



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20121218001
**Qualification of Alternate Material Set for Assembly with Au Wire
and Cu as Additional Wire Base Metal Option for
Select SOIC and SSOP Package Devices
Change Notification / Sample Request**

Date: 12/21/2012
To: Newark PCN

Dear Customer:

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 SOIC packages referenced to this PCN have been covered in prior PCNs, primarily PCN 20110608000 and PCN 20120808000. Results gathered from the prior PCN sample evaluations may help reduce the need for additional sample evaluation on this PCN.

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

20121218001
Attachment: 1

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

DEVICE	CUSTOMER PART NUMBER
ADS7816UB	null
ADS7822UB	null
BQ2002DSN	null
BQ2002ESN	null
BQ2002FSN	null
BQ2002SN	null
BQ2002TSN	null
BQ2031SN-A5	null
BQ2054SN	null
BQ2057CSN	null
BQ2057WSN	null
BQ24400D	null
BQ2954SN	null
BUF602ID	null
CD74AC00M	null
CD74AC05M	null
CD74AC14M	null
CD74AC280M96G4	null
CD74AC74M	null
CD74ACT00M	null
CD74ACT05M	null
CD74ACT05M96	null
CD74ACT14M96	null
CD74ACT164M	null
CD74ACT258M96	null
DRV103U	null
DRV103U/2K5	null
INA155UA	null
LMV324ID	null
LMV339ID	null
LMV358IDR	null
LMV722IDR	null
OPA2330AID	null
OPA2333AID	null
OPA2338UA	null
OPA2347UA	null
OPA2353UA	null
OPA2356AID	null
OPA2364ID	null
OPA2365AID	null
OPA2379AID	null
OPA2735AID	null
OPA301AID	null
OPA330AID	null
OPA333AID	null
OPA335AID	null
OPA336UA	null
OPA347UA	null
OPA348AID	null
OPA350UA/2K5	null
OPA355UA	null

OPA365AID	null
OPA379AID	null
OPA380AID	null
OPA4330AID	null
OPA4343UA	null
OPA4347UA	null
OPA4348AID	null
OPA4353UA	null
OPA4743UA	null
OPA735AID	null
OPA861ID	null
PCA9543AD	null
PCA9546AD	null
PCA9546ADR	null
REG102UA-3.3	null
REG102UA-A	null
REG103UA-A	null
SN64BCT126ADR	null
SN65HVD1050D	null
SN65HVD1780DR	null
SN65HVD1781D	null
SN65HVD1785D	null
SN65HVD1791D	null
SN65HVD1792D	null
SN65HVD1793D	null
SN65HVD252D	null
SN65HVD253D	null
SN65HVD255D	null
SN65HVD96D	null
SN65LBC180D	null
SN65LVDS1D	null
SN65LVDS2D	null
SN65LVDS31D	null
SN65LVDS31DG4	null
SN65LVDS32BDR	null
SN65LVDS32D	null
SN65LVDS33D	null
SN65MLVD200AD	null
SN65MLVD200D	null
SN65MLVD201D	null
SN65MLVD202AD	null
SN65MLVD203D	null
SN65MLVD204AD	null
SN65MLVD205AD	null
SN74ABT125D	null
SN74AC04D	null
SN74AC08D	null
SN74AC08DR	null
SN74AC14D	null
SN74AC32D	null
SN74AC74DR	null
SN74AC86D	null
SN74ACT00D	null
SN74ACT04D	null
SN74ACT14D	null
SN74ACT74D	null
SN74AHC04D	null
SN74AHC125D	null
SN74AHC74D	null
SN74AHC74DR	null
SN74ALVC04D	null
SN74AVC4T245DR	null

SN74CBT3257CDR	null
SN74CBT3257D	null
SN74CBTD3306CD	null
SN74LV07AD	null
SN74LV08AD	null
SN74LV123ADR	null
SN74LV125AD	null
SN74LV138AD	null
SN74LVC06AD	null
SN74LVC125AD	null
SN74LVC138AD	null
SN74LVC139AD	null
SN74LVC32AD	null
SN74LVC74AD	null
SN75LBC180D	null
TL971ID	null
TL971IDR	null
TL972ID	null
TL972IDR	null
TL974IDR	null
TLC271ACD	null
TLC271BCDR	null
TLC271CD	null
TLC271CDR	null
TLC271ID	null
TLC272ACD	null
TLC272ACDR	null
TLC272CD	null
TLC272CDR	null
TLC272ID	null
TLC274ACD	null
TLC274BIDR	null
TLC274CD	null
TLC274CDR	null
TLC274ID	null
TLC27L4ACD	null
TLC27L4BCD	null
TLC27L4ID	null
TLC27M2CD	null
TLC339IDR	null
TLC352ID	null
TLC352IDRG4	null
TLC3702ID	null
TLC374CD	null
TLC393CDR	null
TLC548CD	null
TLC549CD	null
TLC549ID	null
TLC555CDR	null
TLV2332ID	null
TLV2762IDR	null
TLV342ID	null
TLV342IDR	null
TLV3492AID	null
TLV3501AID	null
TLV3502AID	null
TLV5638CD	null
TLV5638ID	null
TMP175AIDR	null
TMP275AID	null
TPA6111A2DR	null
TPS2350D	null

TPS2412DG4	null
TPS2814D	null
TPS5420DRG4	null
TPS92020D	null
TXS0104ED	null
UCC25705D	null
UCC25706D	null
UCC2804D	null
UCC2805D	null
UCC28060D	null
UCC2807D-1	null
UCC2808D-1	null
UCC2813D-3	null
UCC2813D-4	null
UCC2813D-5	null
UCC28C43DG4	null
UCC28C43DR	null
UCC28C44D	null
UCC28C45D	null
UCC2946D	null
UCC35701DG4	null
UCC35705D	null
UCC35706D	null
UCC3581D	null
UCC3802D	null
UCC3804D	null
UCC3807D-2	null
UCC3808D-1	null
UCC3818D	null
UCC3889D	null
UCC38C40D	null
UCC38C44D	null
VCA820ID	null
VCA824ID	null

Technical details of this Product Change follow on the next page(s).

PCN Number:	20121218001	PCN Date:	12/21/2012
Title:	Qualification of Alternate Material Set for Assembly with Au Wire and Cu as Additional Wire Base Metal Option for Select SOIC and SSOP Package Devices		
Customer Contact:	PCN_ww_admin_team@list.ti.com	Phone:	+1(214)480-6037
Dept:	Quality Services		
Proposed 1st Ship Date:	03/21/2013		
Change Type:			
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process
		<input checked="" type="checkbox"/>	Assembly Materials
PCN Details			
Description of Change:			
Qualification of an alternate material set for assembly with Au wire and add Cu as an additional wire base metal option for select devices in the SOIC and SSOP package. See table below:			
Material set	Current Assembly Au wire	Alternate Assembly Au wire	Cu Bond wire opti
Leadframe thickness (mils)	8	6	6
Mold compound	4205694	4211880	4211880
Wire dia. (Mils)	0.8, 0.96, 1.15, 1.3, 1.98	0.8, 0.96, 1.15, 1.3, 1.98	0.8, 0.96, 1.3, 1.98
Qualification references are provided for further test data validation (See Qualification References Section).			
The devices in the Product Affected Group list are being qualified by similarity. These package Qualifications and devices in these families have been covered in prior PCN's, primarily PCN 20110608000 and PCN 20120808000. The purpose of this PCN is to convert additional devices in the same package families to Cu wire.			
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:				
Please see page two of this document for your list of PCN affected devices.				
Qualification Data: Approved 09/19/2012				
This qualification has been specifically developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.				
Qual Vehicle 1 : MAX232DR (MSL 1-260C)				
Package Construction Details				
Assembly Site:	TIM	Mold Compound:	4211880	
# Pins-Designator, Family:	16-D, SOIC	Mount Compound:	40402500	
Leadframe (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu	
Qualification: <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	-	-
**High Temp. Storage Bake	170C (420hrs)	77/0	77/0	77/0
**Biased HAST	130C/85%RH (96 Hrs)	77/0	77/0	77/0
**Autoclave 121C	121C, 2 atm (96 Hrs)	77/0	77/0	77/0
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
Life Test	150C (300 Hrs)	77/0	77/0	77/0
Lead Pull	--	22/0	22/0	22/0
Bond Strength	76 ball bonds, min. 3 units	76/0	76/0	76/0
Flammability	(IEC 695-2-2)	5/0	5/0	5/0
Flammability	(UL-1694)	5/0	5/0	5/0
Flammability	(UL 94V-0)	5/0	5/0	5/0
Manufacturability	(per mfg. Site specification)	Pass	Pass	Pass
Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	12/0	12/0	12/0
Notes ** - Preconditioning sequence: Level 1-260C.				
Qual Vehicle 2 : RC4558DR (MSL 1-260C)				
Package Construction Details				
Assembly Site:	TIM	Mold Compound:	4211880	
# Pins-Designator, Family:	8-D, SOIC	Mount Compound:	40402500	
Leadframe (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu	

Qualification: <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	-	-
**High Temp. Storage Bake	150C (1000hrs)	77/0	77/0	77/0
**Biased HAST	130C/85%RH (96 Hrs)	77/0	-	-
**Autoclave 121C	121C, 2 atm (96 Hrs)	77/0	-	-
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
Life Test	150C (300 Hrs)	77/0	-	-
Lead Pull	--	22/0	-	-
Bond Strength	76 ball bonds, min. 3 units	76/0	-	-
Flammability	(IEC 695-2-2)	5/0	-	-
Flammability	(UL-1694)	5/0	-	-
Flammability	(UL 94V-0)	5/0	-	-
Manufacturability	(per mfg. Site specification)	Pass	-	-
X-ray	(top side only)	5/0	-	-
Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	12/0	12/0	12/0
Notes **- Preconditioning sequence: Level 1-260C.				
Qual Vehicle 3 : SN74LV14ADR (MSL 1-260C)				
Package Construction Details				
Assembly Site:	TIM	Mold Compound:	4211880	
# Pins-Designator, Family:	14-D, SOIC	Mount Compound:	40402500	
Leadframe (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu	
Qualification: <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	-	-
**High Temp. Storage Bake	150C (1000hrs)	77/0	77/0	77/0
**Biased HAST	130C/85%RH (96 Hrs)	77/0	-	-
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
Life Test	150C (300 Hrs)	77/0	-	-
Lead Pull	--	22/0	-	-
Bond Strength	76 ball bonds, min. 3 units	76/0	-	-
Flammability	(IEC 695-2-2)	5/0	-	-
Flammability	(UL-1694)	5/0	-	-
Flammability	(UL 94V-0)	5/0	-	-
Manufacturability	(per mfg. Site specification)	Pass	-	-
X-ray	(top side only)	5/0	-	-
Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	12/0	12/0	12/0
Notes **- Preconditioning sequence: Level 1-260C.				

Qual Vehicle 4 : ULN2003ADR (MSL 1-260C)				
Package Construction Details				
Assembly Site:	TIM	Mold Compound:	4211880	
# Pins-Designator, Family:	16-D, SOIC	Mount Compound:	40402500	
Leadframe (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu	
Qualification: <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	-	-
**High Temp. Storage Bake	170C 420hrs)	77/0	77/0	77/0
**Biased HAST	130C/85%RH (96 Hrs)	77/0	-	-
**Autoclave 121C	121C, 2 atm (96 Hrs)	77/0	-	-
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
Life Test	150C (300 Hrs)	77/0	-	-
Lead Pull	--	22/0	-	-
Bond Strength	76 ball bonds, min. 3 units	76/0	-	-
Flammability	(IEC 695-2-2)	5/0	-	-
Flammability	(UL-1694)	5/0	-	-
Flammability	(UL 94V-0)	5/0	-	-
Manufacturability	(per mfg. Site specification)	Pass	-	-
X-ray	(top side only)	5/0	-	-
Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	12/0	12/0	12/0
Notes ** - Preconditioning sequence: Level 1-260C.				
Qual Vehicle 5 : CD4053BM96 (MSL 1-260C)				
Package Construction Details				
Assembly Site:	TI Mexico	Mold Compound:	4211880	
# Pins-Designator, Family:	16-D, SOIC	Mount Compound:	4147858	
Leadframe (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu	
Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results				
Reliability Test	Conditions	Sample Size/Fail		
		Lot#1	Lot#2	Lot#3
**Steady-state Life Test	150C (300 Hrs)	77/0		
Electrical Characterization	-	Pass		
**High Temp. Storage Bake	170C (600 Hrs)	77/0		
**Biased HAST	130C/85%RH (192 Hrs)	77/0		
**Autoclave 121C	121C, 2 atm (96 Hrs)	77/0		
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0		
Visual / Mechanical	-	Pass		
Lead Pull	# of leads to destruction, min. 3 units	22/0		
Bond Strength	76 ball bonds, min. 3 units	76/0		
Manufacturability	(per mfg. Site specification)	Pass		
**Thermal Shock	-65C/+150C (500 Cyc)	77/0		
X-ray	(Top-side only)	5/0		
Moisture Sensitivity	(level 1 @ 260C peak +0/-5C)	12/0		
Notes ** - Preconditioning sequence: Level 1-260C.				

Qual Vehicle 6 : LM358DR (MSL 1-260C)				
Package Construction Details				
Assembly Site:	TI Mexico	Mold Compound:	4211880	
# Pins-Designator, Family:	8-D, SOIC	Mount Compound:	4147858	
Leadframe (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu	
Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results				
Reliability Test	Conditions	Sample Size/Fail		
		Lot#1	Lot#2	Lot#3
Steady-state Life Test	150C (168, 300 hrs)	77/0	-	-
Electrical Characterization	-	Pass	-	-
**High Temp. Storage Bake	170C (420hrs)	77/0	-	-
**Biased HAST	130C/85%RH (192 Hrs)	77/0	-	-
**Autoclave 121C	121C, 2 atm (96 Hrs)	77/0	-	-
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
Visual / Mechanical	-	Pass	-	-
Lead Pull	--	22/0	-	-
Bond Strength	76 ball bonds, min. 3 units	76/0	-	-
Manufacturability	(per mfg. Site specification)	Pass	-	-
**Thermal Shock	-65C/+150C (500 Cyc)	77/0	77/0	77/0
X-ray	(top side only)	5/0	-	-
Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	12/0	12/0	12/0
Notes ** - Preconditioning sequence: Level 1-260C.				
Qual Vehicle 7 : TL494IDR (MSL 1-260C)				
Package Construction Details				
Assembly Site:	TI Mexico	Mold Compound:	4211880	
# Pins-Designator, Family:	16-D, SOIC	Mount Compound:	4147858	
Leadframe (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu	
Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results				
Reliability Test	Conditions	Sample Size/Fail		
		Lot#1	Lot#2	Lot#3
Steady-state Life Test	150C (168, 300 hrs)	77/0	77/0	77/0
Electrical Characterization	-	Pass	-	-
**High Temp. Storage Bake	170C (600hrs)	77/0	77/0	77/0
**Biased HAST	130C/85%RH (192 Hrs)	77/0	77/0	77/0
**Autoclave 121C	121C, 2 atm (96 Hrs)	77/0	77/0	77/0
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
Visual / Mechanical	-	Pass	Pass	Pass
Lead Pull	--	22/0	22/0	22/0
Flammability	Method A - UL94-0	5/0	5/0	5/0
Flammability	Method B - IEC 695-2-2	5/0	5/0	5/0
Flammability	Method C - UL 1694	5/0	5/0	5/0
Bond Strength	76 ball bonds, min. 3 units	76/0	76/0	76/0
Manufacturability	(per mfg. Site specification)	Pass	Pass	Pass
**Thermal Shock	-65C/+150C (500 Cyc)	77/0	77/0	77/0
X-ray	(top side only)	5/0	5/0	5/0
Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	12/0	12/0	12/0
Notes ** - Preconditioning sequence: Level 1-260C.				

Qual Vehicle 8 : ULN2003ADR (MSL 1-260C)				
Package Construction Details				
Assembly Site:	TI Mexico	Mold Compound:	4211880	
# Pins-Designator, Family:	16-D, SOIC	Mount Compound:	4147858	
Leadframe (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu	
Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results				
Reliability Test	Conditions	Sample Size/Fail		
		Lot#1	Lot#2	Lot#3
**Steady-state Life Test	150C (300 Hrs)	77/0	-	-
Electrical Characterization	-	Pass	-	-
**High Temp. Storage Bake	170C (600 Hrs)	77/0	77/0	77/0
**Biased HAST	130C/85%RH (192 Hrs)	77/0	-	-
**Autoclave 121C	121C, 2 atm (96 Hrs)	77/0	77/0	77/0
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
Visual / Mechanical	-	Pass	-	-
Lead Pull	--	22/0	22/0	22/0
Bond Strength	76 ball bonds, min. 3 units	76/0	-	-
Manufacturability	(per mfg. Site specification)	Pass	-	-
**Thermal Shock	-65C/+150C (500 Cyc)	77/0	77/0	77/0
X-ray	(Top-side only)	5/0	5/0	5/0
Moisture Sensitivity	(level 1 @ 260C peak +0/-5C)	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