PCN Number:	20130924000	PCN Date:	09/27/2013
Title:	Add Cu as Alternative Wire Base Metal for Selected Device(s) on T0-220 (KCS) and SOT-23 (DBV) packages		
Customer Contact:	PCN Manager	Phone: +1(214)480-6037	Dept: Quality Services
Proposed 1st Ship Date:	12/27/2013	Estimated Sample Availability:	Date provided at sample request

Change Type:

☐	Assembly Site	☒	Assembly Process	☒	Assembly Materials
☐	Design	☐	Electrical Specification	☐	Mechanical Specification
☐	Test Site	☐	Packing/Shipping/Labeling	☐	Test Process
☐	Wafer Bump Site	☐	Wafer Bump Material	☐	Wafer Bump Process
☐	Wafer Fab Site	☐	Wafer Fab Materials	☐	Wafer Fab Process
		☐	Part number change		

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 facility and Material Differences are as follows:

Group 1 Devices:

Material set	From	To
Wire	W-02	W-13

Group 2 Devices:

Material set	From	To
Mold Compound	R-13	R-17
Wire	W-04 (Au)	W-15 (Cu)
Lead Finish	NiPdAu	Matte Sn

Upon expiration of this PCN, TI will combine lead free solutions in a *single standard part number*, for example; *TPD2S017DBVR* – can ship with both Matte Sn and NiPdAu.

When available customers may specify NiPdAu finish by ordering the part with the G4 suffix, e.g. *TPD2S017DBVRG4*.

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.

Group 1 Device - Changes to product identification resulting from this PCN:

None

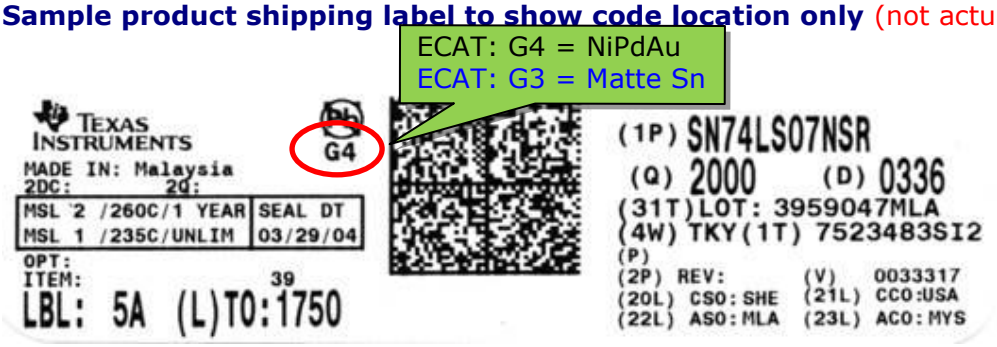
Group 2 Device - Changes to product identification resulting from this PCN:

Sample Product Shipping Label (not actual product label)

Assembly Site

NFME	Assembly Site Origin (22L)	ASO:NFME	ECAT:G4 (NiPdAu)
NFME	Assembly Site Origin (22L)	ASO: NFME	ECAT:G3 (Matte Sn)

Sample product shipping label to show code location only (not actual product label)



Product Affected: Group 1

LM237KCSE3	TL780-12KCS	UA7808CKCS	UA78M05IKCSE3
LM2940-50CKCSE3	TL780-12KCSE3	UA7808CKCSE3	UA78M08CKCS
LM2940-50IKCSE3	TL780-15KCS	UA7810CKCS	UA78M08CKCSE3
LM337KCSE3	TL780-15KCSE3	UA7810CKCSE3	UA78M12CKCS
TL-SCSI285KCSE3	TL783CKCSE3	UA7812CKCS	UA78M12CKCSE3
TL750L05CKCS	TLV1117CKCS	UA7812CKCSE3	UA78M33CKCS
TL750L05CKCSE3	TLV1117CKCSE3	UA7815CKCS	UA78M33CKCSE3
TL750M05CKCSE3	TLV1117IKCS	UA7815CKCSE3	UA7908CKCS
TL750M08CKCSE3	TLV1117IKCSE3	UA7824CKCS	UA7908CKCSE3
TL750M10CKCSE3	TLV2217-18KCS	UA7824CKCSE3	UA79M05CKCS
TL750M12CKCSE3	TLV2217-18KCSE3	UA78M05CKCS	UA79M05CKCSE3
TL780-05KCS	TLV2217-25KCSE3	UA78M05CKCSE3	
TL780-05KCSE3	TLV2217-33KCSE3	UA78M05IKCS	

Product Affected: Group 2

TPD2S017DBVR

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 : UA7808CKCS

Package Construction Details

Assembly Site:	NFME	Mold Compound:	R-12
# Pins-Designator, Family:	3-KCS, TO-220	Mount Compound:	A-05
Lead frame (Finish, Base):	Matte Sn, Cu	Bond Wire:	2.0 Mil Dia., Cu

Qualification: ☐ Plan ☒ Test Results		
Reliability Test	Conditions	Sample Size/Fail
Electrical Characterization	-	Pass
Life Test	150C(300 Hrs)	80/0
Thermal Shock	-65C/+150C (1000 Cyc)	76/0
Temperature Cycle	-65C/+150C (1000 Cyc)	77/0
Unbiased HAST	130C/85%RH (192 Hrs)	78/0
Biased HAST	130C/85%RH (192 Hrs)	77/0
High Temp Storage Bake	170C (600Hrs)	77/0
Manufacturability (Assembly)	(per mfg. Site specification)	Pass

Qual Vehicle 2 : UA78M05CKCS			
Package Construction Details			
Assembly Site:	NFME	Mold Compound:	R-12
# Pins-Designator, Family:	3-KCS, TO-220	Mount Compound:	A-05
Lead frame (Finish, Base):	Matte Sn, Cu	Bond Wire:	2.0 Mil Dia., Cu

Qualification: ☐ Plan ☒ Test Results			
Reliability Test	Conditions	Sample Size/Fail	
		Lot# 1	Lot# 2
Electrical Characterization	-	Pass	-
Life Test	150C (300 Hrs)	77/0	77/0
Thermal Shock	-65C/+150C (1000 Cyc)	77/0	77/0
Temperature Cycle	-65C/+150C (1000 Cyc)	77/0	77/0
Unbiased HAST	130C/85%RH (192 Hrs)	77/0	77/0
Biased HAST	130C/85%RH (192 Hrs)	77/0	77/0
High Temp Storage Bake	150C (2000Hrs)	77/0	77/0
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass

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 : TL432ACDBVR			
Package Construction Details			
Assembly Site:	NFME	Mold Compound:	R-17
# Pins-Designator, Family:	5-DBV, SOT-23	Mount Compound:	A-03
Lead frame (Finish, Base):	Matte Sn, Cu	Bond Wire:	1.0 Mil Dia., Cu

Qualification: ☐ Plan ☒ Test Results				
Reliability Test	Conditions	Sample Size/Fail		
		Lot# 1	Lot# 2	Lot# 3
Electrical Characterization	-	Pass	-	-
Life Test	150C(300 Hrs)	77/0	77/0	-
**Autoclave	121C (192 Hrs)	77/0	77/0	77/0
**Thermal Shock	-65C/+150C (500 Cyc)	77/0	77/0	-
**Temperature Cycle	-65C/+150C (1000 Cyc)	77/0	77/0	77/0
**Unbiased HAST	130C/85%RH (96 Hrs)	77/0	77/0	77/0
**Biased HAST	130C/85%RH (192 Hrs)	77/0	77/0	-
**High Temp Storage Bake	170C (600Hrs)	77/0	77/0	77/0
Flammability (UL 94V-0)	(UL 94V-0)	5/0	5/0	-
Flammability (UL-1694)	(UL-1694)	5/0	5/0	-

Flammability (IEC 695-2-2)	(IEC 695-2-2)	5/0	5/0	-
Solderability	Steam age, 8 hours; PB-Free solder	22/0	22/0	-
Salt Atmosphere	-	22/0	22/0	-
X-ray	(top side only)	5/0	5/0	5/0
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass
Moisture Sensitivity	L1-260C	12/0	12/0	12/0
Notes **- Preconditioning sequence: Level 1-260C.				

Qual Vehicle 2 : TS321IDBVR

Package Construction Details

Assembly Site:	NFME	Mold Compound:	R-17
# Pins-Designator, Family:	5-DBV, SOT-23	Mount Compound:	A-03
Lead frame (Finish, Base):	Matte Sn, Cu	Bond Wire:	1.0 Mil Dia., Cu

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

Reliability Test	Conditions	Sample Size/Fail		
		Lot# 1	Lot# 2	Lot# 3
Electrical Characterization	-	Pass	-	-
Life Test	150C(300 Hrs)	77/0	-	-
**Autoclave	121C (192 Hrs)	77/0	77/0	77/0
**Thermal Shock	-65C/+150C (500 Cyc)	77/0	-	-
**Temperature Cycle	-65C/+150C (1000 Cyc)	77/0	77/0	77/0
**Unbiased HAST	130C/85%RH (96 Hrs)	77/0	77/0	77/0
**Biased HAST	130C/85%RH (192 Hrs)	77/0	-	-
**High Temp Storage Bake	170C (600Hrs)	77/0	77/0	77/0
Flammability (UL 94V-0)	(UL 94V-0)	5/0	-	-
Flammability (UL-1694)	(UL-1694)	5/0	-	-
Flammability (IEC 695-2-2)	(IEC 695-2-2)	5/0	-	-
Solderability	Steam age, 8 hours; PB-Free solder	22/0	-	-
Salt Atmosphere	-	22/0	-	-
X-ray	(top side only)	5/0	5/0	5/0
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass
Moisture Sensitivity	L1-260C	12/0	12/0	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	PCNAmericasContact@list.ti.com
Europe	PCNEuropeContact@list.ti.com
Asia Pacific	PCNAsiaContact@list.ti.com
Japan	PCNJapanContact@list.ti.com