PCN Number:	20210713003.2	**PCN Date:**	July 13, 2021
Title:	Qualification of CDAT as an alternate Assembly & Test site for Select Devices		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	Jan 10, 2022	**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:

Texas Instruments Incorporated is announcing the qualification of CDAT as an additional Assembly & Test site for the list of devices shown below. Construction differences between the 2 sites are as follows:

	UTL1	CDAT
Mount Compound	SID#PZ0035	4207123
Lead Finish	Matte Sn	NiPdAu

Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ

Upon expiry of this PCN TI will combine lead free solutions in a single ***standard part number***, for this device. For example; ***TLIN1029DRBRQ1***– can ship with both Matte Sn and NiPdAu.

Example:

- Customer order for 7500 units of TLIN1029DRBRQ1 with 2500 units SPQ (Standard Pack Quantity per Reel).

- TI can satisfy the above order in one of the following ways.
  - I. 3 Reels of NiPdAu finish.
  - II. 3 Reels of Matte Sn finish
  - III. 2 Reels of Matte Sn and 1 reel of NiPdAu finish.
  - IV. 2 Reels of NiPdAu and 1 reel of Matte Sn finish.

Reason for Change:

Supply continuity

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 (23L)	Assembly City

UTL1	NSE	THA	Bangkok
CDAT	**CDA**	**CHN**	**Chengdu**

Sample product shipping label (not actual product label)

Product Affected:			
TLIN1029DRBRQ1	TLIN1029MDRBRQ1	TLIN2029DRBRQ1	TLIN2029DRBTQ1
TLIN1029DRBTQ1			

TEXAS INSTRUMENTS

TI Information
Selective Disclosure

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

TLIN2027DRBQ1 (Q100H, Grade 1, -40/125C)
Approved 02-Nov-2020

Product Attributes

Attributes	Qual Device: TLIN2027DRBRQ1	QBS Process Reference: TLIN2029DQ1
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	B1	B
Assembly Site	CDAT	ASESH
Package Type	QFN	SOIC
Package Designator	DRB	D
Ball/Lead Count	8	8

- QBS: Qual By Similarity
- Qual Device .TLIN2027DRBRQ1 is qualified at LEVEL2-260C

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: TLIN2027DRBRQ1	QBS Process Reference: TLIN2029DQ1
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, -65/150C 500 Cycles	Wires	1/60/0	-
	PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle	1000 Cycles	N/A	-
	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	-
	HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 140C	480 Hours	-	3/231/0
	ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate, 125C	48 Hours	-	3/2400/1 (1)
	EDR	B3	AEC Q100-005	3	77	NVM Endurance, Data Retention, and Operational Life	-	N/A	-
Test Group C – Package Assembly Integrity Tests									
	WBS	C1	AEC Q100-001	1	30	Wire Bond Shear, Cpk>1.67	Wires	3/90/0	-
	WBP	C2	MIL-STD883 Method 2011	1	30	Bond Pull, Cpk>1.67	Wires	3/90/0	-
	SD	C3	JEDEC JESD22-B102	1	15	Surface Mount Solderability	Pb Free Solder	1/15/0	-
	SD	C3	JEDEC JESD22-B102	1	15	Surface Mount Solderability	Pb Solder	1/15/0	-
	PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions	Cpk>1.67	3/30/0	-

Test Group D – Die Fabrication Reliability Tests									
	EM	D1	JESD61	-	-	Electromigration	-	Completed Per Process Technology Requirements	-
	TDDB	D2	JESD35	-	-	Time Dependant Dielectric Breakdown	-	Completed Per Process Technology Requirements	-
	HCI	D3	JESD60 & 28	-	-	Hot Injection Carrier	-	Completed Per Process Technology Requirements	-
	NBTI	D4	-	-	-	Negative Bias Temperature Instability	-	Completed Per Process Technology Requirements	-
	SM	D5	-	-	-	Stress Migration	-	Completed Per Process Technology Requirements	-
Test Group E – Electrical Verification Tests									
	HBM	E2	AEC Q100-002	1	3	ESD - HBM (All Pins)	4000 V	1/3/0	-
	HBM	E2	AEC Q100-002	1	3	ESD - HBM (Pins 6,7)	9000 V	1/3/0	-
	CDM	E3	AEC Q100-011	1	3	ESD - CDM	1500 V	1/3/0	-
	LU	E4	AEC Q100-004	1	6	Latch-up	Per AEC Q100-004	1/6/0	-
	ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67	3/90/0	-

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

Notes/ Comments:
(1) EOS. QEM-EVAL-1710-00385. Discounted

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