



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN#20250608003.2

**Qualification of CDAT as an additional Assembly/Test site for the Select Devices
Change Notification / Sample Request**

Date: June 09, 2025

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 **60** days of the date of this notice. Lack of acknowledgement of this notice within 60 days constitutes acceptance and approval of this change. If samples or additional data are required, requests must be received within **60 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

20250608003.2**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.

DEVICE	CUSTOMER PART NUMBER
OPA320AQDBVTQ1	OPA320AQDBVTQ1
OPA320AQDBVRQ1	OPA320AQDBVRQ1
DRV5015A2EDBZRQ1	DRV5015A2EDBZRQ1
DRV5015A1EDBZRQ1	DRV5015A1EDBZRQ1
DRV5021A3EDBZRQ1	NULL

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

PCN Number:	PCN# 20250608003.2			PCN Date:	June 09, 2025																
Title:	Qualification of CDAT as an additional Assembly/Test site for select devices																				
Customer Contact:	Change Management Team		Dept:	Quality Services																	
Proposed 1st Ship Date:	December 06, 2025		Sample requests accepted until:	August 08, 2025*																	
*Sample requests received after August 08, 2025 will not be supported.																					
Change Type:	<input checked="" type="checkbox"/> Assembly Site <input type="checkbox"/> Design <input type="checkbox"/> Wafer Bump Material <input checked="" type="checkbox"/> Assembly Process <input type="checkbox"/> Data Sheet <input type="checkbox"/> Wafer Bump Process <input checked="" type="checkbox"/> Assembly Materials <input type="checkbox"/> Part number change <input type="checkbox"/> Wafer Fab Site <input type="checkbox"/> Mechanical Specification <input checked="" type="checkbox"/> Test Site <input type="checkbox"/> Wafer Fab Material <input checked="" type="checkbox"/> Packing/Shipping/Labeling <input type="checkbox"/> Test Process <input type="checkbox"/> Wafer Fab Process																				
PCN Details																					
Description of Change:																					
<p>Texas Instruments Incorporated is announcing the qualification of CDAT as an additional Assembly/Test site for the devices listed below. Construction differences are as follows:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">TFME</th> <th style="text-align: center;">CDAT</th> </tr> </thead> <tbody> <tr> <td>Mount Compound</td> <td>SID# A-03 4207123 4226215</td> </tr> <tr> <td>Bond wire diam/material</td> <td>0.8mil Au, 1.0mil Au 0.8mil Cu</td> </tr> <tr> <td>Mold Compound</td> <td>SID#R-27 SID#450179 4222198</td> </tr> <tr> <td>Lead finish</td> <td>NiPdAu, Matte Sn Matte Sn</td> </tr> <tr> <td>Wafer thickness</td> <td>7.5mil 6.0mil</td> </tr> <tr> <td>MSL level</td> <td>1, 2 1</td> </tr> <tr> <td>Final Test Site</td> <td>TFME CDAT</td> </tr> </tbody> </table>						TFME	CDAT	Mount Compound	SID# A-03 4207123 4226215	Bond wire diam/material	0.8mil Au, 1.0mil Au 0.8mil Cu	Mold Compound	SID#R-27 SID#450179 4222198	Lead finish	NiPdAu, Matte Sn Matte Sn	Wafer thickness	7.5mil 6.0mil	MSL level	1, 2 1	Final Test Site	TFME CDAT
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MSL level	1, 2 1																				
Final Test Site	TFME CDAT																				
<p>Upon expiry of this PCN, TI will combine lead finish solutions in a single standard part number. For example, a customer order for 7500 units of a specific TI part number with 2500 units SPQ (Standard Pack Quantity per reel) may be fulfilled in the following ways:</p> <ul style="list-style-type: none"> • 3 reels of NiPdAu finish • 3 reels of Matte Sn finish • 2 reels of Matte Sn and 1 reel of NiPdAu finish • 2 reels of NiPdAu and 1 reel of Matte Sn finish 																					
<p>Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ</p>																					
<p>Qual details are provided in the Qual Data Section.</p>																					
Reason for Change:																					
Supply continuity																					
Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):																					
None																					

Impact on Environmental Ratings

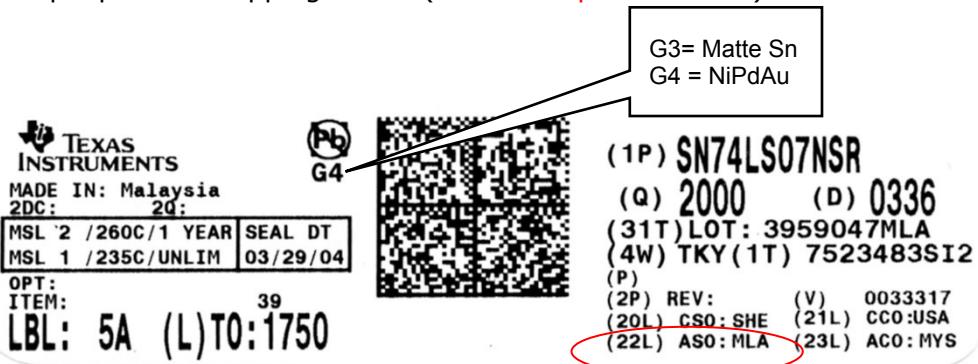
Checked boxes indicate the status of environmental ratings following implementation of this change. If below boxes are checked, there are no changes to the associated environmental ratings.

RoHS	REACH	Green Status	IEC 62474
<input checked="" type="checkbox"/> No Change			

Changes to product identification resulting from this PCN:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
TFME	NFM	CHN	Economic Development Zone
CDAT	CDA	CHN	Chengdu

Sample product shipping label (not actual product label)



Product Affected:

DRV5015A1EDBZRQ1	DRV5021A1EDBZRQ1	OPA320AQDBVRQ1*
DRV5015A1EDBZRQ1.A	DRV5021A1EDBZRQ1.A	OPA320AQDBVRQ1.B
DRV5015A2EDBZRQ1	DRV5021A3EDBZRQ1	OPA320AQDBVTQ1*
DRV5015A2EDBZRQ1.A	DRV5021A3EDBZRQ1.A	OPA320AQDBVTQ1.B

* G4 part numbers are available and will remain on NiPdAu flows. This PCN does not apply to existing G4 materials. Please visit TI's [labeling and symbolization](#) page for more information on material designators

**Automotive Qualification Summary
(As per AEC-Q100 Rev. J and JEDEC Guidelines)**

Approve Date 26-March-2025

Product Attributes

Attributes	Qual Device: <u>OPA320AQDBVRQ1</u>	QBS Process Reference: <u>INA215AQDCKRQ1</u>	QBS Package Reference: <u>TPS3840PH30DBVRQ1</u>	QBS Package Reference: <u>LM74703QDDFRQ1</u>	QBS Package Reference: <u>TPS3838E18QDBVRCT</u>
Automotive Grade Level	Grade 1	Grade 1	Grade 1	Grade 1	Grade 1
Operating Temp Range (C)	-40 to 125	-40 to 125	-40 to 125	-40 to 125	-40 to 125
Product Function	Signal Chain	Signal Chain	Power Management	Power Management	Power Management
Wafer Fab Supplier	AIZU	AIZU	RFAB	RFAB	CFAB
Assembly Site	CDAT	TFME	CDAT	CDAT	CDAT
Package Group	SOT	SOT	SOT	SOT	SOT
Package Designator	DBV	DCK	DBV	DDF	DBV
Pin Count	5	6	5	8	5

QBS: Qual By Similarity, also known as Generic Data

Qual Device OPA320AQDBVRQ1 is qualified at MSL1 260C

Per AEC-Q100J A1.3: The PCN devices are categorized as a qualification family and use generic data that has been qualified for the critical attributes in Die sizes, Package Type, Assembly Process and Site

Note 1: Qual Device and affected devices in PCN have justification to use Package QBS references for Group A and Group C tests based on AEC-100J Appendix 1 A1.3 assembly site and package attributes were qualified.

Note 2: Qual Device and affected devices in PCN have justification to use Process and Package QBS references for Group B tests based on AEC-100J Appendix 1 A1.3 fab, assembly site and package attributes were qualified.

Note 3: Other devices have passed HBM/CDM/LU with the final wafer/backgrind thickness. TI will not re-run HBM/CDM/LU for this change since backgrind removes bulk silicon and does not affect the active area of die.

HBM/CDM/LU purpose is to test the active area of die, die circuit design and/or wafer fab defects that would result damage to dielectrics, junctions, metal.

Note 4: ED cannot use Generic data per AEC-Q100J but there is representation of passing Electrical Distributions with the same assembly site and package attributes in TPS3840PH30DBVRQ1, LM74703QDDFRQ1 and TPS3838E18QDBVRCT

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: OPA320AQDBVRQ1	QBS Process Reference: INA215AQDCRQ1	QBS Package Reference: TPS3840PH30DBVRQ1	QBS Package Reference: LM74703QDDFRQ1	QBS Package Reference: TPS3838E18QDBVRCT
Test Group A - Accelerated Environment Stress Tests												
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL1 260C	-	Note 1	-	3/Pass	3/Pass	3/Pass
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	Note 1	-	3/231/0	3/231/0	3/231/0
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Autoclave	121C/15psig	96 Hours	Note 1	-	-	-	3/231/0
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Unbiased HAST	130C/85%RH	96 Hours	Note 1	-	3/231/0	3/231/0	-
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	Note 1	-	3/231/0	3/231/0	3/231/0
TC-BP	A4	MIL-STD883 Method 2011	1	5	Post Temp Cycle Bond Pull	-	-	Note 1	-	1/5/0	3/9/0	-
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	150C	1000 Hours	Note 1	-	3/135/0	1/45/0	-
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	175C	500 Hours	Note 1	-	-	-	3/135/0
Test Group B - Accelerated Lifetime Simulation Tests												
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	125C	1000 Hours	Note 2	3/231/0	3/231/0	-	3/231/0
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	150C	300 Hours	Note 2	-	-	1/77/0	-
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate	125C	48 Hours	Note 2	3/2400/0	-	-	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	3/90/0
SD	C3	JEDEC J-STD-002	1	15	PB Solderability	>95% Lead Coverage	-	Note 1	-	1/15/0	1/15/0	-
SD	C3	JEDEC J-STD-002	1	15	PB-Free Solderability	>95% Lead Coverage	-	Note 1	-	1/15/0	1/15/0	1/15/0
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions	Cpk>1.67	-	1/10/0	-	3/30/0	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	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
TDBB	D2	JESD35	-	-	Time Dependent Dielectric Breakdown	-	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	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	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	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	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
Test Group E - Electrical Verification Tests												
ESD	E2	AEC Q100-002	1	3	ESD HBM	-	2000 Volts	Note 3	-	-	1/3/0	1/3/0
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	1000 Volts	Note 3	-	-	-	1/3/0
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	500 Volts	Note 3	-	-	1/3/0	-
LU	E4	AEC Q100-004	1	3	Latch-Up	Per AEC Q100-004	-	Note 3	-	-	1/6/0	1/6/0
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	Note 4	-	3/90/0	3/90/0	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/>

TI Qualification ID: R-CHG-2503-023

Automotive Qualification Summary (As per AEC and JEDEC Guidelines)

Q006 SOT at CDAT

Approve Date 27-March-2025

Product Attributes

Attributes	QBS Package Reference: <u>TPS3840PH30DBVRQ1</u>	QBS Package Reference: <u>LM74703QDDFRQ1</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	CDAT
Package Group	SOT	SOT
Package Designator	DBV	DDF
Pin Count	5	8

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	QBS Reference: TPS3840PH30DBVRQ1	QBS Reference: LM74703QDDFRQ1
Test Group A - Accelerated Environment Stress Tests									
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL1 260C	-	3/Pass	3/Pass
PC	A1.1	-	3	22	SAM Precon Pre	Review for delamination	-	3/66/0	3/66/0
PC	A1.2	-	3	22	SAM Precon Post	Review for delamination	-	3/66/0	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	3/210/0	-
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	-

Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	QBS Reference: TPS3840PH30DBVRQ1	QBS Reference: LM74703QDDFRQ1
TC	A4.1	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	3/231/0	3/231/0
TC	A4.1.1	-	3	22	SAM Analysis, post TC 1X	Review for delamination	Completed	3/66/0	3/66/0
TC	A4.1.2	-	3	1	Cross Section, post TC, 1X	Post stress cross section	Completed	3/3/0	3/3/0
TC	A4.1.3	-	3	3	Wire Bond Shear, post TC, 1X	Post stress	-	3/9/0	3/9/0
TC	A4.1.4	-	3	3	Bond Pull over Stitch, post TC, 1X	Post stress	-	3/9/0	3/9/0
TC	A4.1.5	-	3	3	Bond Pull over Ball, post TC, 1X	Post stress	-	3/9/0	3/9/0
TC	A4.2	JEDEC JESD22-A104 and Appendix 3	3	70	Temperature Cycle	-65C/150C	1000 Cycles	3/210/0	3/210/0
TC	A4.2.1	-	3	22	SAM Analysis, post TC, 2X	Review for delamination	Completed	3/66/0	3/66/0
TC	A4.2.2	-	3	1	Cross Section, post TC, 2X	Post stress cross section	Completed	3/3/0	3/3/0
TC	A4.2.3	-	3	3	Wire Bond Shear, post TC, 2X	Post stress	-	3/9/0	3/9/0
TC	A4.2.4	-	3	3	Bond Pull over Stitch, post TC, 2X	Post stress	-	3/9/0	3/9/0
TC	A4.2.5	-	3	3	Bond Pull over Ball, post TC, 2X	Post stress	-	3/9/0	3/9/0
HTSL	A6.1	JEDEC JESD22-A103	3	45	High Temperature Storage Life	150C	1000 Hours	3/135/0	1/45/0
HTSL	A6.1.1	-	3	1	Cross Section, post HTSL, 1X	Post stress cross section	Completed	3/3/0	1/1/0
HTSL	A6.2	JEDEC JESD22-A103	3	44	High Temperature Storage Life	150C	2000 Hours	3/135/0	1/45/0
HTSL	A6.2	JEDEC JESD22-A103	3	44	High Temperature Storage Life	175C	500 Hours	-	-

HTSL	A6.2.1	-	3	1	Cross Section, post HTSL, 2X	Post stress cross section	Completed	3/3/0	1/1/0
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	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

This report represents AEC-Q006 7.1 Family Data Usage using technology driver and lead products that are most representative of the technology family

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-2503-023

**Automotive New Product Qualification Summary
(As per AEC-Q100 Rev. H and JEDEC Guidelines)**

Approve Date 15-December-2023

Product Attributes

Attributes	Qual Device: <u>DRV5015A2EDBZRQ1</u>	QBS Package Reference: <u>DRV5013ADEDBZRQ1</u> <u>DRV5013FAEDBZRQ1</u>	QBS Process Reference: <u>LDC5072A0PWQ1</u>
Automotive Grade Level	Grade 0	Grade 0	Grade 0
Operating Temp Range (C)	-40 to 150	-40 to 150	-40 to 150
Product Function	Signal Chain	Signal Chain	Signal Chain
Wafer Fab Supplier	RFAB	RFAB	RFAB
Assembly Site	CDAT	CDAT	TAI
Package Group	SOT	SOT	TSSOP
Package Designator	DBZ	DBZ	PW
Pin Count	3	3	16

QBS: Qual By Similarity, also known as Generic Data

Qual Device DRV5015A2EDBZRQ1 is qualified at MSL1 260C

Note 1: Qual Device and affected devices in PCN have justification to use Package QBS references for Group A and Group C tests based on AEC-100J Appendix 1 A1.3 assembly site and package attributes were qualified.

Note 2: Qual Device and affected devices in PCN have justification to use Process QBS references for Group B tests based on AEC-100J Appendix 1 A1.3 assembly site and package attributes were qualified.

Note 3: ED cannot use Generic data per AEC-Q100J but there is representation of passing Electrical Distributions with the same assembly site and package attributes in

DRV5013ADEDBZRQ1

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: DRV5015A2EDBZRQ1	QBS Package Reference: DRV5013ADEDBZRQ1	QBS Process Reference: LDC5072A0PWQ1
Test Group A - Accelerated Environment Stress Tests										
PC	A1	JEDEC J-STD-020 JEDEC JESD22-A113	3	77	Preconditioning	MSL1 260C	-	Note 1	3/Pass	-
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	Note 1	3/231/0	-
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Unbiased HAST	130C/85%RH	96 Hours	Note 1	3/231/0	-
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-55C/150C	1500 Cycles	Note 1	3/231/0	-
TC-BP	A4	MIL-STD883 Method 2011	1	5	Post Temp Cycle Bond Pull	-	-	Note 1	1/5/0	-
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	150C	2000 Hours	Note 1	3/135/0	-
Test Group B - Accelerated Lifetime Simulation Tests										
Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: DRV5015A2EDBZRQ1	QBS Package Reference: DRV5013ADEDBZRQ1	QBS Process Reference: LDC5072A0PWQ1
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	150C	1000 Hours	Note 2	1/77/0	3/231/0
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate	150C	48 Hours	Note 2	-	3/2400/0
EDR	B3	AEC Q100-005	1	77	NVM Endurance, Data Retention, and Op Life	Per QSS-009-018	1 Step	Note 2	-	3/231/0
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	3/30/0	3/90/0	-
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	3/30/0	3/90/0	-
SD	C3	JEDEC J-STD-002	1	15	PB Solderability	>95% Lead Coverage	-	Note 1	1/15/0	-
SD	C3	JEDEC J-STD-002	1	15	PB-Free Solderability	>95% Lead Coverage	-	Note 1	1/15/0	-
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions	Cpk>1.67	-	3/30/0	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

TDBB	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
BTI	D4	-	-	-	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	-	Note 3	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/>

TI Qualification ID: R-CHG-2204-051

**Automotive New Product Qualification Summary
(As per AEC-Q100, AEC-Q006, and JEDEC Guidelines)**

Q006 SOT-23 at CDAT
Approve Date 15-December-2023

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: DRV5013ADEDBZRQ1
Test Group A - Accelerated Environment Stress Tests								
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL1 260C	-	3/Pass
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	3/210/0
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	-55C/150C	1500 Cycles	3/231/0
TC	A4.2	JEDEC JESD22-A104 and Appendix 3	3	70	Temperature Cycle	-55C/150C	3000 Cycles	3/210/0
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	2000 Hours	3/135/0
HTSL	A6.2	JEDEC JESD22-A103	3	44	High Temperature Storage Life	150C	4000 Hours	3/132/0
HTSL	A6.2.1	-	3	1	Cross Section, post HTSL, 2X	Post stress cross section	Completed	3/3/0
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	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

QBS: Qual By Similarity, also known as Generic Data

Qual Device DRV5013ADEDBZRQ1 is qualified at MSL1 260C

This report represents AEC-Q006 7.1 Family Data Usage using technology driver and lead products that are most representative of the technology family.

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TI Qualification ID: R-CHG-2204-051

ZVEI IDs: SEM-PA-05, SEM-PA-07, SEM-PA-08, SEM-PA-11, SEM-PA-18, SEM-PW-03, SEM-PS-02, SEM-TF-01

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