

<b>PCN Number:</b>	20140609000		<b>PCN Date:</b>	06/19/2014							
<b>Title:</b>	Add Cu as Alternative Wire Base Metal for Selected Device(s)										
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Phone:</b>	+1(214)480-6037	<b>Dept:</b>	Quality Services						
<b>Proposed 1<sup>st</sup> Ship Date:</b>	09/19/2014	<b>Estimated Sample Availability:</b>	Date provided at sample request								
<b>Change Type:</b>											
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design	<input type="checkbox"/>	Wafer Bump Site						
<input checked="" 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"/>		<input type="checkbox"/>	Wafer Fab Process						
<b>PCN Details</b>											
<b>Description of Change:</b>											
<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. Following identifies the material differences for the Product Affected list:</p> <ul style="list-style-type: none"> <li>• <b>Group 1 – Wire material change only</b></li> <li>• <b>Group 2 – Wire material and diameter change</b></li> </ul> <table border="1" style="margin-left: 40px;"> <thead> <tr> <th></th> <th style="text-align: center;">Au wire</th> <th style="text-align: center;">Cu Bond wire</th> </tr> </thead> <tbody> <tr> <td>Wire dia. (Mils)</td> <td style="text-align: center;">1.3</td> <td style="text-align: center;">1.0</td> </tr> </tbody> </table>							Au wire	Cu Bond wire	Wire dia. (Mils)	1.3	1.0
	Au wire	Cu Bond wire									
Wire dia. (Mils)	1.3	1.0									
<b>Reason for Change:</b>											
<p>Continuity of supply.</p> <ol style="list-style-type: none"> <li>1) To align with world technology trends and use wiring with enhanced mechanical and electrical properties</li> <li>2) Maximize flexibility within our Assembly/Test production sites.</li> <li>3) 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.											

**Product Affected: Group 1 – Devices that will have no change on wire diameter**

SN1106058IRGCR	ADS6124IRHBR	CDCLVP2104RHDT	TPS780180300DRVT
TRF372017IRGZR	ADS4122IRGZT	CDCLVP2108RGZT	TPS780230300DRVR
ADS41B49IRGZR	ADS4125IRGZR	CDCM61001RHBT	TPS780230300DRVT
CD3238RGJR	ADS4125IRGZT	INA216A4RSWT	TPS780300250DRVT
ADS4246IRGCR	ADS4126IRGZ25	PCF8574RGTR	TPS780330220DRVR
TPS71745DSER	ADS4126IRGZR	PGA870IRHDR	TPS780330220DRVT
ADS62P43IRGCR	ADS4126IRGZT	PGA870IRHDT	TPS78101DRVT
TPS720105DRVR	ADS4128IRGZ25	SN0911010RGZR	TPS781330220DRVR
CDCE62005RGZR	ADS4128IRGZR	SN1001021DRCR	TPS781330220DRVT
TPS72015DRVR	ADS4128IRGZT	SN1105063IRGZR	TPS78222DRVR
TCA6424ARGJR	ADS4129IRGZ25	SN1201019IRGCT	TPS78222DRVT
SN0909016RGZR	ADS4129IRGZR	SN53003B4RGJR	TPS78225DRVR
TS3USB221ERSER	ADS4142IRGZR	THS9000DRWT	TPS78225DRVT
ADS62P48IRGCR	ADS4142IRGZT	TLV70036DSER	TPS78227DRVT
TLV70225DSER	ADS4145IRGZ25	TLV70036DSET	TPS78228DRVT
CDCE72010RGCT	ADS4145IRGZR	TLV70225DSET	TRF3710IRGZR
TS3A44159RGTR	ADS4145IRGZT	TLV70228DSER	TRF3710IRGZT
TPS40304ADRCR	ADS4146IRGZ25	TLV70228DSET	TRF371109IRGZR
ADS58C28IRGCT	ADS4146IRGZR	TLV70229DSER	TRF371109IRGZT
ADS41B29IRGZR	ADS4146IRGZT	TLV70229DSET	TRF371125IRGZT
CDCM61004RHBR	ADS4149IRGZ25	TLV70233DSET	TRF371135IRGZR
CDCLVP2104RHDR	ADS4149IRGZR	TLV70236DSER	TRF371135IRGZT
ADS62P45IRGCT	ADS4149IRGZT	TLV70236DSET	TRF3761-AIRHAR
TS3USB221DRCR	ADS41B25IRGZR	TLV71210DSER	TRF3761-AIRHAT
ADS4229IRGCT	ADS41B25IRGZT	TLV71211DSET	TRF3761-BIRHAR
ADS4249IRGCR	ADS41B29IRGZ25	TPD6E001RSFR	TRF3761-BIRHAT
CDCE62005RGZT	ADS41B29IRGZT	TPD8S009DSMR	TRF3761-CIRHAT
BQ24392RSER	ADS41B49IRGZ25	TPS61093DSKT	TRF3761-DIRHAR
TPS72725DSER	ADS41B49IRGZT	TPS62122DRVT	TRF3761-DIRHAT
TUSB2551ARGTR	ADS4222IRGCT	TPS71709DSET	TRF3761-EIRHAR
CDCLVP1208RHDR	ADS4225IRGC25	TPS717185DSER	TRF3761-EIRHAT
TPS62122DRVR	ADS4225IRGCR	TPS717185DSET	TRF3761-FIRHAR
SN1201019IRGCR	ADS4225IRGCT	TPS71718DSER	TRF3761-FIRHAT
TPS72719DSER	ADS4226IRGC25	TPS71718DSET	TRF3761-GIRHAR
CDCE72010RGCR	ADS4226IRGCR	TPS71727DSET	TRF3761-GIRHAT
CDCM61002RHBR	ADS4226IRGCT	TPS71728DSET	TRF3761-HIRHAR
TSU6111ARSVR	ADS4229IRGC25	TPS71733DSET	TRF3761-HIRHAT
TUSB1105RGTR	ADS4229IRGCR	TPS71745DSET	TRF3761-JIRHAT
TSU6111RSVR	ADS4242IRGCR	TPS71812-33DRVR	TS3A5018RSVR
CDCM9102RHBR	ADS4242IRGCT	TPS71812-33DRVT	TUSB1105RTZR
ADS62P45IRGCR	ADS4245IRGC25	TPS71818-33DRVT	TUSB1106RTZR
ADS4122IRGZR	ADS4245IRGCT	TPS71825-12DRVT	ADS42B49IRGC25
TRF372017IRGZT	ADS4246IRGC25	TPS71828-30DRVR	ADS6122IRHBTG4
TLV70233DSER	ADS4249IRGC25	TPS71828-30DRVT	ADS6124IRHBRG4
ADS4245IRGCR	ADS42B49IRGCT	TPS71913-28DRVR	ADS6125IRHBTG4
TS3A44159RSVR	ADS58B18IRGZR	TPS71913-28DRVT	ADS6142IRHBTG4
ADS62P48IRGCT	ADS58B18IRGZT	TPS71918-12DRVT	ADS61JB46IRHAR
CDCLVP1212RHAR	ADS58B19IRGZR	TPS71918-28DRVR	ADS61JB46IRHAT
TPS61093DSKR	ADS58B19IRGZT	TPS71918-28DRVT	ADS62P19IRGCR

TPS40303DRCR	ADS58C28IRGC25	TPS71921-22DRVR	ADS62P19IRGCT
CDCLVP1216RGZR	ADS58C28IRGCR	TPS71921-22DRVT	ADS62P42IRGCTG4
ADS4222IRGCR	ADS6122IRHBR	TPS71926-15DRVR	CD3238RGJRG4
ADS42B49IRGCR	ADS6123IRHBR	TPS71926-15DRVT	CDCE72010RGCRG4
TPS71733DSER	ADS6123IRHBT	TPS71928-28DRVR	CDCE72010RGCTG4
TPS73401DRVR	ADS6125IRHBR	TPS71928-28DRVT	CDCM61001RHBR/2801
ADS62P49IRGCT	ADS6142IRHBR	TPS719285-285DRVR	CDCM61004RHBR/2801
TPS72730DSER	ADS6143IRHBR	TPS719285-285DRVT	HPA01119DSER
TCA6424RGJR	ADS6143IRHBT	TPS71933-28DRVR	PTS3L500AERHUR
TPS78228DRVR	ADS6144IRHBR	TPS71933-28DRVT	TLV70031DSET
CDCM61001RHBR	ADS6144IRHBT	TPS71933-33DRVR	TLV70237DSER
THS9000DRWR	ADS6145IRHBR	TPS71933-33DRVT	TLV70237DSET
CDCLVP2102RGTR	ADS6145IRHBT	TPS71936-315DRVR	TPD6E001RSFRG4
TPS71727DSER	ADS61JB23IRHAR	TPS71936-315DRVT	TPS3808G25ADRVR
TPD8E003DQDR	ADS61JB23IRHAT	TPS72009DRVR	TPS3808G25ADRVT
INA216A4RSWR	ADS62C15IRGCR	TPS72009DRVT	TPS51220RRHBR
TPS780300250DRVR	ADS62C15IRGCT	TPS720105DRVT	TPS71709DSETG4
ADS4249IRGCT	ADS62C17IRGCR	TPS72010DRVT	TPS71710DRVRG4
CDCM61004RHBT	ADS62C17IRGCT	TPS720115DRVR	TPS71718DSERG4
TPS40305DRCR	ADS62P15IRGC25	TPS720115DRVT	TPS71728DSERG4
TPS71728DSER	ADS62P15IRGCR	TPS72015DRVT	TPS71728DSETG4
TPS73433DRVR	ADS62P15IRGCT	TPS72018DRVR	TPS71733DRVTG4
CDCLVP2108RGZR	ADS62P22IRGCR	TPS72018DRVT	TPS71828-30DRVTG4
CDCM9102RHBT	ADS62P22IRGCT	TPS72710DSER	TPS71913-28DRVTG4
TPD8F003DQDR	ADS62P23IRGCR	TPS72710DSET	TPS71918-12DRVTG4
ADS62PF49IRGCR	ADS62P23IRGCT	TPS72715DSER	TPS71926-15DRVTG4
CDCM61002RHBT	ADS62P24IRGCR	TPS72715DSET	TPS71928-28DRVTG4
ADS6125IRHBT	ADS62P24IRGCT	TPS72725DSET	TPS71933-28DRVRG4
CDCLVP1208RHDT	ADS62P25IRGCR	TPS72727DSER	TPS71933-28DRVTG4
ADS4129IRGZT	ADS62P25IRGCT	TPS72727DSET	TPS71933-33DRVTG4
TPS71710DRVR	ADS62P28IRGCR	TPS727285DSET	TPS72719DSET
TLV70031DSER	ADS62P28IRGCT	TPS72730DSET	TPS78001DRVTG4
TPS40304ADRCT	ADS62P29IRGCR	TPS72733DSER	TPS780330220DRVRG4
TPS71733DRVT	ADS62P29IRGCT	TPS72733DSET	TPS780330220DRVTG4
ADS4246IRGCT	ADS62P42IRGCR	TPS73401DRVT	TPS78101DRVTG4
TPS40305DRCT	ADS62P42IRGCT	TPS73418DRVR	TPS78225DRVTG4
TPS71825-12DRVR	ADS62P44IRGCR	TPS73418DRVT	TPS78227DRVTG4
ADS6122IRHBT	ADS62P44IRGCT	TPS73433DRVT	TPS78228DRVRG4
ADS6124IRHBT	ADS62P49IRGC25	TPS73501DRVR	TRF3761-CIRHATG4
TPS71750DSER	ADS62P49IRGCR	TPS73501DRVT	TS3A44159RGTRG4
TPS71750DSET	ADS62PF49IRGCT	TPS73525DRVR	TS3A44159RSVRG4
TPS40303DRCT	CDCE18005RGZR	TPS73525DRVT	TS3L500RHURG4
ADS62P43IRGCT	CDCE18005RGZT	TPS735285DRVR	TUSB1105RGTRG4
TLV71210DSET	CDCLVP1212RHAT	TPS735285DRVT	TUSB1105RTZRG4
ADS6142IRHBT	CDCLVP1216RGZT	TPS78001DRVT	TUSB1106RTZRG4
TRF371125IRGZR	CDCLVP2102RGTT	TPS780180300DRVR	

<b>Product Affected: Group 2 – Devices that will have wire diameter change</b>			
TPS62260DRVR	DAC3174IRGC25	TPS71433DRVT	HPA00822DRVR
TPS62560DRVR	DAC3174IRGCR	TPS715A01DRVR	TPS61165DRVR-S
TPS62590DRVR	DAC3174IRGCT	TPS715A01DRVT	TPS62240DRVRG4
TPS62290DRVR	REG71050DRVT	TPS79912DRVT	TPS62240DRVTG4
TPS62080ADSGR	TPD4S014DSQR	TPS79927DRVR	TPS62242DRVRG4
TPS62240DRVR	TPS3808G15DRVR	TPS79927DRVT	TPS62242DRVTG4
TPS62562DRVR	TPS3808G15DRVT	TPS799285DRVR	TPS62243DRVTG4
TPS61240DRVR	TPS3808G18DRVR	TPS799285DRVT	TPS62260DRVTG4
TPS62262DRVR	TPS3808G18DRVT	TPS79928DRVR	TPS62261DRVRG4
TPS62293DRVR	TPS3808G33DRVR	TPS79928DRVT	TPS62261DRVTG4
TS3L500RHUR	TPS3808G33DRVT	TPS79933DRVT	TPS62262DRVTG4
TS2PCIE412RUAR	TPS3818G25DRVR	ADS62C15IRGCTG4	TPS62290DRVRG4
TPS62243DRVR	TPS3818G25DRVT	DAC3151IRGCR	TPS62290DRVTG4
TPS79933DRVR	TPS62080ADSGT	DAC3151IRGCT	TPS62291DRVRG4
TPS62291DRVR	TPS62243DRVT	DAC3154IRGCR	TPS62291DRVTG4
TPS79912DRVR	TPS62250DRVR	DAC3154IRGCT	TPS62293DRVRG4
TPS62290DRVT	TPS62250DRVT	DAC3161IRGCR	TPS62560DRVRG4
TPS62242DRVR	TPS62260ADRVR	DAC3161IRGCT	TPS62560DRVTG4
TPS62261DRVR	TPS62260ADRVT	DAC3164IRGC25	TPS79912DRVTG4
TPS62291DRVT	TPS62261DRVT	DAC3164IRGCR	TPS79927DRVTG4
TPS62260DRVT	TPS62262DRVT	DAC3164IRGCT	TPS79928DRVRG4
TPS62590DRVT	TPS62263DRVR	DAC3171IRGC25	TPS79928DRVTG4
TPS62240DRVT	TPS62263DRVT	DAC3171IRGCR	TPS79933DRVRG4
TPS62242DRVT	TPS62293DRVT	DAC3171IRGCT	TPS79933DRVTG4
TPS61240DRVT	TPS62562DRVT	DAC3179IRGCR	TS3USB221DRCRG4
TPS62560DRVT	TPS71401DRVR	DAC3179IRGCT	
AFE7071IRGZR	TPS71401DRVT	HPA00560DRVR	
AFE7071IRGZT	TPS71433DRVR	HPA00695DRVR	

### Qualification Report

**UTAC (NSE): QFN, conversion to Cu-wire bond on AI-Pad devices**

**Approved 05/29/2014**

#### Product Attributes

Attributes	Qual Device: DAC5682ZIRGCR	Qual Device: REG71050DRVR	Qual Device: TPS3808G25DRVR	Qual Device: TPS62560DRVR	Qual Device: TS3L500RHUR
<b>Assembly Site</b>	UTAC (NSE)	UTAC (NSE)	UTAC (NSE)	UTAC (NSE)	UTAC (NSE)
<b>Package Family</b>	VQFN	WSON	WSON	WSON	WQFN
<b>Flammability Rating</b>	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
<b>Wafer Fab Supplier</b>	RFAB	TSMC-WF2	FR-BIP-1	UMC-F8AB	FR-BIP-1
<b>Wafer Fab Process</b>	1833C05X5	0.60UM-TSMC	3370A12X3	LBC7X3	ASLC10

- QBS: Qual By Similarity

- Qual Device DAC5682ZIRGCR is qualified at LEVEL3-260C

- Qual Device REG71050DRVR is qualified at LEVEL2-260C

- Qual Devices qualified at LEVEL1-260C: TPS3808G25DRVR, TPS62560DRVR, TS3L500RHUR

## Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: DAC5682ZIRGCR	Qual Device: REG71050DRVR	Qual Device: TPS3808G25DRVR	Qual Device: TPS62560DRVR	Qual Device: TS3L500RHUR
PC	PreCon Level 1	Level 1-260C	-	-	-	3/693/0	3/246/0
PC	PreCon Level 3	Level 3-260C	3/495/0	-	-	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	3/215/0
AC	Autoclave 121C	96 Hours	3/256/0	-	-	3/231/0	-
UHAST	Unbiased HAST 130C/85%RH	96 Hours	3/256/0	-	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	3/247/0	-	-	3/231/0	-
HTSL	High Temp Storage Bake 175C	350 Hours	-	-	-	3/231/0	-
HTOL	Life Test, 125C	1000 Hours	-	-	-	-	1/76/0
ED	Electrical Characterization	Per Datasheet Parameters	-	Pass	-	Pass	Pass
MQ	Manufacturability (Assembly)	with Crater Check	Pass	-	-	-	-
MQ	Manufacturability (Assembly)	with crater- check	-	Pass	Pass	Pass	Pass
MSL	Thermal Path Integrity	Level 1-260C	-	-	1/12/0	3/36/0	-
MSL	Thermal Path Integrity	Level 3-260C	3/36/0	-	-	-	-

- 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

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

TI Qualification ID: 20130114-76041

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	<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>