



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

**PCN# 20240320001.2A**  
**Qualification of TI CDAT as an additional Assembly & Test site**  
**for select devices**  
**Change Notification / Sample Request**

**Date:** April 16, 2024  
**To:** MOUSER PCN

Dear Customer:

**Revision A** is to include a lead finish & pin1 marking change that were not included on the original PCN notification.

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 and approval of this 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

**20240320001.2A**  
**Attachment: 1**

**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.

<b>DEVICE</b>	<b>CUSTOMER PART NUMBER</b>
LM74700QDBVRQ1	NULL
LM74700QDBVTQ1	NULL

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

<b>PCN Number:</b>	20240320001.2A		<b>PCN Date:</b>	April 16, 2024
<b>Title:</b>	Qualification of TI CDAT as an additional Assembly & Test site for select devices			
<b>Customer Contact:</b>	Change Management team	<b>Dept:</b>	Quality Services	
<b>Proposed 1<sup>st</sup> Ship Date:</b>	October 13, 2024	<b>Sample requests accepted until:</b>	May 16, 2024*	
*Sample requests received after May 16, 2024 will not be supported.				
<b>Change Type:</b>				
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change	<input type="checkbox"/>
<input type="checkbox"/>	Mechanical Specification	<input checked="" type="checkbox"/>	Test Site	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<input type="checkbox"/>
<b>PCN Details</b>				
<b>Description of Change:</b>				
<b>Revision A</b> is to announce the addition of lead finish & Pin 1 ID marking change that was not included on the original PCN notification.				
Texas Instruments is pleased to announce the qualification of TI CDAT as an additional Assembly & test site for the devices listed below.				
Construction differences are as follows:				
	<b>UTAC</b>	<b>TI CDAT</b>		
Wire diam/type	1.0mil Au	0.96mil Cu		
Mount compound	PZ0068	4229877		
Mold compound	CZ0096	4222198		
Lead finish	NiPdAu	Matte Sn		
Pin 1 ID marking	Stripe	Dot		
Upon expiry of this PCN, there will be a transition period where TI will combine lead free solutions in a single <u>standard part number</u> . For example; <a href="#">LM74700QDBVRQ1</a> – can ship with both Matte Sn and NiPdAu.				
Example:				
<ul style="list-style-type: none"> <li>– Customer order for 7500 units of LM74700QDBVRQ1 with 2500 units SPQ (Standard Pack Quantity per Reel).</li> <li>– TI can satisfy the above order in one of the following ways. <ul style="list-style-type: none"> <li>I. 3 Reels of NiPdAu finish.</li> <li>II. 3 Reels of Matte Sn finish</li> <li>III. 2 Reels of Matte Sn and 1 reel of NiPdAu finish.</li> <li>IV. 2 Reels of NiPdAu and 1 reel of Matte Sn finish.</li> </ul> </li> </ul>				
Qual details are provided in the Qual Data Section.				
<b>Reason for Change:</b>				
Continuity of Supply				
<ol style="list-style-type: none"> <li>1) To align with world technology trends and use wiring with enhanced mechanical and electrical properties</li> <li>2) Maximize flexibility within our Assembly/Test production sites.</li> <li>3) Cu is easier to obtain and stock</li> </ol>				
<b>Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):</b>				
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

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

Sample product shipping label (not actual product label)

 <b>TEXAS INSTRUMENTS</b> MADE IN: Malaysia 2DC: 2Q:			(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				
<table border="1"> <tr> <td>MSL 2 /260C/1 YEAR</td> <td>SEAL DT</td> </tr> <tr> <td>MSL 1 /235C/UNLIM</td> <td>03/29/04</td> </tr> </table>	MSL 2 /260C/1 YEAR	SEAL DT	MSL 1 /235C/UNLIM	03/29/04			
MSL 2 /260C/1 YEAR	SEAL DT						
MSL 1 /235C/UNLIM	03/29/04						
OPT: ITEM: 39 <b>LBL: 5A (L)T0:1750</b>							

## Product Affected:

LM74700QDBVRQ1	LM74700QDBVTQ1
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## Qualification Report

Automotive Qualification Summary  
 (As per AEC-Q100 Rev. H and JEDEC Guidelines)  
 Approve Date 05-March-2024

### Product Attributes

Attributes	Qual Device: <u>LM74700QDBVRQ1</u>	QBS Process, Product Reference: <u>LM74700QDBVRQ1</u>
Automotive Grade Level	Grade 1	Grade 1
Operating Temp Range (C)	-40 to 125	-40 to 125
Product Function	Power Management	Power Management
Wafer Fab Supplier	RFAB	RFAB
Assembly Site	CDAT	UTL2
Package Group	SOT	SOT
Package Designator	DBV	DBV
Pin Count	6	6

QBS: Qual By Similarity

Qual Device LM74700QDBVRQ1 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: LM74700QDBVRQ1	QBS Process, Product Reference: LM74700QDBVRQ1
<b>Test Group A - Accelerated Environment Stress Tests</b>									
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL2 260C	-	0 Fails	0 Fails
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	3/231/0	3/231/0
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Autoclave	121C/15psig	96 Hours	-	3/231/0
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Unbiased HAST	130C/85%RH	96 Hours	3/231/0	-
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	3/231/0	3/231/0
TC-BP	A4	MIL-STD883 Method 2011	1	5	Post Temp Cycle Bond Pull	-	-	1/5/0	1/5/0
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	150C	1000 Hours	3/135/0	-
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	175C	500 Hours	-	1/45/0
<b>Test Group B - Accelerated Lifetime Simulation Tests</b>									
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	150C	300 Hours	1/77/0	3/231/0
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate	150C	24 Hours	-	3/2400/0
<b>Test Group C - Package Assembly Integrity Tests</b>									
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	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	3/90/0	3/90/0
SD	C3	JEDEC J-STD-002	1	15	PB Solderability	>95% Lead Coverage	-	1/15/0	1/15/0
SD	C3	JEDEC J-STD-002	1	15	PB-Free Solderability	>95% Lead Coverage	-	1/15/0	1/15/0
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions	Cpk>1.67	-	3/30/0	3/30/0
<b>Test Group D - Die Fabrication Reliability Tests</b>									
EM	D1	JESD61	-	-	Electromigration	-	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
TDDDB	D2	JESD35	-	-	Time Dependent Dielectric Breakdown	-	-	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
BTI	D4	-	-	-	Bias Temperature Instability	-	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
SM	D5	-	-	-	Stress Migration	-	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
<b>Test Group E - Electrical Verification Tests</b>									
ESD	E2	AEC Q100-002	1	3	ESD HBM	-	2000 Volts	-	1/3/0
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	500 Volts	-	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 Room, hot, and cold	-	1/30/0	3/90/0

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/>

## **Qualification Report**

### Automotive Qualification Summary (As per AEC-Q006 and JEDEC Guidelines) Approve Date 05-March-2024

#### **Product Attributes**

Attributes	Qual Device: <u>LM74700QDBVRQ1</u>
<b>Automotive Grade Level</b>	Grade 1
<b>Operating Temp Range (C)</b>	-40 to 125
<b>Product Function</b>	Power Management
<b>Wafer Fab Supplier</b>	RFAB
<b>Assembly Site</b>	CDAT
<b>Package Group</b>	SOT
<b>Package Designator</b>	DBV
<b>Pin Count</b>	6

QBS: Qual By Similarity

Qual Device LM74700QDBVRQ1 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: LM74700QDBVRQ1
<b>Test Group A - Accelerated Environment Stress Tests</b>								
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL2 260C	-	3/639/0
PC	A1.1	-	3	22	SAM Precon Pre	Review for delamination	-	3/66/0
PC	A1.2	-	3	22	SAM Precon Post	Review for delamination	-	3/66/0
HAST	A2.1	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	3/231/0
HAST	A2.1.2	-	3	1	Cross Section, post bHAST, 1X	Post stress cross section	Completed	3/3/0
HAST	A2.1.3	-	3	3	Wire Bond Shear, post bHAST, 1X	Post stress	-	3/9/0
HAST	A2.1.4	-	3	3	Bond Pull over Stitch, post bHAST, 1X	Post stress	-	3/9/0
HAST	A2.1.5	-	3	3	Bond Pull over Ball, post bHAST, 1X	Post stress	-	3/9/0
HAST	A2.2	JEDEC JESD22-A110	3	70	Biased HAST	130C/85%RH	192 Hours	3/231/0
HAST	A2.2.1	-	3	22	SAM Analysis, post bHAST 2X	Review for delamination	Completed	3/66/0
HAST	A2.2.2	-	3	1	Cross Section, post bHAST, 2X	Post stress cross section	Completed	3/3/0
HAST	A2.2.3	-	3	3	Wire Bond Shear, post bHAST, 2X	Post stress	-	3/9/0
HAST	A2.2.4	-	3	3	Bond Pull over Stitch, post bHAST, 2X	Post stress	-	3/9/0
HAST	A2.2.5	-	3	3	Bond Pull over Ball, post bHAST, 2X	Post stress	-	3/9/0
TC	A4.1	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	3/231/0
TC	A4.1.1	-	3	22	SAM Analysis, post TC 1X	Review for delamination	Completed	3/66/0
TC	A4.1.2	-	3	1	Cross Section, post TC, 1X	Post stress cross section	Completed	3/3/0
TC	A4.1.3	-	3	3	Wire Bond Shear, post TC, 1X	Post stress	-	3/9/0
TC	A4.1.4	-	3	3	Bond Pull over Stitch, post TC, 1X	Post stress	-	3/9/0
TC	A4.1.5	-	3	3	Bond Pull over Ball, post TC, 1X	Post stress	-	3/9/0
TC	A4.2	JEDEC JESD22-A104 and Appendix 3	3	70	Temperature Cycle	-65C/150C	1000 Cycles	3/231/0
TC	A4.2.1	-	3	22	SAM Analysis, post TC, 2X	Review for delamination	Completed	3/66/0
TC	A4.2.2	-	3	1	Cross Section, post TC, 2X	Post stress cross section	Completed	3/3/0
TC	A4.2.3	-	3	3	Wire Bond Shear, post TC, 2X	Post stress	-	3/9/0
TC	A4.2.4	-	3	3	Bond Pull over Stitch, post TC, 2X	Post stress	-	3/9/0
TC	A4.2.5	-	3	3	Bond Pull over Ball, post TC, 2X	Post stress	-	3/9/0
HTSL	A6.1	JEDEC JESD22-A103	3	45	High Temperature Storage Life	150C	1000 Hours	3/135/0
HTSL	A6.1.1	-	3	1	Cross Section, post HTSL, 1X	Post stress cross section	Completed	3/3/0
HTSL	A6.2	JEDEC JESD22-A103	3	44	High Temperature Storage Life	150C	2000 Hours	3/135/0
HTSL	A6.2.1	-	3	1	Cross Section, post HTSL, 2X	Post stress cross section	Completed	3/3/0
<b>Test Group C - Package Assembly Integrity Tests</b>								
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	3/90/0
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	3/90/0

Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable

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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

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Quality and Environmental data is available at TI's external Web site: <http://www.ti.com/>

ZVEI ID reference: SEM-PA-11, SEM-PA-07, SEM-PA-08, SEM-PA-18, SEM-PA-13, SEM-PA-05, SEM-TF-01

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

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