12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20150625003
Qualification of Carsem Suzhou (CSZ) as additional Assembly and Test Site for Select Devices
Change Notification / Sample Request

Date: 7/10/2015
To: MOUSER 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 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

20150625003
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
TLV62084DSGR	null
TLV62084DSGT	null
TPS54620RGYR	null
TPS54620RGYT	null
TPS63020DSJR	null
TPS63020DSJT	null
TPS63021DSJR	null
TPS63021DSJT	null

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

PCN Number:	20150625003	**PCN Date:**	07/10/2015
Title:	Qualification of Carsem Suzhou (CSZ) as additional Assembly and Test Site for Select Devices		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	10/10/2015	**Estimated Sample Availability:**	Date Provided at Sample request

Change Type:

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

PCN Details

Description of Change:

Qualification of Carsem Suzhou (CSZ) as additional Assembly and Test Site for Select Devices. Assembly differences are shown in the following table:

	TI Clark	Carsem Suzhou
Mount compound	4207768	435143

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

Reason for Change:

Continuity of Supply

Anticipated impact on Material Declaration

☐	No Impact to the Material Declaration	☒	Material Declarations or Product Content reports are driven from production data and will be available following the production release. Upon production release the revised reports can be obtained from the TI ECO website.

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

None

Changes to product identification resulting from this PCN:

Assembly Site		
TI Clark Philippines	Assembly Site Origin (22L)	ASO: QAB
Carsem Suzhou	Assembly Site Origin (22L)	ASO: CSZ

Sample product shipping label (not actual product label)

ASSEMBLY SITE CODES: TI-Clark = I, Carsem Suzhou = F

Product Affected:			
905-5462001	TPS53219ARGTR	TPS54620RGYT	TPS63021DSJR
TLV62084DSGR	TPS53219ARGTT	TPS63020DSJR	TPS63021DSJT
TLV62084DSGT	TPS54620RGYR	TPS63020DSJT	SN1408009RTER

Qualification Data

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: TPA3117D2RHBR (MSL2-260C)

Package Construction Details

Assembly Site:	CARSEM SUZHOU	Mold Compound:	441086
# Pins-Designator, Family:	32-RHB, VQFN	Mount Compound:	435143
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	1.30 Mil Dia., Cu

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

Reliability Test	Conditions	Sample Size/Fail		
		Lot#1	Lot#2	Lot#3
Electrical Characterization	-	10/0	10/0	10/0
**High Temp. Storage Bake	170C (420hrs)	77/0	77/0	77/0
**Biased HAST	130C/85%RH (96hrs)	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 specification)	1/0	1/0	1/0
Moisture Sensitivity	(level 2 @ 260C peak +5/-0C)	12/0	-	-

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

Qual Vehicle 2: SN1010017RSAR2 (MSL2-260C)

Package Construction Details

Assembly Site:	CARSEM SUZHOU	Mold Compound:	441086
# Pins-Designator, Family:	16-RSA, VQFN	Mount Compound:	435143
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	2.00 Mil Dia., Cu

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

Reliability Test	Conditions	Sample Size/Fail		
		Lot#1	Lot#2	Lot#3
Electrical Characterization	-	10/0	-	-
**High Temp. Storage Bake	170C (420hrs)	77/0	77/0	77/0
**Biased HAST	130C/85%RH (96hrs)	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 specification)	Passed	Passed	Passed
Moisture Sensitivity	(level 2 @ 260C peak +5/-0C)	12/0	12/0	12/0

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

Qual Vehicle 3: TPS51123RGER (MSL2-260C)

Package Construction Details

Assembly Site:	CARSEM SUZHOU	Mold Compound:	441086
# Pins-Designator, Family:	24-RGE, VQFN	Mount Compound:	435143
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu

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

Reliability Test	Conditions	Sample Size/Fail		
		Lot#1	Lot#2	Lot#3
Electrical Characterization	-	10/0	-	-
Life Test	125C (168 Hrs)	36/0	37/0	38/0

**High Temp. Storage Bake	170C (420hrs)	77/0	77/0	76/0
**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
Surface Mount Solderability	Pb Free	22/0	22/0	22/0
Salt Atmosphere	-	22/0	22/0	22/0
Manufacturability	(per mfg. Site specification)	Passed	Passed	Passed
Moisture Sensitivity	(level 2 @ 260C peak +5/-0C)	12/0	11/0	10/0
Notes **- Preconditioning sequence: Level 2-260C.				

Qual Vehicle 4: TPS650240RHBR (MSL2-260C)

Package Construction Details

Assembly Site:	CARSEM SUZHOU	Mold Compound:	441086
# Pins-Designator, Family:	32-RHB, VQFN	Mount Compound:	435143
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	1.30 Mil Dia., Cu

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

Reliability Test	Conditions	Sample Size/Fail		
		Lot#1	Lot#2	Lot#3
**High Temp. Storage Bake	170C (420hrs)	77/0	77/0	76/0
**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 specification)	Passed	Passed	Passed
Moisture Sensitivity	(level 2 @ 260C peak +5/-0C)	12/0	12/0	12/0
Notes **- Preconditioning sequence: Level 2-260C.				

Qual Vehicle 5: TPA6132A2RTER (MSL2-260C)

Package Construction Details

Assembly Site:	CARSEM SUZHOU	Mold Compound:	441086
# Pins-Designator, Family:	16-RTE, WQFN	Mount Compound:	435143
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu

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

Reliability Test	Conditions	Sample Size/Fail	
		Lot#1	Lot#2
**Autoclave 121C	121C, 2 atm (96 Hrs)	77/0	77/0
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0
Manufacturability	(per mfg. Site specification)	Passed	-
Notes **- Preconditioning sequence: Level 2-260C.			

Qual Vehicle 6: TPS2540RTER (MSL2-260C)

Package Construction Details

Assembly Site:	CARSEM SUZHOU	Mold Compound:	441086
# Pins-Designator, Family:	16-RTE, WQFN	Mount Compound:	435143
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	1.98 Mil Dia., Cu

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

Reliability Test	Conditions	Sample Size/Fail
Life Test	155C (168 Hrs)	80/0
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0
Notes **- Preconditioning sequence: Level 2-260C.		

Qualification Report
DSJ PACKAGE OFFLOAD TO CARZ

Product Attributes

Attributes	Qual Device: TPS63020DSJ	QBS Package: SN1010017RSAR2-CU	QBS Package: TPS650240RHBR-CU	QBS Package: TPS53211RGTR	QBS Package: TPS2559DRC
Assembly Site	CARSEM SUZHOU	CARSEM SUZHOU	CARSEM SUZHOU	CARSEM SUZHOU	CARSEM SUZHOU
Package Family	QFN	QFN	QFN	QFN	QFN
Wafer Fab Site	FFAB	MIHO8	FFAF	MIHO8	MIHO8
Wafer Fab Process	LBC 7	LBC7X3	3370A12X3	LBC7	LBC7

- QBS: Qual By Similarity
- Qual Device TPS63020DSJ is qualified at LEVEL1-260C

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	Test Name / Condition	Duration	Qual Device: TPS63020DSJ	QBS Package: SN1010017RSAR2-CU	QBS Package: TPS650240RHBR-CU	QBS Package: TPS53211RGTR	QBS Package: TPS2559DRC
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	3/230/0	3/231/0
AC	Autoclave 121C	96 Hours	-	3/230/0	3/230/0	3/231/0	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	3/230/0	3/230/0	3/231/0	2/154/0
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	3/230/0	3/230/0	3/231/0	2/154/0
HTOL	Life Test, 150C	300 Hours	-	-	-	-	2/154/0
ELFR	Early Life Failure Rate, 125C	48 Hours	-	-	-	-	3/3000/0
WBS	Ball Bond Shear	Wires	1/76/0	-	-	-	3/228/0
WBP	Bond Pull	Bonds	1/76/0	-	-	-	-
SD	Solderability	PB-Free	-	-	-	-	3/66/0
PD	Physical Dimensions	--	1/15/0	-	-	-	3/45/0

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable

- The following are equivalent HTOL options based on an activation energy of 0.7eV : 125C/1k Hours, 140C/480 Hours, 150C/300 Hours, and 155C/240 Hours
- The following are equivalent HTSL options based on an activation energy of 0.7eV : 150C/1k Hours, and 170C/420 Hours
- The following are equivalent Temp Cycle options per JESD47 : -55C/125C/700 Cycles and -65C/150C/500 Cycles

Quality and Environmental data is available at TI's external Web site: http://www.ti.com/

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

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