**PCN Number:** 20140915000A **PCN Date:** 05/08/2015 Oualification of TI Chengdu as Additional Assembly and Test Site for Select Devices on Title: X2SON and WQFN Package **Customer Contact:** PCN Manager **Quality Services** Dept: **Change Type:** Assembly Site Wafer Bump Site Design **Assembly Process** Data Sheet Wafer Bump Material Part number change Wafer Bump Process **Assembly Materials Mechanical Specification** Test Site Wafer Fab Site Packing/Shipping/Labeling Test Process Wafer Fab Materials Wafer Fab Process

## **PCN Details**

## **Description of Change:**

Revision A is to announce the <u>retraction</u> of select devices in Group 1 of the Product Affected section. These devices will continue to be manufactured as prior and will not be subjected to the change described in this notification. Affected devices are identified with a strikethrough and are highlighted in yellow in the Product Affected Section.

Texas Instruments Incorporated is announcing the qualification of TI Chengdu (CDAT) as Additional Assembly and Test Site for select devices listed in the "Product Affected" Section. Current assembly sites are as follows and material differences as follows.

	Existing Sites	Additional Site
Assembly/Test Sites	TI-CLARK, CARZ, NSE	CDAT

Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.

## **Reason for Change:**

Continuity of supply

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

None

## Changes to product identification resulting from this PCN:

Assembly Site		
TI-CLARK	Assembly Site Origin (22L)	ASO: QAB
CARZ	Assembly Site Origin (22L)	ASO: CSZ
NSE	Assembly Site Origin (22L)	ASO: NSE
TI Chengdu (CDAT)	Assembly Site Origin (22L)	ASO: CDA

ASSEMBLY SITE CODES: TI-CLARK = I , CARZ = F , NSE = J, CDAT = 8

Sample product shipping label (not actual product label)





(1P) SN74LS07NSR (P) 0336 (31T)LOT: 3959047MLA (4W) TKY(1T) 7523483SI2 (2P) REV:

(2P) REV: (V) 0033317 (20L) CSO: SHE (21L) CCO:USA (22L) ASO: MLA (23L) ACO: MYS

Product Affected: Group 1 Devices					
BQ294502DRVR	BQ294592DRVT	TPS51225RUKR	TPS61158DRVR		
BQ294502DRVT	BQ294602DRVR	TPS51225RUKT	TPS62061DSGR		
BQ294504DRVR	BQ294602DRVT	TPS51275BRUKR	TPS62061DSGT		
BQ294504DRVT	BQ294604DRVR	TPS51275BRUKT	TPS62063DSGR		
BQ294515DRVT	BQ294604DRVT	TPS51275CRUKR	TPS62063DSGT		
BQ294524DRVR	SN51285ARUKR	TPS51275CRUKT	TPS62065DSGR		
BQ294524DRVT	TPS22967DSGR	TPS51275RUKR	TPS62065DSGT		
BQ294532DRVR	TPS22967DSGT	TPS51275RUKT	TPS62080DSGR		
BQ294532DRVT	TPS51225BRUKR	TPS51285ARUKR	TPS62080DSGT		
BQ294582DRVR	TPS51225BRUKT	TPS51285ARUKT	TPS62082DSGR		
BQ294582DRVT	TPS51225CRUKR	TPS51285BRUKR	TPS62082DSGT		
BQ294592DRVR	TPS51225CRUKT	TPS51285BRUKT			
Product Affected: Group 2 Devices					
TLV70712PDQNT	TLV707285PDQNT	TLV71718PDQNT	TPS3839G33DQNT		
TLV70718PDQNT	TLV70732DQNT	TLV71727PDQNT	TPS3839K33DQNT		
TLV70719PDQNT	TLV70736PDQNT	TLV71729PDQNT	TPS3839K50DQNT		
TLV70725PDQNT	TLV71320DQNT	TLV71733PDQNT	TPS3839L30DQNT		
TLV707285DQNT	TLV717185PDQNT	TPS3839G18DQNT			

Qualification Plan - Group 1 Device							
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.							
Qualification Schedule:	Start:	Sept 2014 End:		End:	Dec 2014		
Qual Vehicle # 1: BQ294504DRVR (MSL2-260C)							
Package Construction Details							
Assembly Site:	TI CHENGDU		Mold Cor	mpound:	42086	1208625	
# Pins-Designator, Family:	6-DRV, WQFN		Mount Co	mpound:	42077	4207768	
Lead frame (Finish, Base):	NiPdAu, Cu		Во	nd Wire:	0.96 M	.96 Mil Dia., Cu	
Qualification:  Plan Test Results							
Reliability Test	Conditions	Conditions			Sample Size/Fail		
Reliability Test	Conditions				Lot#1	Lot#2	Lot#3
Electrical Characterization -				30/0	30/0	30/0	
**High Temp. Storage Bake 170C (420hrs)				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	
Manufacturability (per mfg. Site spo		ecification)		1/0	1/0	1/0	
Moisture Sensitivity (level 2 @ 260C)		neak +5/-0C)		12/0	12/0	12/0	
Notes **- Preconditioning sequence: Level 2-260C.							

Qual Vehicle # 2: TPS51285BRUKR (MSL2-260C)						
Package Construction Details						
Assembly Site:	TI	CHENGDU	Mold Compound:	4208625		
# Pins-Designator, Family:	20-	RUK, WQFN	Mount Compound:	420776	58	
Lead frame (Finish, Base):	NiP	iPdAu, Cu Bond W		0.96 Mi	l Dia., Cu	
Qualification:						
Reliability Test	ty Test Conditions			Sam	ple Size/	Fail
Reliability Test Collutions		Conditions		Lot#1	Lot#2	Lot#3
Electrical Characterization -			30/0 77/0	30/0 77/0	30/0	
			.70C (420hrs)			77/0
		121C, 2 atm (96		77/0	77/0	77/0
**T/C -65C/150C		-65C/+150C (500	) Cyc)	77/0	77/0	77/0
Solderability		Pb-free		22/0	22/0	22/0
Manufacturability		(per mfg. Site spe		1/0	1/0	1/0
Moisture Sensitivity		(level 2 @ 260C p		12/0	12/0	12/0
		equence: Level 2-2		)C)		
Qua	11 VE		.158DRVR (MSL2-260	(C)		
Package Construction Details			1	4200625		
Assembly Site:		CHENGDU	Mount Compound:	4208625		
	# Pins-Designator, Family: 6-DRV, WQFN Lead frame (Finish, Base): NiPdAu, Cu		Mount Compound:	4207768 0.96 Mil Dia., Au		
Lead frame (Finish, Base):			Bond Wire:	0.96 MI	i Dia., Au	
Qualification:					Eail	
Reliability Test		Conditions		Lot#1	Lot#2	Lot#3
Electrical Characterization -		_		30/0	30/0	30/0
**High Temp. Storage Bake 170C (420hrs)			77/0	77/0	77/0	
**Autoclave 121C			Hrs)	77/0	77/0	77/0
	, , ,					, -
**T/C -65C/150C						77/0
**T/C -65C/150C  Manufacturability		-65C/+150C (500	) Cyc)	77/0	77/0 1/0	77/0 1/0
Manufacturability	ng se		Cyc) ecification)		77/0	-
Manufacturability Notes **- Preconditioning		-65C/+150C (500 (per mfg. Site speequence: Level 2-2	Cyc) ecification)	77/0 1/0	77/0	-
Manufacturability Notes **- Preconditioning		-65C/+150C (500 (per mfg. Site speequence: Level 2-2	O Cyc) ecification) 60C. 2065DSGR (MSL2-260	77/0 1/0	77/0	-
Manufacturability Notes **- Preconditioning	al Ve	-65C/+150C (500 (per mfg. Site speequence: Level 2-2 ehicle # 4: TPS62	O Cyc) ecification) 60C. 2065DSGR (MSL2-260	77/0 1/0	77/0 1/0	-
Manufacturability Notes **- Preconditionii Qua	TI	-65C/+150C (500 (per mfg. Site specific per m	Cyc) ecification) 60C. 2065DSGR (MSL2-26C) ruction Details	77/0 1/0	77/0 1/0	-
Manufacturability Notes **- Preconditionin Qua  Assembly Site:	TI 8-C	-65C/+150C (500 (per mfg. Site speeduence: Level 2-2 chicle # 4: TPS62 Package Const	Cyc) ecification) 60C. CO65DSGR (MSL2-260) ruction Details Mold Compound:	77/0 1/0 <b>PC)</b> 420862 420776	77/0 1/0	-
Manufacturability Notes **- Preconditionin  Qua  Assembly Site: # Pins-Designator, Family:	TI 8-C NiP	-65C/+150C (50C) (per mfg. Site spectage 2-2 chicle # 4: TPS62 Package Const CHENGDU OSG, WQFN	Cyc) ecification) 60C. C065DSGR (MSL2-26C) ruction Details Mold Compound: Mount Compound:	77/0 1/0 <b>PC)</b> 420862 420776	77/0 1/0	-
Manufacturability Notes **- Preconditionin  Qua  Assembly Site: # Pins-Designator, Family: Lead frame (Finish, Base):  Qualification:   Plan	TI 8-C NiP	-65C/+150C (50C) (per mfg. Site special specia	Cyc) ecification) 60C. C065DSGR (MSL2-26C) ruction Details Mold Compound: Mount Compound:	77/0 1/0 <b>PC)</b> 420862 420776 1.30 Mi	77/0 1/0	1/0
Manufacturability Notes **- Preconditionin  Qua  Assembly Site: # Pins-Designator, Family: Lead frame (Finish, Base): Qualification: Plan  Reliability Test	TI 8-D NiP	-65C/+150C (50C) (per mfg. Site special specia	Cyc) ecification) 60C. C065DSGR (MSL2-26C) ruction Details Mold Compound: Mount Compound:	77/0 1/0 <b>OC)</b> 420862 420776 1.30 Mi  Sam  Lot#1	77/0 1/0 25 68 I Dia., Cu pple Size/ Lot#2	Fail Lot#3
Manufacturability Notes **- Preconditionin  Qua  Assembly Site: # Pins-Designator, Family: Lead frame (Finish, Base): Qualification: Plan  Reliability Test  Electrical Characterization	TI 8-D NiP	-65C/+150C (50C) (per mfg. Site special specia	Cyc) ecification) 60C. C065DSGR (MSL2-26C) ruction Details Mold Compound: Mount Compound:	77/0 1/0 <b>PC)</b> 420862 420776 1.30 Mi  Sam  Lot#1  30/0	77/0 1/0 25 68 I Dia., Cu pple Size/ Lot#2 30/0	1/0 Fail Lot#3 30/0
Assembly Site: # Pins-Designator, Family: Lead frame (Finish, Base): Qualification: Plan Reliability Test Electrical Characterization **High Temp. Storage Ba	TI 8-D NiP	-65C/+150C (50C) (per mfg. Site spectrum of the spectrum of th	Cyc) ecification) 60C. 2065DSGR (MSL2-26C) ruction Details  Mold Compound: Mount Compound: Bond Wire:	77/0 1/0 PC) 420862 420776 1.30 Mi Sam Lot#1 30/0 77/0	77/0 1/0 25 88 I Dia., Cu pple Size/ Lot#2 30/0 77/0	Fail Lot#3 30/0 77/0
Assembly Site:  # Pins-Designator, Family: Lead frame (Finish, Base):  Qualification:  Reliability Test  Electrical Characterization **High Temp. Storage Ba **Autoclave 121C	TI 8-D NiP	-65C/+150C (50C) (per mfg. Site special specia	Cyc) ecification) 60C. C065DSGR (MSL2-26C) ruction Details  Mold Compound: Mount Compound: Bond Wire:  Hrs)	77/0 1/0 420862 420776 1.30 Mi Sam Lot#1 30/0 77/0 77/0	77/0 1/0 25 68 I Dia., Cu nple Size/ Lot#2 30/0 77/0 77/0	Fail Lot#3 30/0 77/0 77/0
Assembly Site:  # Pins-Designator, Family: Lead frame (Finish, Base):  Qualification:  Reliability Test  Electrical Characterization **High Temp. Storage Ba **Autoclave 121C **T/C -65C/150C	TI 8-D NiP	-65C/+150C (50C) (per mfg. Site special specia	Cyc) ecification) 60C. C065DSGR (MSL2-26C) ruction Details  Mold Compound: Mount Compound: Bond Wire:  Hrs) Cyc)	77/0 1/0 1/0 420862 420776 1.30 Mi Sam Lot#1 30/0 77/0 77/0 77/0	77/0 1/0 25 88 I Dia., Cu pple Size/ Lot#2 30/0 77/0 77/0	Fail Lot#3 30/0 77/0 77/0
Assembly Site:  # Pins-Designator, Family: Lead frame (Finish, Base):  Qualification:  Reliability Test  Electrical Characterization **High Temp. Storage Ba **Autoclave 121C **T/C -65C/150C Manufacturability	TI 8-C NiP	-65C/+150C (50C) (per mfg. Site special specia	Cyc) ecification) 60C. C065DSGR (MSL2-26C) ruction Details  Mold Compound: Mount Compound: Bond Wire:  Hrs) Cyc) ecification)	77/0 1/0 420862 420776 1.30 Mi Sam Lot#1 30/0 77/0 77/0	77/0 1/0 25 68 I Dia., Cu nple Size/ Lot#2 30/0 77/0 77/0	Fail Lot#3 30/0 77/0 77/0

Qualification Data - Group 2 Device							
This qualification has been developed for the validation of this change. The qualification data					lata		
validates that the proposed change meets the applicable released technical specifications.							
Qual Vehicle: TLV70728PDQNR (MSL1-260C)							
Package Construction Details							
Assembly Site: TI		CHENGDU Mold Compound:		4210087			
# Pins-Designator, Family: 4-DQN, X		OQN, X2SON	Mount Compound:	422146	4221460		
Lead frame (Finish, Base): NiPo		dAu/NiPdAuAg, Cu	Bond Wire:	0.80 Mi	l Dia., Au		
Qualification:	) [	☐ Test Results					
Reliability Test		Conditions		Sample Size/Fail			
				Lot#1	Lot#2	Lot#3	
Electrical Characterization		-		Pass	Pass	Pass	
**Biased HAST		130C/85%RH (96Hrs)		77/0	77/0	77/0	
**High Temp. Storage Bake		170C (420hrs)		77/0	77/0	77/0	
**Autoclave 121C		121C, 2 atm (96 Hrs)		75/0	77/0	77/0	
**T/C -65C/150C		-65C/+150C (500 Cyc)		77/0	77/0	77/0	
ESD-HBM		1000V		3/0	3/0	3/0	
ESD-CDM		250V		3/0	3/0	3/0	
Solderability		Pb-free		22/0	22/0	22/0	
Salt Atmosphere		24 Hrs		22/0	22/0	22/0	
Manufacturability		(per mfg. Site specification)		Pass	Pass	Pass	
Moisture Sensitivity		(level 1 @ 260C peak +5/-0C)		11/0	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
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