PCN Number:	20190426000.1A	**PCN Date:**	June 17, 2019
Title:	Qualification of TI Chengdu A/T (CDAT) as an Assembly site for Select Devices		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	Aug. 3, 2019	**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:

Revision A is to announce the addition of new devices that were not included on the original PCN notification. These new devices are highlighted and **bolded** under Group 1 in the device list below. The expected first shipment date for these new devices will be 90 days from this notice (Sept 17, 2019) for these newly added devices only. The proposed 1st ship date of Aug 3, 2019 still applies for the original set of devices.

Texas Instruments is pleased to announce the qualification of TI Chengdu (CDAT) as an Additional Assembly site for the list of devices shown below. Current assembly sites and Material differences are as follows:

Group 1 Device:

	Carsem Suzhou	Carsem S	CDAT
Mount Compound	SID#455143	SID#435143	4207123
Mold compound	SID#441086	SID#435370	4222198

Group 2 Devices:

	Clark	CDAT
Mount compound	4207768	4207123
Mold compound	4208625	4222198

Reason for Change:

Continuity of Supply

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

None

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 at the site link below http://www.ti.com/quality/docs/materialcontentsearch.tsp

Changes to product identification resulting from this PCN:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (21L)	Assembly City
TI Clark	QAB	PHL	Angeles City, Pampanga
Carsem S	CRS	MYS	Jelapang
Carsem Suzhou	CSZ	CHN	Jiangsu

CDAT	CDA	CHN	Chengdu

Sample product shipping label (not actual product label)

Product Affected:

Group 1 Devices:

SN0803054DRCR	**SN75LVCP601RTJR**	**SN75LVCP601RTJT**

Group 2 Devices:

TPS65233RTER	TPS65233RTET

Group 1 Devices Qual Memo:

Qualification Results

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

Type	Test Name / Condition	Duration	QBS Package Reference: BQ294504DRV	QBS Package Reference: TRS3122ERGE	QBS Package Reference: BQ24196RGE	QBS Package Reference: TPS51285BRUK	QBS Package Reference: TPS53641RSB
AC	Autoclave 121C	96 Hours	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	3/231/0	3/231/0	-	-	-
HTOL	Life Test, 150C	300 Hours	-	1/77/0	-	-	-
HTSL	High Temp. Storage Bake, 150C	1000 Hours	-	3/231/0	-	-	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	-	-	3/231/0
SD	Solderability	Pb Free	-	1/22/0	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0
UHAST	Unbiased HAST, 110C/85%RH	264 Hours	-	-	-	-	-
WBP	Bond Pull	Wires	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0
WBS	Ball Bond Shear	Wires	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0

- 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

Qualification Report (additional device)

Approve Date 07-June-2019

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: SN75LVCP601RTJR/T	Qual Device: HD3SS460RNH	QBS Process Reference: HD3SS3411TRWAQ1
AC	Autoclave 121C	96 Hours	1/77/0	1/77/0	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	-	Pass	Pass
ELFR	Early Life Failure Rate, 140C	24 Hours	-	-	3/2400/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/231/0
HBM	ESD - HBM	4000 V	-	1/3/0	1/3/0
CDM	ESD - CDM	1500 V	-	1/3/0	1/3/0
HTOL	Life Test, 140C	480 Hours	-	-	3/231/0
HTSL	High Temp. Storage Bake, 150C	1000 Hours	-	3/231/0	2/90/0
LU	Latch-up 90C	(per JESD78)	-	1/6/0	1/6/0
LU	Latch-up 25C	(per JESD78)		1/6/0	1/6/0
PD	Physical Dimensions	Cpk>1.67	1/5/0	3/15/0	3/30/0
SD	Surface Mount Solderability	Pb Free	1/22/0	3/15/0	1/15/0
SD	Surface Mount Solderability	Pb	1/22/0	3/15/0	1/15/0
TC	Temperature Cycle, -65/150C	500 Cycles	1/77/0	1/77/0	3/231/0
MQ	Manufacturing Assembly	(per mfg. Site specification)	Pass	Pass	Pass
BPC	Bond Pad Cratering Check			3/6/0	
TPI	Thermal Path Integrity	Level 2-260C(+5/-0C)		3/26/0	-
UHAST	Unbiased HAST, 130C/85%RH	96 Hours	-	3/231/0	-
WBP	Bond Pull	Wires	1/76/0	3/228/0	3/228/0
WBS	Ball Bond Shear	Wires	1/76/0	3/228/0	3/228/0
VQR	Visual Quality Reliability Inspection	Post 500 Temp Cycle	1/2/0	1/2/0	-

- QBS: Qual By Similarity
- Qual Devices qualified at LEVEL2-260C: HD3SS460IRNH, HD3SS460RNH
- 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

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Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

Group 2 Devices Qual Memo:

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TPS65233RTE	QBS Package Reference: BQ24196RGER	QBS Package Reference: TPS54678RTE
ED	Electrical Characterization	Per Datasheet Parameters	-	-	-
ED	Electrical Characterization, side by side	-	Pass	-	Pass
HBM	ESD - HBM	4000 V	-	-	-
HBM	ESD - HBM	2000 V	-	-	-
CDM	ESD - CDM	1500 V	-	-	1/3/0
CDM	ESD - CDM	1000 V	-	-	-
CDM	ESD - CDM	750 V	-	-	-
LU	Latch-up	(per JESD78)	-	-	-
MM	ESD - MM	100 V	-	-	-
HTOL	Life Test, 125C	1000 Hours	-	-	-
HTSL	High Temp Storage Bake, 150C	1000 Hours	-	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-
AC	Autoclave 121C	96 Hours	-	3/231/0	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	3/231/0	-
TS	Thermal Shock, -65/150C	500 Cycles	-	-	-
WBP	Bond Pull	Wires	-	3/228/0	-
WBS	Ball Bond Shear	Wires	-	3/228/0	-

- 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

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Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

For questions regarding this notice, e-mails can be sent to the 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
WW PCN Team	PCN_ww_admin_team@list.ti.com