

PCN Number:	20220131000.1		PCN Date:	February 01, 2022												
Title:	Qualification of TI Chengdu as an additional Assembly site for Select Devices															
Customer Contact:	PCN Manager	Dept:	Quality Services													
Proposed 1st Ship Date:	May 01, 2022	Estimated Sample Availability:	Date provided at sample request													
Change Type:																
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design	<input type="checkbox"/>	Wafer Bump Site											
<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet	<input type="checkbox"/>	Wafer Bump Material											
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change	<input type="checkbox"/>	Wafer Bump Process											
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Wafer Fab Site											
<input checked="" type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<input type="checkbox"/>	Wafer Fab Materials											
		<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Process											
PCN Details																
Description of Change:																
Texas Instruments Incorporated is announcing the qualification of TI Chengdu as an additional Assembly site for the list of devices shown below. Construction differences between the 2 sites are as follows:																
<table border="1"> <thead> <tr> <th>Assembly Site</th> <th>Assembly Site Origin</th> <th>Assembly Country Code</th> <th>Assembly City</th> </tr> </thead> <tbody> <tr> <td>UTAC</td> <td>NSE</td> <td>THA</td> <td>Bangkok</td> </tr> <tr> <td>TI Chengdu</td> <td>CDA</td> <td>CHN</td> <td>Chengdu</td> </tr> </tbody> </table>					Assembly Site	Assembly Site Origin	Assembly Country Code	Assembly City	UTAC	NSE	THA	Bangkok	TI Chengdu	CDA	CHN	Chengdu
Assembly Site	Assembly Site Origin	Assembly Country Code	Assembly City													
UTAC	NSE	THA	Bangkok													
TI Chengdu	CDA	CHN	Chengdu													
Material Differences:																
<table border="1"> <thead> <tr> <th></th> <th>UTAC</th> <th>TI Chengdu</th> </tr> </thead> <tbody> <tr> <td>Wire material</td> <td>Au</td> <td>Cu</td> </tr> <tr> <td>Mount compound</td> <td>PZ0037, PZ0031</td> <td>4207123</td> </tr> <tr> <td>Mold compound</td> <td>CZ0142</td> <td>4222198</td> </tr> </tbody> </table>						UTAC	TI Chengdu	Wire material	Au	Cu	Mount compound	PZ0037, PZ0031	4207123	Mold compound	CZ0142	4222198
	UTAC	TI Chengdu														
Wire material	Au	Cu														
Mount compound	PZ0037, PZ0031	4207123														
Mold compound	CZ0142	4222198														
Reason for Change:																
Supply continuity																
Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):																
None																
Impact on Environmental Ratings																
Checked boxes indicate the status of environmental ratings following implementation of this change. If below boxes are checked, there are no changes to the associated environmental ratings or to the associated device component Test Reports.																
<table border="1"> <thead> <tr> <th>RoHS</th> <th>REACH</th> <th>Green Status</th> <th>IEC 62474</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/> No Change</td> <td><input checked="" type="checkbox"/> No Change</td> <td><input checked="" type="checkbox"/> No Change</td> <td><input checked="" type="checkbox"/> No Change</td> </tr> </tbody> </table>					RoHS	REACH	Green Status	IEC 62474	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change				
RoHS	REACH	Green Status	IEC 62474													
<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change													
Changes to product identification resulting from this PCN:																

Assembly Site		
UTAC	Assembly Site Origin (22L)	ASO: NSE
CDAT	Assembly Site Origin (22L)	ASO: CDA

Sample product shipping label (not actual product label)





MADE IN: Malaysia
2DC: 2Q:

MSL 2 / 260C / 1 YEAR	SEAL DT
MSL 1 / 235C / UNLIM	03/29/04

OPT:
ITEM: 39
LBL: 5A (L)TO:1750

(1P) SN74LS07NSR
(Q) 2000 (D) 0336
(31T) LOT: 3959047MLA
(4W) TKY (1T) 7523483SI2
(P)
(2P) REV: (V) 0033317
(20L) CSO: SHE (21L) CCO: USA
(22L) ASO: MLA (23L) ACO: MYS

Product Affected:

CC1190RGVR	CC2591RGVRG4	CC8520RHAT	CC8531RHAR
CC1190RGVT	CC2591RGVT	CC8521RHAR	CC8531RHAT
CC2590RGVR	CC2591RGVTG4	CC8521RHAT	HPA00420RGVR
CC2590RGVRG4	CC2592RGVR	CC8521SRHAR	HPA01083RGVR
CC2590RGVT	CC2592RGVT	CC8530RHAR	
CC2591RGVR	CC8520RHAR	CC8530RHAT	

Qualification Report

Approve Date 19-Jan-2022

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: CC1190RGVR	Qual Device: CC2590RGVR	Qual Device: CC2591RGVR	Qual Device: CC2592RGVR	QBS Package Reference: TRF3722IRGZ
AC	Autoclave 121C	96 Hours	-	-	-	-	3/234/0
CDM	ESD - CDM	+750 V	-	-	-	-	1/3/0
ED	Electrical Characterization	-	-	-	-	-	1/30/0
HBM	ESD - HBM	+2000 V	-	-	-	-	1/3/0
HTSL	**High Temp. Storage Bake	150C (500, 1000 Hours)	-	-	-	3/77/0	-
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	-	3/231/0
LU	Latch-up	Per JESD78	-	-	-	-	1/6/0
MQ	Manufacturability	(per mfg Site specification)	-	-	-	-	3/Pass
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	1/1/0	1/1/0	1/1/0	3/3/0	-
MQ	Manufacturability (Wafer Fab)	(per mfg. Site specification)	-	-	-	-	1/1/0
MSL	Thermal Path Integrity, JEDEC,	85C / 60%RH/168	-	-	-	-	3/36/0

Type	Test Name / Condition	Duration	Qual Device: <u>CC1190RGVR</u>	Qual Device: <u>CC2590RGVR</u>	Qual Device: <u>CC2591RGVR</u>	Qual Device: <u>CC2592RGVR</u>	QBS Package Reference: <u>TRF3722IRGZ</u>
	L2	Hours					
PC	Preconditioning	(per the appropriate pkg level)	-	-	-	3/231/0	-
TC	Temperature Cycle, -65/150C	1000 Cycles	-	-	-	-	3/231/0
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	3/77/0	3/231/0
UHAST	**Unbiased HAST	130C/85%RH (96 Hours)	-	-	-	3/77/0	-
WBP	Bond Strength	76 ball bonds, min. 3 units	-	-	-	3/76/0	-
YLD	FTY and Bin Summary	-	1/1/0	1/1/0	1/1/0	3/3/0	3/Pass

- QBS: Qual By Similarity

- Qual Device CC2591RGVR is qualified at LEVEL2-260C

- Qual Device CC2592RGVR 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

Qualification Report

Approve Date 20-Jan-2022

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: <u>CC8520RHA</u> R	Qual Device: <u>CC8530RHA</u> R	Qual Device: <u>CC8531RHA</u> R	QBS Process Reference: <u>MSP430F5172IRSB</u> R	QBS Process Reference: <u>MSP430G2452IRSA16</u> R
AC	Autoclave 121C	192 Hours	-	-	-	-	-
AC	Autoclave 121C	96 Hours	-	-	-	3/240/0	-
HAST	Biased HAST, 110C/85%RH	264 Hours	-	-	-	3/84/0	-
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	-	3/240/0	-
MSL	Moisture Sensitivity	MSL2 - 260C	-	-	-	-	-
PC	Preconditioning	Level 2 -	-	-	-	-	-

Type	Test Name / Condition	Duration	Qual Device: <u>CC8520RHA</u> R	Qual Device: <u>CC8530RHA</u> R	Qual Device: <u>CC8531RHA</u> R	QBS Process Reference: <u>MSP430F5172IRSB</u> R	QBS Process Reference: <u>MSP430G2452IRSA16</u> R
		260C					
TC	Temperature Cycle, -65/150C	1000 Cycles	-	-	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	3/252/0	3/296/0
TC	Temperature Cycle, -65/150C	Post Temp Cycle SAM	-	-	-	-	-
XRAY	X-RAY	-	-	-	-	-	-
MQ	Assembly MQ	Per Site spec	1/1/0	1/1/0	1/1/0	-	-
YLD	FTY and Bin summary	-	1/1/0	1/1/0	1/1/0	-	-

Type	Test Name / Condition	Duration	QBS Process Reference: <u>MSP430G2755IRHA40R</u>
AC	Autoclave 121C	192 Hours	3/252/0
AC	Autoclave 121C	96 Hours	3/252/0
HAST	Biased HAST, 110C/85%RH	264 Hours	-
HTSL	High Temp Storage Bake 150C	1000 Hours	-
MSL	Moisture Sensitivity	MSL2 - 260C	3/45/0
PC	Preconditioning	Level 2 - 260C	3/584/0
TC	Temperature Cycle, -65/150C	1000 Cycles	3/252/0
TC	Temperature Cycle, -65/150C	500 Cycles	-
TC	Temperature Cycle, -65/150C	Post Temp Cycle SAM	3/45/0
XRAY	X-RAY	-	3/15/0
MQ	Assembly MQ	Per Site spec	-
YLD	FTY and Bin summary	-	-

- QBS: Qual By Similarity

- Qual Device CC8520RHAR is qualified at LEVEL3-260C

- Qual Device CC8531RHAR is qualified at LEVEL3-260C

- Qual Device CC8530RHAR 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

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