TEXAS INSTRUMENTS 12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20120418001D
Transfer of select devices in the LBC4 process node to CFAB Facility
Change Notification / Sample Request

Date: January 13, 2017
To: TOKYO ELECTRON DEVICE (DSTR) PCN

Dear Customer:

The purpose of PCN Revision D is to announce the retraction of select devices.

In January, 2012, TI announced plans to close two older 6-inch manufacturing facilities in Hiji, Japan and Houston, Texas. Notification for transfer of devices will be distributed in phases, by technology, over the coming weeks. This product change announcement is to support transfer of products in the LBC4 process node from these wafer fabs to alternate sites. 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 to ensure you can complete your evaluation and product transfer to the new site can be completed prior to the fab closure.

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

20120418001D
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
TPS54612PWP	null
TPS54613PWP	null
TPS54616PWP	null
TPS54616PWPR	null
TPS54810PWPR	null

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

PCN Number:	PCN20120418001**D**	**PCN Date:**	Jan 13, 2017
Title:	Transfer of select devices in the LBC4 process node to CFAB Facility		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	April 2013	**Estimated Sample Availability:**	Samples support is currently being coordinated.

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

PCN Details

Description of Change:

The purpose of **PCN Revision D** is to announce the **retraction** of select devices. Retracted devices are identified with a **~~strikethrough~~** and are highlighted in yellow in the Product Affected Section. These devices will remain at the current Fab Site.

This change notification is to announce the transfer of select devices in the LBC4 process node from HFAB and HIJI to the CFAB (Chengdu, China) facility. These devices are listed in "Product Affected" section.

Current	**New**
Sites, Process, Wafer Diameter	**Site, Process, Wafer Diameter**
HFAB/HIJI/HU-BUMP, LBC4, 150mm	**CFAB/Clark-Bump/DBUMP, LBC4, 200mm**

Device Groups in Product Affected Section
Group 1: Devices with Fab Transfer and Bump site change to Clark-Bump/DBUMP
Group 2: Devices with Fab Transfer Only

*Proposed 1st Ship Date is based on current Qual Schedule.

Bump sites were previously qualified. Reference quals are provided in the Qual Data Section.

Reason for Change:

Continuity of Supply. HIJI/HFAB site shutdown.

Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):

None

Changes to product identification resulting from this PCN:

Current

Chip Site	Chip site code (20L)	Chip country code (21L)
HU-BIP-4	HOU	USA
HIJI	HIJ	JPN

New

Chip Site	**Chip site code (20L)**	**Chip country code (21L)**
CFAB	**CU3**	**CHN**

Sample product shipping label (not actual product label)

Product Affected:

Group 1: Devices with Fab Transfer and Bump site change			
HPA00182DDAR	TLC5947RHBR	TPS2062ADG4	~~TPS54610PWP~~
HPA00295DDAR	TLC5947RHBRG4	TPS2062ADR	~~TPS54610PWPG4~~
HPA00393DDAR	TLC5947RHBT	TPS2062ADRBR	~~TPS54610PWPR~~
HPA00534DBQR	TLC5947RHBTG4	TPS2062ADRBRG4	~~TPS54610PWPRG4~~
HPA00596BDR	TLC5951DAP	TPS2062ADRBT	~~TPS54611PWP~~
HPA00638DAPR	TLC5951DAPR	TPS2062ADRBTG4	~~TPS54611PWPG4~~
HPA00796PWPR	TLC5951RHAR	TPS2062ADRG4	~~TPS54611PWPR~~
HPA01116RHBR	TLC5951RHAT	TPS2062D	~~TPS54611PWPRG4~~
SN0809080DAPR	TLC5952DAP	TPS2062DG4	~~TPS54612PWP~~
SN1002018DAPR	TLC5952DAPR	TPS2062DGN	~~TPS54612PWPG4~~
SN105116PWP	TLC5970RHPR	TPS2062DGNG4	~~TPS54612PWPR~~
SN105116PWPG4	TLC5970RHPT	TPS2062DGNR	~~TPS54612PWPRG4~~
SN105116PWPR	TLC59711PWP	TPS2062DGNRG4	~~TPS54613PWP~~
SN105116PWPRG4	TLC59711PWPR	TPS2062DR	~~TPS54613PWPG4~~
SN1107015PWPR	TLC5971PWP	TPS2062DRG4	~~TPS54613PWPR~~
TLC59281DBQ	TLC5971PWPR	TPS2064DGN	~~TPS54613PWPRG4~~
TLC59281DBQR	TLC5971RGER	TPS2064DGNG4	~~TPS54614PWP~~
TLC59281RGER	TLC5971RGET	TPS2064DGNR	~~TPS54614PWPG4~~
TLC59281RGET	TPS2042BD	TPS2064DGNRG4	~~TPS54614PWPR~~
TLC59282DBQ	TPS2042BDG4	TPS2064DRBR	~~TPS54614PWPRG4~~
TLC59282DBQR	TPS2042BDGN	TPS2064DRBT	~~TPS54615PWP~~
TLC59282RGER	TPS2042BDGNG4	TPS2066AD	~~TPS54615PWPG4~~
TLC59282RGET	TPS2042BDGNR	TPS2066ADG4	~~TPS54615PWPR~~
TLC5928DBQ	TPS2042BDGNRG4	TPS2066ADR	~~TPS54615PWPRG4~~
TLC5928DBQG4	TPS2042BDR	TPS2066ADRBR	~~TPS54616PWP~~
TLC5928DBQR	TPS2042BDRBR	TPS2066ADRBRG4	~~TPS54616PWPG4~~
TLC5928DBQRG4	TPS2042BDRBT	TPS2066ADRBT	~~TPS54616PWPR~~
TLC5928PW	TPS2042BDRG4	TPS2066ADRBTG4	~~TPS54616PWPRG4~~
TLC5928PWG4	TPS2052BD	TPS2066ADRG4	~~TPS54810PWP~~
TLC5928PWP	TPS2052BDG4	TPS2066D	~~TPS54810PWPG4~~
TLC5928PWPG4	TPS2052BDGN	TPS2066DG4	~~TPS54810PWPR~~
TLC5928PWPR	TPS2052BDGNG4	TPS2066DGN	~~TPS54810PWPRG4~~
TLC5928PWPRG4	TPS2052BDGNR	TPS2066DGNG4	TPS65563ARGTR
TLC5928PWR	TPS2052BDGNRG4	TPS2066DGNR	TPS65563ARGTRG4
TLC5928PWRG4	TPS2052BDR	TPS2066DGNRG4	TPS65563ARGTT
TLC5928RGER	TPS2052BDRBR	TPS2066DR	TPS65563ARGTTG4
TLC5928RGET	TPS2052BDRBT	TPS2066DRG4	TPS65563RGTR
TLC5944PWP	TPS2052BDRG4	TPS5430DDA	TPS65563RGTRG4
TLC5944PWPG4	TPS2060DGN	TPS5430DDAG4	TPS65563RGTT
TLC5944PWPR	TPS2060DGNG4	TPS5430DDAR	TPS65563RGTTG4
TLC5944PWPRG4	TPS2060DGNR	TPS5430DDARG4	TPS65573DSSR

TLC5944RHBR	TPS2060DGNRG4	TPS5431DDA	TPS65573DSST
TLC5944RHBRG4	TPS2060DRBR	TPS5431DDAG4	
TLC5944RHBT	TPS2060DRBT	TPS5431DDAR	
TLC5944RHBTG4	TPS2062AD	TPS5431DDARG4	
Group 2: Devices with Fab Transfer Only			
SN0707071PWR	TPS53124PWR	TPS53125RGER	TPS53127RGET
SN0707071PWRG4	TPS53124PWRG4	TPS53125RGET	TPS53128PW
SN0911044PWR	TPS53124RGER	TPS53126PW	TPS53128PWR
TPS53114APW	TPS53124RGERG4	TPS53126PWR	TPS53128RGER
TPS53114APWR	TPS53124RGET	TPS53126RGER	TPS53128RGET
TPS53114PW	TPS53124RGETG4	TPS53126RGET	TPS53129PW
TPS53114PWR	TPS53125PW	TPS53127PW	TPS53129PWR
TPS53124PW	TPS53125PWR	TPS53127PWR	TPS53129RGER
TPS53124PWG4	TPS53125PWR-SH	TPS53127RGER	TPS53129RGET

Qualification Plan:

This qualification has been developed for the validation of this change. The qualification data will validate that the proposed change meets the applicable released technical specifications.

Qualification Schedule:	**Start:**	February 2013	**End:**	April 2013

Qual Vehicle 1: TPS54610PWP (MSL Level 2-260C)

Wafer Fab Site:	CFAB	Metallization:	TiW/AlSiCu.5%
Wafer Fab Process:	LBC4	Wafer Diameter:	200 mm

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

Reliability Test	Conditions	Sample Size/Fails Lot#1	Lot#2	Lot#3
Preconditioning	(level 2 @ 260C peak +5/-0C)	385/0	385/0	385/0
HTOL High Temp Op Life	125C (1000 Hrs)	77/0	77/0	77/0
Electrical Characterization		30/0	30/0	30/0
**High Temp. Storage Bake	170C (420 Hrs)	77/0	77/0	77/0
**Biased HAST	130C/85%RH (96 Hrs)	77/0	77/0	77/0
**Autoclave	121C (96 Hrs)	77/0	77/0	77/0
**T/C -65C/150C	-65C/+150C (500 Cycles)	77/0	77/0	77/0
ESD CDM	500V	3/0	3/0	3/0
ESD HBM	2000V	3/0	3/0	3/0
Wafer Level Reliability	Approved by TDQRE	1/0	1/0	1/0
Latch-Up	1.5xVcc\25C\250mA	6/0	6/0	6/0
Manufacturability (Assembly)	(per mfg. Site specification)	1/0	1/0	1/0
Manufacturability (Wafer Fab)	(per mfg. Site specification)	1/0	1/0	1/0
Moisture Level Sensitivity	Level 2 @ 260C +5/-0C	12/0	-	-

**Preconditioning: Level 2-260C

Reference Quals

DBUMP Facility Qualification for the copper processing on the Cu/BOAC/COA

Qualification Data: (Approved: 10/31/2003)

This qualification has been developed for the validation of this change. The qualification data will validate that the proposed change meets the applicable released technical specifications.

Qual Vehicle: SH6950DAA0PFP (MSL Level 1–235C)

Wafer Fab Site:	DFAB	Metallization:	TiW/AlSiCu.5%
Wafer Fab Process:	LBC4	Wafer Diameter:	200mm
		Passivation	4KAOX/8KACN

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

Reliability Test	Conditions	Sample Size/Fails Lot#1	Lot#2	Lot#3
**Life Test	125C (1000 hrs)	77/0	77/0	77/0
**Autoclave	121C, 15 PSIG (240 hrs)	77/0	77/0	77/0
**Temp Cycle	-65/+150C (500 Cycles)	77/0	77/0	77/0
**Thermal Shock	-65/+150C (500 Cycles)	77/0	77/0	77/0
Manufacturability (Assembly)	(per mfg. Site specification)	Approved	-	-
**Preconditioning: Level 3-260C				

Clark BOAC facility Qualification for 10um thick BOAC

Qualification Data: (Approved: 10/26/2010)

This qualification has been developed for the validation of this change. The qualification data will validate that the proposed change meets the applicable released technical specifications.

Qual Vehicle 1: SH6966ACC0RGC (MSL Level 3-260C)

Wafer Fab Site:	MIHO8	Metallization:	AlCu
Wafer Fab Process:	LBC7	Wafer Diameter:	200mm
Bump Site:	Clark		

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

Reliability Test	Conditions	Sample Size/Fails Lot#1	Lot#2	Lot#3
**Autoclave	121C (96 hrs)	77/0	77/0	77/0
**Biased HAST	130C/85%RH (96 hrs)	40/0	77/0	40/0
**High Temp. Storage Bake	170C (420 Hrs)	77/0	77/0	77/0
**Temp Cycle	-65/+150C (500 Cycles)	82/0	82/0	81/0
**Thermal Shock	-65/+150C (500 Cycles)	77/0	77/0	77/0
Backgrind Characterizaton	-	Pass	Pass	Pass
Ball Bond Shear	Wires	76/0	76/0	76/0
Bond Pull	Wires	76/0	76/0	76/0
Die Shear	-	10/0	10/0	10/0
Electrical Characterization	-	Pass	-	-
Manufacturability (Assembly)	(per mfg. Site specification)	Approved	-	-
Moisture Sensitivity, JEDEC	Level 3-260C	22/0	22/0	22/0
**Preconditioning: Level 3-260C				

Qual Vehicle 2: TPS65852ZQZ (MSL Level 3-260C)			
Wafer Fab Site:	MIHO8	Metallization:	AlCu
Wafer Fab Process:	LBC7	Wafer Diameter:	200mm
Bump Site:	Clark		

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

Reliability Test	Conditions	Sample Size/Fails Lot#1	Lot#2	Lot#3
**Temperature Cycle	-55/125C (500 Cycles)	77/0	-	-
Ball Bond Shear	Wires	76/0	76/0	76/0
Bond Pull	Wires	76/0	76/0	76/0
Manufacturability (Assembly)	(per mfg. Site specification)	Approved	-	-
**Preconditioning: Level 3-260C				

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