12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20240930008.2
Qualify TI CDAT as an additional Assembly & Test site for select devices
Change Notification / Sample Request

Date: October 01, 2024
To: MOUSER PCN

Dear Customer:

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.

Texas Instruments requires acknowledgement of 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 samples or additional data are required, requests must be received within **30 days** of this notification.

The changes discussed within this PCN will not take effect any earlier than the proposed first ship date 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 or to provide acknowledgement of this PCN, you may contact your local Field Sales Representative or the Change Management team.

For sample requests or sample related questions, contact your local Field Sales Representative.

Sincerely,

Change Management Team
SC Business Services

20240930008.2
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**,** you have recently purchased these devices**.** The corresponding customer part number is also listed, if available.

DEVICE	CUSTOMER PART NUMBER
LP877021RHBRQ1	NULL

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

PCN Number:	20240930008.2	**PCN Date:**	October 01, 2024
Title:	Qualify TI CDAT as an additional Assembly & Test site for select devices		
Customer Contact:	Change Management team	**Dept:**	Quality Services
Proposed 1st Ship Date:	March 30, 2025	**Estimated Sample Availability:**	October 31, 2024

***Sample requests received after** October 31, 2024 **will not be supported.**

Change Type:

☒	Assembly Site	☐	Design	☐	Wafer Bump Material
☐	Assembly Process	☐	Data Sheet	☐	Wafer Bump Process
☒	Assembly Materials	☐	Part number change	☐	Wafer Fab Site
☐	Mechanical Specification	☒	Test Site	☐	Wafer Fab Material
☒	Packing/Shipping/Labeling	☐	Test Process	☐	Wafer Fab Process

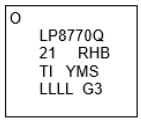
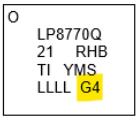
PCN Details

Description of Change:

Texas Instruments is pleased to announce the qualification of TI CDAT as an additional Assembly & Test site for the list of devices shown below. Material differences between sites are as follows.

	UTAC	TI CDAT
Mount compound	PZ0035	4207123
Lead finish	Matte Sn	NiPdAu

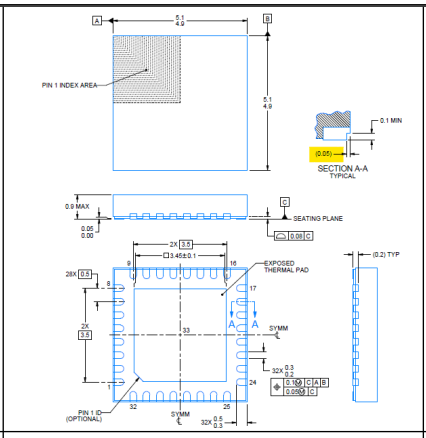
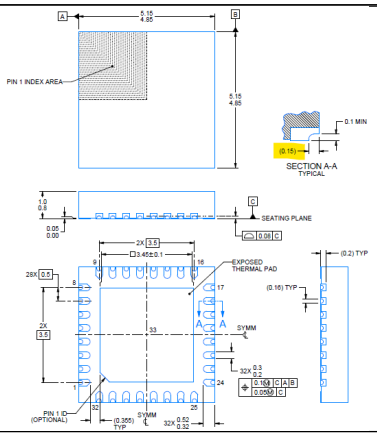
Marking Differences:

	UTAC	TI CDAT
RHB Package	 O = PIN 1 INDICATOR TI = TI LETTERS YM = YEAR MONTH DATE CODE S = ASSEMBLY SITE CODE LLLL = ASSEMBLY LOT CODE	 O = PIN 1 INDICATOR TI = TI LETTERS YM = YEAR MONTH DATE CODE S = ASSEMBLY SITE CODE LLLL = ASSEMBLY LOT CODE
ECAT	G3	G4

With the advent of CDAT Assembly, there will be minor package outline dimension differences as follows:

Package Outline Drawing Differences:

	UTAC	TI CDAT

RHB Package Drawing		
Wettable Flank design	Step Cut	Dimple

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

Upon expiry of this PCN, there will be a transition period where TI will combine lead free solutions in a single ***standard part number*** For example; ***LP877021RHBRQ1***– can ship with both Matte Sn and NiPdAu.
Example:

- Customer order for 7500 units of LM25183QNGURQ1 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:

Continuity of supply.

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
☒ No Change	☒ No Change	☒ No Change	☒ No Change

Changes to product identification resulting from this PCN:

Assembly Site

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

Sample product shipping label (not actual product label)

Product Affected:

LP877021RHBRQ1	LP87702QRHBRQ1
LP87702LRHBRQ1	LP87702YRHBRQ1

Qualification Report

Automotive Change Qualification Summary
(As per AEC-Q100 Rev. H and JEDEC Guidelines)
Approve Date 09-June-2023

Product Attributes

Attributes	Qual Device: LP87702DRHBRQ1	Process QBS Reference: LP87702ARHBRQ1	Process, Package QBS Reference: LM2775QDSGRQ1	Package QBS Reference: TPS92682QRHBRQ1
Automotive Grade Level	Grade 1	Grade 1	Grade 1	Grade 1
Operating Temp Range (C)	-40 to 125	-40 to 125	-40 to 125	-40 to 125
Product Function	Power Management	Power Management	Power Management	Power Management
Wafer Fab Supplier	RFAB,DMOS6	DMOS6	RFAB	RFAB
Assembly Site	CDAT	UTL1	CDAT	CDAT
Package Group	QFN	QFN	QFN	QFN
Package Designator	RHB	RHB	DSG	RHB
Pin Count	32	32	8	32

QBS: Qual By Similarity
Qual Device LP87702DRHBRQ1 is qualified at MSL2 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: LP87702DRHBRQ1	QBS Reference: LP87702ARHBRQ1	Process, Package QBS Reference: LM2775QDSGRQ1	Package QBS Reference: TPS92682QRHBRQ1
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL2 260C	-	QBS(1)	-	3/PASS	-
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL3 260C	-	-	-	-	3/PASS
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	QBS(1)	-	3/231/0	3/231/0
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Autoclave	121C/15psig	96 Hours	QBS(1)	-	3/231/0	3/231/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	QBS(1)	-	3/231/0	3/231/0
PTC	A5	JEDEC JESD22-A105	1	45	PTC	-40/125C	1000 Cycles	-	-	1/45/0	-
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	150C	1000 Hours	QBS(1)	-	-	3/135/0
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	175C	500 Hours	QBS(1)	-	3/135/0	-
Test Group B - Accelerated Lifetime Simulation Tests											
HTOL	B1	JEDEC JESD22-A108	1	77	Life Test	125C	1000 Hours	QBS(2)	3/231/0	3/231/0	-
HTOL	B1	JEDEC JESD22-A108	1	77	Life Test	150C	324 Hours	-	-	-	1/77/0
ELFR	B2	AEC Q100-008	1	77	Early Life Failure Rate	125C	48 Hours	QBS(2)	3/2400/0	-	-
Test Group C - Package Assembly Integrity Tests											
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	1/30/0	-	3/90/0	3/90/0
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	1/30/0	-	3/90/0	3/90/0
SD	C3	JEDEC J-STD-002	1	15	PB Solderability	>95% Lead Coverage	-	QBS(1)	-	1/15/0	3/44/0
SD	C3	JEDEC J-STD-002	1	15	PB-Free Solderability	>95% Lead Coverage	-	QBS(1)	-	1/15/0	3/44/0
PD	C4	JEDEC JESD22-B100 and B108	1	10	Physical Dimensions	Cpk>1.67	-	1/10/0	-	-	3/30/0
Test Group D - Die Fabrication Reliability Tests											
EM	D1	JESD61	-	-	Electromigration	-	-	Completed Per Process Technology Requirements		Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
TDDB	D2	JESD35	-	-	Time Dependent Dielectric Breakdown	-	-	Completed Per Process Technology Requirements		Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
HCI	D3	JESD60 & 28	-	-	Hot Carrier Injection	-	-	Completed Per Process Technology Requirements		Completed Per Process Technology Requirements	Completed Per Process Technology Requirements

NBTI	D4	-	-	-	Negative Bias Temperature Instability	-	-	Completed Per Process Technology Requirements		Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
SM	D5	-	-	-	Stress Migration	-	-	Completed Per Process Technology Requirements		Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
Test Group E - Electrical Verification Tests											
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	1/30/0	-	-	-

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
Ambient Operating Temperature by Automotive Grade Level:
Grade 0 (or E): -40C to +150C
Grade 1 (or Q): -40C to +125C
Grade 2 (or T): -40C to +105C
Grade 3 (or I) : -40C to +85C
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
Quality and Environmental data is available at TI's external Web site: http://www.ti.com/
TI Qualification ID: R-CHG-2209-077
QBS (1) - Package QBS to LM2775QDSGRQ1 and TPS92682QRHB with same package attributes. LM2775QDSGRQ1 and TPS92682QRHB have been Q006 tested.
QBS (2) - Process QBS to LP87702ARHBQ1 and LM2775QDSGRQ1 with same silicon attributes

ZVEI ID: SEM-TF-01, SEM-PA-18, SEM-PA-05, SEM-PA-07, SEM-PA-03

For questions regarding this notice, e-mails can be sent to the Change Management team or your local Field Sales Representative.

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