

PCN Number:	20211110000.2		PCN Date:	November 23, 2021												
Title:	Qualification of TI Chengdu as an additional Assembly and Test site for Select Devices															
Customer Contact:	PCN Manager	Dept:	Quality Services													
Proposed 1st Ship Date:	May 23, 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 checked="" 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:																
<p>Texas Instruments Incorporated is announcing the qualification of TI Chengdu as an additional Assembly and Test site for the list of devices shown below. Construction differences between the 2 sites are as follows:</p> <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:																
		UTAC	TI Chengdu													
	Lead finish	Matte Sn	NiPdAu													
	Mount Compound	PZ0035	4207123													
Test coverage, insertions, conditions will remain consistent with current testing.																
Reason for Change:																
Supply continuity																
Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):																
None																
Impact on Environmental Ratings																
<p>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.</p> <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)

G3 = Matte Sn
G4 = NiPdAu

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:

TLIN1024RGYRQ1	TLIN1024RGYTQ1
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Qualification Report

Automotive New Product Qualification Summary (As per AEC-Q100 and JEDEC Guidelines)

Approved 02-Sep-2021

Product Attributes

Attributes	Qual Device: <u>.TLIN2024RGYQ1</u>	Qual Device: <u>TLIN2022DMTQ1</u>
Automotive Grade Level	Grade 1	Grade 1
Operating Temp Range	-40 to +125 C	-40 to +125 C
Product Function	Interface	Interface
Wafer Fab Supplier	RFAB	RFAB
Die Revision	A	A
Assembly Site	CDAT	CDAT
Package Type	VQFN	VSON
Package Designator	RGY	DMT
Ball/Lead Count	24	14

- QBS: Qual By Similarity
- Qual Device TLIN2022DMTQ1 is qualified at LEVEL2-260C
- Qual Device .TLIN2024RGYQ1 is qualified at LEVEL2-260C
- Device .TLIN2024RGYQ1 contains multiple dies

Qualification Results

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

Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Qual Device: <u>.TLIN2024RGYQ1</u>	Qual Device: <u>TLIN2022DMTQ 1</u>
Test Group A – Accelerated Environment Stress Tests								
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	Level 2-260C	No Fails	-
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	96 Hours	3/231/0	-
AC	A3	JEDEC JESD22-A102	3	77	Autoclave 121C	96 Hours	3/231/0	-
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -55/150C	1000 Cycles	1/77/0	-
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -65/150C	500 Cycles	2/154/0	-
TC-WBP	A4	MIL-STD883 Method 2011	1	60	Post Temp Cycle Bond Pull	Wires	1/60/0	-
PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle	1000 Cycles	N/A	N/A
PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle, -40/125C	1000 Cycles	1/45/0	-
HTSL	A6	JEDEC JESD22-A103	1	45	High Temp Storage Bake 150C	1000 Hours	1/45/0	-
Test Group B – Accelerated Lifetime Simulation Tests								
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 125C	1000 Hours	-	3/231/0
EDR	B3	AEC Q100-005	3	77	NVM Endurance, Data Retention, and Operational Life	-	N/A	N/A
Test Group C – Package Assembly Integrity Tests								
WBS	C 1	AEC Q100-001	1	30	Wire Bond Shear Cpk>1.67	Wires	2/60/0	-
WBP	C 2	MIL-STD883 Method 2011	1	30	Bond Pull, Cpk >1.67	Wires	2/60/0	-
SD	C 3	JEDEC JESD22-B102	1	15	Surface Mount Solderability	Pb Free Solder	1/15/0	-
SD	C 3	JEDEC JESD22-B102	1	15	Surface Mount Solderability	Pb Solder	1/15/0	-
PD	C 4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions	Cpk >1.67	3/30/0	-

A1 (PC): Preconditioning:

Performed for THB, Biased HAST, AC, uHAST, TC & PTC samples, as applicable.

Ambient Operating Temperature by Automotive Grade Level:

Grade 0 (or E): -40°C to +150°C

Grade 1 (or Q): -40°C to +125°C

Grade 2 (or T): -40°C to +105°C

Grade 3 (or I) : -40°C to +85°C

E1 (TEST): Electrical test temperatures of Qual samples (High temperature according to Grade level):

Room/Hot/Cold : HTOL, ED

Room/Hot : THB / HAST, TC / PTC, HTSL, ELFR, ESD & LU

Room : AC/uHAST

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

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