12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN#20190301000.1A
Qualification of TI Chengdu A/T (CDAT) as an Assembly and test site Select Devices
Change Notification / Sample Request

Date: March 29, 2019
To: TOKYO ELECTRON DEVICE (DSTR) PCN

Dear Customer:

Revision A is to announce the addition of new devices that were not included on the original PCN notification.

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 proposed first ship date is indicated on page 3 of this notification, unless customer agreement has been reached on an earlier implementation of the change.

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 Team (PCN_ww_admin_team@list.ti.com). For sample requests or sample related questions, contact the TI Samples Team at pcn_sr_team@list.ti.com.

Sincerely,

PCN Team
SC Business Services

20190301000.1
Change Notification / Sample Request
Attachments

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
CC1310F128RGZT	null
CC1310F128RHBT	null
CC1310F64RHBT	null
CC1310F128RGZR	null
CC2650F128RGZT	null
CC2640F128RGZT	null
CC2640F128RSMT	null
CC2640F128RSMR	null

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

PCN Number:	20190301000.1A	**PCN Date:**	Mar 29 2019
Title:	Qualification of TI Chengdu A/T (CDAT) as an Assembly and test site for Select Devices		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	June 4 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. Group 2 has additional devices and a new Group 4 has been created. These new devices are highlighted and **bolded** in the device list below. The expected first shipment date for these new devices will be 90 days from this notice for these newly added devices only.

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 Devices:

	Clark	CDAT
Leadframe Prep	none	roughened
Mold compound	4208625	4222198
Mount Compound	4207768	4207123

Group 2 Devices:

	Clark	CDAT
Mold compound	4208625	4222198

Group 3 Devices:

	Clark	UTAC	CDAT
Mold compound	4208625	SID#CZ0134	4222198
Mount compound	4207123	SID#PZ0031	4207123
Lead Finish	NiPdAu	NiPdAuAg	NiPdAu

Group 4 Devices:

	Clark	UTAC	CDAT
Mold compound	4208625	SID#CZ0289	4222198
Mount compound	4207123	SID#PZ0035	4207123
Lead Finish	NiPdAu	NiPdAuAg	NiPdAu

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			
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
UTAC	NSE	THA	Bangkok
CDAT	**CDA**	**CHN**	**Chengdu**

Sample product shipping label (not actual product label)

Product Affected:

Group 1 Devices:

MSP430FR58671IRGZR	MSP430FR5868IRGZR	MSP430FR5967IRGZR	MSP430FR59691IRGZR
MSP430FR58671IRGZT	MSP430FR5868IRGZT	MSP430FR5967IRGZT	MSP430FR59691IRGZT
MSP430FR5867IRGZR	MSP430FR5869IRGZR	MSP430FR5968IRGZR	MSP430FR5969IRGZR
MSP430FR5867IRGZT	MSP430FR5869IRGZT	MSP430FR5968IRGZT	MSP430FR5969IRGZT

Group 2 Devices:

TPS25740ARGER	TPS25740RGET	TPS25741RSMR	**TPS51393RJET**
TPS25740ARGET	TPS25741ARSMR	TPS25741RSMT	**TPS51395RJER**
TPS25740RGER	TPS25741ARSMT	**TPS51393RJER**	**TPS51395RJET**

Group 3 Devices:

CC2530F128RHAR	CC2531F256RHAT	CC2534RHAX	CC2541F256RHAR
CC2530F128RHAT	CC2533ARHAR	CC2540F128RHAR	CC2541F256RHAT
CC2530F12CRHA	CC2533CRHAR	CC2540F128RHAT	CC2541SRHAR
CC2530F256RHAR	CC2533F32RHAR	CC2540F256RHAR	CC2541SRHAT
CC2530F256RHAT	CC2533F32RHAT	CC2540F256RHAT	CC2570RHAR
CC2530F25CRHA	CC2533F64RHAR	CC2540F25ARHAR	CC2570RHAT
CC2530F32RHAR	CC2533F64RHAT	CC2540TF256RHAR	CC2571RHAR
CC2530F32RHAT	CC2533F96RHA	CC2540TF256RHAT	CC2571RHAT
CC2530F64RHAR	CC2533F96RHAR	CC2541CRHA	FRE008RHAR
CC2530F64RHAT	CC2533F96RHAT	CC2541CRHAR	FRE009RHAR
CC2531F128RHAR	CC2534RHA	CC2541F128RHAR	FRE010RHAR
CC2531F128RHAT	CC2534RHAR	CC2541F128RHAT	FRE015RHAR
CC2531F256RHAR	CC2534RHAT		

Group 4 Devices:

CC1310F128RGZR	**CC1310F64RSMR**	**CC2630F128RHBR**	**CC2640R2FRSMT**
CC1310F128RGZT	**CC1310F64RSMT**	**CC2630F128RHBT**	**CC2650F128RGZR**
CC1310F128RHBR	**CC1350F128RGZR**	**CC2630F128RSMR**	**CC2650F128RGZT**
CC1310F128RHBT	**CC1350F128RGZT**	**CC2630F128RSMT**	**CC2650F128RHBR**
CC1310F128RSMR	**CC1350F128RHBR**	**CC2640F128RGZR**	**CC2650F128RHBT**
CC1310F128RSMT	**CC1350F128RHBT**	**CC2640F128RGZT**	**CC2650F128RSMR**
CC1310F32RGZR	**CC1350F128RSMR**	**CC2640F128RHBR**	**CC2650F128RSMT**
CC1310F32RGZT	**CC1350F128RSMT**	**CC2640F128RHBT**	**CC2670F128RGZR**
CC1310F32RHBR	**CC2620F128RGZR**	**CC2640F128RSMR**	**CC2670F128RGZT**
CC1310F32RHBT	**CC2620F128RGZT**	**CC2640F128RSMT**	**CC2670F128RSMR**
CC1310F32RSMR	**CC2620F128RHBR**	**CC2640R2FRGZR**	**CC2670F128RSMT**
CC1310F32RSMT	**CC2620F128RHBT**	**CC2640R2FRGZT**	**FRE012RGZR**
CC1310F64RGZR	**CC2620F128RSMR**	**CC2640R2FRHBR**	**FRE012RHBR**
CC1310F64RGZT	**CC2620F128RSMT**	**CC2640R2FRHBT**	**FRE014RGZR**
CC1310F64RHBR	**CC2630F128RGZR**	**CC2640R2FRSMR**	**FRE014RHBR**
CC1310F64RHBT	**CC2630F128RGZT**		

Group 1 Devices Qual Memo:

TI Information
Selective Disclosure

Qualification Report

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

Type	Test Name / Condition	Duration	Qual Device: MSP430FR5969IRGZ	QBS Package Reference: MSP430FR2633IRHB
AC	Autoclave 121C	96 Hours	3/231/0	-
HAST	Biased HAST, 110C/85%RH	264 Hours	-	3/231/0
HTSL	High Temp. Storage Bake, 150C	1000 Hours	-	3/231/0
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0	-
WBP	Bond Pull	Wires	3/228/0	-
WBS	Ball Bond Shear	Wires	3/228/0	-

- QBS: Qualification By Similarity
- Qualification Device MSP430FR5969IRGZ is qualified at LEVEL2-260C
- Preconditioning was performed for Autoclave, Biased HAST, Temperature Cycle, and High Temp. Storage Bake.

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

Group 2 Devices Qual Memos:

TI Information
Selective Disclosure

Qualification Report

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TPS25725RSM	Qual Device: TPS25740ARGE	Qual Device: TPS25740RGE	Qual Device: TPS25741ARSM	Qual Device: TPS25741RSM	QBS Package Reference: TPS2231RGPR
AC	Autoclave 121C	96 Hours	-	-	-	-	-	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	-	-	Pass	-	Pass	-
ELFR	Early Life Failure Rate, 125C	48 Hours	-	-	-	-	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	-	-
HBM	ESD - HBM	3000 V	-	1/3/0	-	-	-	-
CDM	ESD - CDM	1000 V	1/3/0	1/3/0	-	-	1/3/0	-
HTOL	Life Test, 125C	1000 Hours	-	-	-	-	-	-
HTOL	Life Test, 140C	480 Hours	-	-	-	-	-	-
HTOL	Life Test, 150C	300 Hours	-	-	-	-	-	-
HTOL	Life Test, 155C	240 Hours	-	-	-	-	-	3/231/0
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	-	-	-	3/231/0
HTSL	High Temp. Storage Bake, 150C	500 Hours	-	-	-	-	-	-
LU	Latch-up	(per JESD78)	-	1/6/0	-	-	1/6/0	-
PD	Physical Dimensions	--	-	-	-	-	-	3/15/0
SD	Solderability	8 Hours Steam Age	-	-	-	-	-	3/66/0
TC	Temperature Cycle, -55/125C	700 Cycles	-	-	-	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	-	-	3/231/0
TS	Thermal Shock -65/150C	500 Cycles	-	-	-	-	-	3/231/0
UHAST	Unbiased HAST, 130C/85%RH	96 Hours	-	-	-	-	-	-
WBP	Bond Pull	Wires	-	-	-	-	-	3/228/0
WBS	Bond Shear	Wires	-	-	-	-	-	3/228/0
YLD	FTY and Bin Summary	--	Pass	Pass	Pass	Pass	Pass	-

- QBS: Qual By Similarity
- Qual Devices qualified at LEVEL2-260CG: TPS25740RGE, TPS25741RSM, TPS25725RSM, TPS25740ARGE, TPS25741ARSM
- 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

TI Information
Selective Disclosure

Qualification Report

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TPS51395RJE	Qual Device: TPS51393RJE	QBS Product Reference: TPS51393RJE	QBS Product Reference: TPS51393RJE
ED	Electrical Characterization	Per Datasheet Parameters	Pass	Pass	Pass	-
HBM	ESD - HBM	2500 V	-	3/9/0	3/9/0	-
CDM	ESD - CDM	1500 V	-	3/9/0	3/9/0	-
LU	Latch-up	(per JESD78)	-	3/18/0	3/18/0	-
HTOL	Life Test, 125C	1000 Hours	-	3/231/0	3/230/0	1/77/0
ELFR	Early Life Failure Rate, 125C	48 Hours	-	-	-	3/2400/0
HTSL	High Temp Storage Bake, 170C	420 Hours	-	3/231/0	3/231/0	1/77/0
HAST	Biased HAST, 110C/85%RH	264 Hours	-	-	1/77/0	3/231/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	3/231/0	-	-
UHAST	Unbiased HAST, 110C/85%RH	264 Hours	-	-	-	3/231/0
UHAST	Unbiased HAST, 130C/85%RH	96 Hours	-	3/231/0		
AC	Autoclave, 121C/100%RH	96 Hours	-	-	1/77/0	-
TC	Temperature Cycle, -55/125C	700 Cycles	-	3/231/0	1/77/0	3/231/0
SD	Surface Mount Solderability	Pb Free	-	3/66/0	-	
SD	Surface Mount Solderability	Pb	-	3/66/0	-	-
PD	Physical Dimensions	--	-	3/90/0	-	-

- QBS: Qual By Similarity
- Qual Device TPS51393RJE is qualified at LEVEL2-260C
- Qual Device TPS51395RJE is qualified at LEVEL2-260C
- 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

Group 3 Devices Qual Memo:

TI Information
Selective Disclosure

Qualification Report

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

Type	Test Name / Condition	Duration	Qual Device: CC2540F256RHAR	QBS Package Reference: MSP430F5172IRSBR
AC	Autoclave 121C	96 Hours	1/77/0	3/231/0
HAST	Biased HAST, 110C/85%RH	264 Hours	-	3/77/0
HTSL	High Temp Storage Bake 150C	1000 Hours	-	3/231/0
TC	Temperature Cycle, -55/125C	700 Cycles	1/77/0	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	3/231/0

- QBS: Qual By Similarity
- Qual Device CC2540F256RHAR is qualified at LEVEL3-260C
- 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

Group 4 Devices Qual Memo:

TI Information
Selective Disclosure

Qualification Report

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

Type	Test Name / Condition	Duration	Qual Device: CC2640R2FRGZR	Qual Device: CC2640R2FRSMR
AC	Autoclave 121C	96 Hours	3/231/0	3/231/0
HTSL	High Temp Storage Bake 150C	1000 Hours	3/231/0	-
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0	3/231/0
THB	Biased Temperature and Humidity, 85C/85%RH	1000 Hours	3/78/0	-

- QBS: Qual By Similarity
- Qual Device CC2640R2FRSMR is qualified at LEVEL3-260CG
- Qual Device CC2640R2FRGZR is qualified at LEVEL3-260CG
- 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 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