

<b>PCN Number:</b>	20120725000B			<b>PCN Date:</b>	03/04/2014												
<b>Title:</b>	Add Cu as Alternative Wire Base Metal for Selected Device(s) on SOT23 (DBV) packages																
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Phone:</b>	+1(214)480-6037	<b>Dept:</b>	Quality Services												
<b>Change Type:</b>																	
<input type="checkbox"/>	Assembly Site	<input checked="" type="checkbox"/>	Assembly Process	<input checked="" type="checkbox"/>	Assembly Materials												
<input type="checkbox"/>	Design	<input type="checkbox"/>	Electrical Specification	<input type="checkbox"/>	Mechanical Specification												
<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process												
<input type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>	Wafer Bump Material	<input type="checkbox"/>	Wafer Bump Process												
<input type="checkbox"/>	Wafer Fab Site	<input type="checkbox"/>	Wafer Fab Materials	<input type="checkbox"/>	Wafer Fab Process												
<b>PCN Details</b>																	
<b>Description of Change:</b>																	
<p>This PCN is canceled. All affected devices will continue using Au wire, R-13 mold compound and NiPdAu lead finish.</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 Material differences are shown in the following table:</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th></th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td><b>Wire</b></td> <td>1.0mil Au</td> <td>0.8mil Cu</td> </tr> <tr> <td><b>Mold Compound</b></td> <td>R-13</td> <td>R-17</td> </tr> <tr> <td><b>Leadframe Finish</b></td> <td>NiPdAu</td> <td>Matte Sn</td> </tr> </tbody> </table> <p>Upon expiration of this PCN, TI will combine lead free solutions in a single <b><u>standard part number</u></b>, for example; <b><u>HPA00444AIDBVR</u></b> - can ship with both Matte Sn and NiPdAu.</p>							From	To	<b>Wire</b>	1.0mil Au	0.8mil Cu	<b>Mold Compound</b>	R-13	R-17	<b>Leadframe Finish</b>	NiPdAu	Matte Sn
	From	To															
<b>Wire</b>	1.0mil Au	0.8mil Cu															
<b>Mold Compound</b>	R-13	R-17															
<b>Leadframe Finish</b>	NiPdAu	Matte Sn															
<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>					ECAT: G4 = NiPdAu ECAT: G3 = Matte Sn												
<b>Sample Product Shipping Label (not actual product label)</b>																	
Assembly Site																	
NFME	Assembly Site Origin (22L)	ASO:NFME	ECAT:G4														
NFME	Assembly Site Origin (22L)	ASO: NFME	ECAT:G3														
<b>Sample product shipping label to show code location only (not actual product label)</b>																	

TEXAS INSTRUMENTS

MADE IN: Malaysia  
2DC: 20:

MSL 2 /260C/1 YEAR SEAL DT  
MSL 1 /235C/UNLIM 03/29/04

OPT:  
ITEM:

LBL: 5A (L)T0:1750

G4



(1P) SN74LS07NSR  
(Q) 2000 (D) 0336  
(31T) LOT: 3959047MLA  
(4W) TKY (1T) 7523483SI2  
(P)  
(2P) REV: (V) 0033317  
(20L) CSO: SHE (21L) CCO:USA  
(22L) ASO: MLA (23L) ACO: MYS

ECAT:G4 = NiPdAu  
ECAT:G3 = Matte Sn

**Product Affected:**

HPA00444AIDBVR	INA194AIDBVT	TMP100NA/250	TMP300AIDBVT
HPA00444AIDBVT	INA195AIDBVR	TMP100NA/3K	TMP300BIDBVR
INA138NA/250	INA195AIDBVT	TMP101NA/250	TMP300BIDBVT
INA138NA/3K	INA196AIDBVR	TMP101NA/3K	TMP708AIDBV
INA139NA/250	INA196AIDBVT	TMP121AIDBVR	TMP708AIDBVR
INA139NA/3K	INA197AIDBVR	TMP121AIDBVT	TMP708AIDBVT
INA168NA/250	INA197AIDBVT	TMP122AIDBVR	TMP709AIDBV
INA168NA/3K	INA198AIDBVR	TMP122AIDBVT	TMP709AIDBVR
INA169NA/250	INA198AIDBVT	TMP123AIDBVR	TMP709AIDBVT
INA169NA/3K	SN0312100DBVR	TMP123AIDBVT	TMP709SNDBVR
INA193AIDBVR	SN1202051DBV	TMP125AIDBVR	TMP709SNDBVT
INA193AIDBVT	SN1202051DBVR	TMP125AIDBVT	
INA194AIDBVR	SN1202051DBVT	TMP300AIDBVR	

**Qualification Plan**

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 : INA138NA/3K (MSL 2-260C)**

**Package Construction Details**

<b>Qualification Schedule:</b>	<b>Start:</b> Jul 2012	<b>End:</b> Sept 2012
<b>Assembly Site:</b>	NFME	<b>Mold Compound:</b> R-17
<b># Pins-Designator, Family:</b>	5-DBV, SOT-23	<b>Mount Compound:</b> A-03
<b>Lead frame (Finish, Base):</b>	Matte Sn, Cu	<b>Bond Wire:</b> 0.8 Mil Dia., Cu

**Qualification:**  **Plan**  **Test Results**

Reliability Test	Conditions	Sample Size/Fail
** High Temp Operating Life	125C (168, 500, 1000 Hrs)	77/0
Electrical Characterization	-	30/0
**High Temp. Storage Bake	150C (500, 1000 Hrs)	77/0
**Biased HAST	130C/85%RH (96 Hrs)	77/0
**Unbiased HAST	130C/85%RH/33.3 psia (96 Hrs)	77/0
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0
Ball Bond Shear	76 balls, 5 units	76/0
Die Shear	-	10/0
Manufacturability (Assembly)	(per mfg. Site specification)	1/0
X-ray	(top side only)	5/0
Moisture Sensitivity	(level 2 @ 260C peak +5/-0C)	12/0

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

<b>Qual Vehicle 2 : INA193AIDBV (MSL 2-260C)</b>				
<b>Package Construction Details</b>				
<b>Qualification Schedule:</b>	<b>Start:</b>	Jul 2012	<b>End:</b>	Sept 2012
<b>Assembly Site:</b>	NFME		<b>Mold Compound:</b>	R-17
<b># Pins-Designator, Family:</b>	5-DBV, SOT-23		<b>Mount Compound:</b>	A-03
<b>Lead frame (Finish, Base):</b>	Matte Sn, Cu		<b>Bond Wire:</b>	0.8 Mil Dia., Cu
<b>Qualification:</b> <input checked="" type="checkbox"/> <b>Plan</b> <input type="checkbox"/> <b>Test Results</b>				
<b>Reliability Test</b>	<b>Conditions</b>			<b>Sample Size/Fail</b>
Electrical Characterization	-			30/0
**High Temp. Storage Bake	150C (500, 1000 Hrs)			77/0
**Biased HAST	130C/85%RH (96 Hrs)			77/0
**Unbiased HAST	130C/85%RH/33.3 psia (96 Hrs)			77/0
**T/C -65C/150C	-65C/+150C (500 Cyc)			77/0
Ball Bond Shear	76 balls, 5 units			76/0
Bond Strength	76 balls, 5 units			76/0
Die Shear	-			10/0
Manufacturability (Assembly)	(per mfg. Site specification)			1/0
X-ray	(top side only)			5/0
Moisture Sensitivity	(level 2 @ 260C peak +5/-0C)			12/0
Notes    **- Preconditioning sequence: Level 2-260C.				
<b>Qual Vehicle 3 : TMP121AIDBVR (MSL 1-260C)</b>				
<b>Package Construction Details</b>				
<b>Qualification Schedule:</b>	<b>Start:</b>	Jul 2012	<b>End:</b>	Sept 2012
<b>Assembly Site:</b>	NFME		<b>Mold Compound:</b>	R-17
<b># Pins-Designator, Family:</b>	6-DBV, SOT-23		<b>Mount Compound:</b>	A-03
<b>Lead frame (Finish, Base):</b>	Matte Sn, Cu		<b>Bond Wire:</b>	0.8 Mil Dia., Cu
<b>Qualification:</b> <input checked="" type="checkbox"/> <b>Plan</b> <input type="checkbox"/> <b>Test Results</b>				
<b>Reliability Test</b>	<b>Conditions</b>			<b>Sample Size/Fail</b>
Electrical Characterization	-			30/0
**High Temp. Storage Bake	150C (500, 1000 Hrs)			77/0
**Biased HAST	130C/85%RH (96 Hrs)			77/0
**Unbiased HAST	130C/85%RH/33.3 psia (96 Hrs)			77/0
**T/C -65C/150C	-65C/+150C (500 Cyc)			77/0
Ball Bond Shear	76 balls, 5 units			76/0
Bond Strength	76 balls, 5 units			76/0
Die Shear	-			10/0
Manufacturability (Assembly)	(per mfg. Site specification)			1/0
X-ray	(top side only)			5/0
Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)			12/0
Notes    **- Preconditioning sequence: Level 1-260C.				

Qual Vehicle 4 : TMP709AIDBV (MSL 1-260C)			
Package Construction Details			
<b>Qualification Schedule:</b>	<b>Start:</b>	Jul 2012	<b>End:</b> Sept 2012
<b>Assembly Site:</b>	NFME	<b>Mold Compound:</b>	R-17
<b># Pins-Designator, Family:</b>	5-DBV, SOT-23	<b>Mount Compound:</b>	A-03
<b>Lead frame (Finish, Base):</b>	Matte Sn, Cu	<b>Bond Wire:</b>	0.8 Mil Dia., Cu
<b>Qualification:</b>	<input checked="" type="checkbox"/> <b>Plan</b> <input type="checkbox"/> <b>Test Results</b>		
Reliability Test	Conditions	Sample Size/Fail	
** High Temp Operating Life	125C (168, 500, 1000 Hrs)	77/0	
Electrical Characterization	-	30/0	
**High Temp. Storage Bake	150C (500, 1000 Hrs)	77/0	
**Biased HAST	130C/85%RH (96 Hrs)	77/0	
**Unbiased HAST	130C/85%RH/33.3 psia (96 Hrs)	77/0	
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	
Ball Bond Shear	76 balls, 5 units	76/0	
Bond Strength	76 balls, 5 units	76/0	
Die Shear	-	10/0	
Manufacturability (Assembly)	(per mfg. Site specification)	1/0	
X-ray	(top side only)	5/0	
Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	12/0	
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	<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>