

PCN Number:	20211209000.1			PCN Date:	December 17, 2021		
Title:	Qualification of TIPI as additional Assembly site for select devices						
Customer Contact:	PCN Manager	Dept:	Quality Services				
Proposed 1st Ship Date:	Mar 17, 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 TIPI as an additional Assembly site for devices listed below in the product affected section. Construction differences and current assembly site as follows:							
		HNA		JCET		TIPI	
Mount Compound		SID#400194		S#120402001600		4226215	
Mold Compound		SID#450214		S#111020003809		4222198	
Lead Finish		NiPdAuAg		NiPdAu		NiPdAu	
Package marking differences:							
	PACKAGE MARKING				PACKAGE MARKING		
MATERIAL	HNA	JCET	TIPI	MATERIAL	HNA	JCET	TIPI
SN74LVC1G19DRLR	CYR	CY7	1JZ	SN74LVC2G34DRLR	C9R	C97	1K8
SN74LVC1G19DRLRG4	CYR	CY7	1JZ	SN74AUP1G97DRLR	HPR	HP7	1K9
SN74LVC1G332DRLR	CZR	CZ7	1K1	SN74AUP1G97DRLRG4	HPR	HP7	1K9
SN74LVC1G57DRLR	CLR	CL7	1K2	SN74AVC1T45DRLR	TCR / TCH	N/A	1JW
SN74LVC1G58DRLR	CPR	CP7	1K3	SN74AVC1T45DRLRG4	TCR / TCH	N/A	1JW
SN74LVC1G97DRLR	CSR	CS7	1K4	74AVC1T45DRLR	1BW	N/A	1BW
SN74LVC1G97DRLRG4	CSR	CS7	1K4	SN74AXC1T45DRLR	1A1	N/A	1A1
SN74LVC1G98DRLR	CWR	CW7	1K5	SN74AUC1G19DRLR	U5R	U57	1KA
SN74LVC1GX04DRLR	D2R	D27	1K6	SN74AUC2G34DRLR	U9R	U97	1KB
SN74LVC1T45DRLR	TAR	TA7	1JX	SN74AUP1G57DRLR	HHR	HH7	1KC
SN74LVC1T45DRLRG4	TAR	TA7	1JX	SN74AUP1G57DRLRG4	HHR	HH7	1KC
SN74LVC2G04DRLR	CCR	CC7	1K7	SN74AUP1G58DRLR	HJR	HJ7	1KD
SN74LVC2G04DRLRG4	CCR	CC7	1K7	SN74AUP1G98DRLR	HRR	HR7	1KE
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.

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	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
HNA	HNT	THA	Ayutthaya
JCET	JCE	CHN	Jiangyin
TIPI	PHI	PHL	Baguio City

Sample product shipping label (not actual product label)

TEXAS INSTRUMENTS
MADE IN: Malaysia
2DC: 20:
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:

74AVC1T45DRLR	SN74AXC1T45DRLR	SN74LVC1T45DRLRG4	TMP303DDRLR
HPA00782DRLR	SN74LVC1G19DRLR	SN74LVC2G04DRLR	TMP303DDRLT
SN74AUC1G19DRLR	SN74LVC1G19DRLRG4	SN74LVC2G04DRLRG4	TMP303EDRLR
SN74AUC2G34DRLR	SN74LVC1G3157DRLR	SN74LVC2G34DRLR	TMP303EDRLT
SN74AUP1G57DRLR	SN74LVC1G332DRLR	TMP20AIDRLR	TMP303FDRLR
SN74AUP1G57DRLRG4	SN74LVC1G57DRLR	TMP20AIDRLT	TMP303FDRLT
SN74AUP1G58DRLR	SN74LVC1G58DRLR	TMP303ADRLR	TMP303GDRLR
SN74AUP1G97DRLR	SN74LVC1G97DRLR	TMP303ADRLT	TMP303GDRLT
SN74AUP1G97DRLRG4	SN74LVC1G97DRLRG4	TMP303BDRLR	TPD4E001DRLR
SN74AUP1G98DRLR	SN74LVC1G98DRLR	TMP303BDRLT	TPD4E001DRLRG4
SN74AVC1T45DRLR	SN74LVC1GX04DRLR	TMP303CDRLR	
SN74AVC1T45DRLRG4	SN74LVC1T45DRLR	TMP303CDRLT	

Qualification Report

Approve Date 17-Aug-2021

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: <u>SN74AVC1T45DRLR</u>	Qual Device: <u>SN74AXC1T45DRLR</u>	QBS Package Reference: <u>SN74HCS595DYYR</u>
AC	Autoclave 121C	96 Hours	-	-	3/231/0
CDM	ESD - CDM - Q100	2000V	-	-	1/3/0
ED	Electrical Distributions	Cpk>1.67 Room, hot, and cold test	-	-	Pass
HAST	Biased HAST, 130C/85%RH	96 Hours	1/77/0	1/77/0	3/231/0

Type	Test Name / Condition	Duration	Qual Device: <u>SN74AVC1T45DRLR</u>	Qual Device: <u>SN74AXC1T45DRLR</u>	QBS Package Reference: <u>SN74HCS595DYR</u>
HBM	ESD - HBM - Q100	7000V	-	-	1/3/0
HTOL	Life Test, 150C	300 Hours	-	-	3/231/0
HTSL	High Temp Storage Bake 150C	1000 Hours	1/77/0	1/77/0	1/45/0
LU	Latch-up	(Per JESD78)	-	-	1/6/0
PD	Physical Dimensions	(per mechanical drawing)	1/15/0	1/15/0	-
TC	Temperature Cycle, - 65/150C	500 Cycles	1/77/0	1/77/0	3/231/0
UHAS T	Unbiased HAST 130C/85%RH	96 Hours	1/77/0	1/77/0	-
WBP	Bond Pull	36 Wires from 5 devices	1/36/0	1/36/0	-
WBS	Ball Bond Shear	36 balls from 5 devices	1/36/0	1/36/0	-

- 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

Approve Date 25-Oct-2021

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: <u>SN74LVC1T45DRLR</u>	QBS Process Reference: <u>SN74HCS595QDYRQ1</u>	QBS Package Reference: <u>TMP102AIDRLR</u>
HTOL	Life Test, 125C	1000 Hours	-	-	1/80/0
AC	Autoclave 121C	96 Hours	-	3/231/0	-
CDM	ESD - CDM	2000V	-	1/3/0	-
ED	Electrical Distributions	Cpk>1.67 Room, hot, and cold test	-	Pass	-
HAST	Biased HAST, 130C/85%RH	96 Hours	1/77/0	3/231/0	3/231/0
HBM	ESD - HBM	7000V	-	1/3/0	-
HTOL	Life Test, 150C	300 Hours	-	3/231/0	-
HTSL	High Temp Storage Bake 150C	1000 Hours	1/77/0	1/52/0	1/77/0
LU	Latch-up	(Per JESD78)	-	1/6/0	-
PC	Preconditioning Level 1	MSL1-260C	No Fails	No Fails	No Fails
PD	Physical Dimensions	Cpk>1.67	Pass	Pass	-
TC	Temperature Cycle, - 65/150C	500 Cycles	1/77/0	3/231/0	-
UHAS T	Unbiased HAST 130C/85%RH	96 Hours	1/77/0	-	3/231/0
WBP	Bond Pull	Wires	1/36/0	-	-
WBS	Ball Bond Shear	Wires	1/36/0	-	-

- QBS: Qual By Similarity
- Qual Device SN74LVC1T45DRLR is qualified at LEVEL1-260C

- 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 17-Jun-2021

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TMP102AIDRLR	Qual Device: TMP112AIDRLR	Qual Device: TMP302ADRLR
PC	PreCon Level 1	MSL1-260C	3/924/0	-	-
HTOL	High Temp Operating Life, 125C	1000 Hours	1/77/0	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	3/231/0	-	-
UHAST	Unbiased HAST 130C/85%RH	96 Hours	3/231/0	-	-
TC	Temperature Cycle, -65/150C	1000 Cycles	3/231/0	-	-
HTSL	High Temp Storage Bake 150C	1000 Hours	1/77/0	-	-
MSL	Moisture Sensitivity	MSL1-260C	3/36/0	-	-
ED	Electrical Characterization	Per Datasheet Parameters	1/30/0	1/30/0	1/30/0
YLD	Yield Evaluation	(per mfg. Site specification)	Pass	-	-
SD	Solderability	JEDEC JESD22-B102	Pass	-	Pass
WBP	Bond Pull	Wires	3/240/0	-	-
WBS	Ball Bond Shear	Wires	3/240/0	-	-
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	3/pass	-	-

- QBS: Qual By Similarity
- Qual Device TMP112AIDRLR is qualified at LEVEL1-260C
- Qual Device TMP302ADRLR is qualified at LEVEL1-260C
- Qual Device TMP102AIDRLR is qualified at LEVEL1-260C

- 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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