Wire	0.60, 0.80, 1.0 mil Au	0.80, 1.0 mil Cu
	From	To																		
Wire	0.96 mil Au	0.80 mil Cu																		
	From	To																		
Mold Compound	450207, 450228	450413																		
Wire	0.60, 0.80, 1.0 mil Au	0.80, 1.0 mil Cu																		
<b>Reason for Change:</b>																				
<p>Continuity of supply.</p> <ol style="list-style-type: none"> <li>To align with world technology trends and use wiring with enhanced mechanical and electrical properties</li> <li>Maximize flexibility within our Assembly/Test production sites.</li> <li>Cu is easier to obtain and stock</li> </ol>																				
<b>Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):</b>																				
None.																				
<b>Changes to product identification resulting from this PCN:</b>																				
None.																				

<b>Product Affected: Group 1 devices - No other piece part change, Only Au to Cu wire</b>			
TPS65633ARTER	TPS65633RTER	TPS65633RTET	
<b>Product Affected: Group 2 devices - Changes Wire Composition and Wire Diameter</b>			
DRV91670PHP	DRV91670PHP-MC	DRV91670PHPR	
<b>Product Affected: Group 3 devices - Changes Mold Compound, Wire Composition and Wire Diameter</b>			
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.				
<b>Qual Vehicle 1 : DRV91670PHPR (MSL 3-260C)</b>				
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	
<b>Qualification:</b> <input type="checkbox"/> Plan <input checked="" type="checkbox"/> 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.				
<b>Qual Vehicle 1 : SN74AHC1G126DBVR (MSL 1-260C)</b>				
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	
<b>Qualification:</b> <input type="checkbox"/> Plan <input checked="" type="checkbox"/> 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.				

<b>Qual Vehicle 2 : SN74CBTLV1G125DBVR (MSL 1-260C)</b>				
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	
<b>Qualification:</b> <input type="checkbox"/> Plan <input checked="" type="checkbox"/> 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.				
<b>Qual Vehicle 3 : SN74LVC1GU04DBVR (MSL 1-260C)</b>				
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	
<b>Qualification:</b> <input type="checkbox"/> Plan <input checked="" type="checkbox"/> 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.				
<b>Qual Vehicle 4 : TS321IDBVT (MSL 1-260C)</b>				
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	
<b>Qualification:</b> <input type="checkbox"/> Plan <input checked="" type="checkbox"/> 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.				

<b>Qual Vehicle 5 : TS5A3166DBVR (MSL 1-260C)</b>			
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
<b>Qualification:</b> <input type="checkbox"/> <b>Plan</b> <input checked="" type="checkbox"/> <b>Test Results</b>			
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.

<b>Location</b>	<b>E-Mail</b>
USA	<a href="mailto:PCNAmericasContact@list.ti.com">PCNAmericasContact@list.ti.com</a>
Europe	<a href="mailto:PCNEuropeContact@list.ti.com">PCNEuropeContact@list.ti.com</a>
Asia Pacific	<a href="mailto:PCNAsiaContact@list.ti.com">PCNAsiaContact@list.ti.com</a>
Japan	<a href="mailto:PCNJapanContact@list.ti.com">PCNJapanContact@list.ti.com</a>