



**12500 TI Boulevard, MS 8640, Dallas, Texas 75243**

**PCN# 20241219001.2**  
**Qualification of TIEM as an additional Assembly & Test site**  
**for select devices**  
**Change Notification / Sample Request**

**Date:** December 19, 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 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

**20241219001.2**

**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.

<b>DEVICE</b>	<b>CUSTOMER PART NUMBER</b>
UCC5350MCQDRQ1	NULL
UCC21330BQDRQ1	NULL

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

<b>PCN Number:</b>	20241219001.2	<b>PCN Date:</b>	December 19, 2024
<b>Title:</b>	Qualification of TIEM 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>	June 17, 2025	<b>Sample requests accepted until:</b>	January 18, 2025*

\*Sample requests received after January 18, 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:

Texas Instruments is pleased to announce the qualification of TIEM as an additional Assembly & Test site for select devices. Assembly differences are as follows:

#### Group 1 device:

	Current A/T site		Additional A/T site
	TITL	TIM	TIEM
Wire diam/type	0.96mil Au	0.96mil Au, 1.0mil Cu	0.8mil Cu
Mold Compound	4209640	4211880	4211880
Marking differences	TI logo, with G4	TI letter, without G4	TI letter, without G4

#### Group 2 device:

	Current A/T site	Additional A/T site
	TIM	TIEM
Marking differences	TI logo, with G4	TI letter, without G4

#### Marking differences sample:



Test coverage, insertions, conditions will remain consistent with current testing.

#### 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.

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

#### **Changes to product identification resulting from this PCN:**

##### **Assembly Site Information:**

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
TI Taiwan	TAI	TWN	Chung Ho, New Taipei City
TI Malaysia	MLA	MYS	Kuala Lumpur
<b>TI Melaka</b>	<b>CU6</b>	<b>MYS</b>	<b>Melaka</b>

##### **Sample Product Shipping Label (not actual product label)**



##### **Group 1 Product Affected:**

UCC5350MCQDRQ1

##### **Group 2 Product Affected:**

UCC21330BQDRQ1

### **Qualification Report**

#### **Automotive Qualification Summary**

#### **(As per AEC-Q100 Rev. J and JEDEC Guidelines)**

Approve Date 11-December-2024

#### **Product Attributes**

Attributes	Qual Device: <u>ISO6721FBQDRQ1</u>	Qual Device: <u>UCC21330BQDRQ1</u>	QBS Process Reference: <u>UCC23513QDWYQ1</u>	QBS Product Reference: <u>UCC21330BQDRQ1</u>
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	Interface	Power Management	Power Management	Power Management
Wafer Fab Supplier	RFAB, RFAB	RFAB, RFAB, RFAB	RFAB, RFAB	RFAB, RFAB, RFAB
Assembly Site	TIEMA	TIEMA	TAI	MLA
Package Group	SOIC	SOIC	SOIC	SOIC
Package Designator	D	D	DWY	D
Pin Count	8	16	6	16

QBS: Qual By Similarity, also known as Generic Data  
 Qual Device ISO6721FBQDRQ1 is qualified at MSL2 260C  
 Qual Device UCC5350MCQDRQ1 is qualified at MSL2 260C  
 Qual Device UCC5350SBQDRQ1 is qualified at MSL2 260C

Qual Device UCC5350SBQDRQ1 is qualified at MSL2 260C  
 Qual Device UCC21330BQDRQ1 is qualified at MSL3 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: ISO6721EBQDRQ1	Qual Device: UCC21330BQDRQ1	QBS Process Reference: UCC23513QDWYQ1	QBS Product Reference: UCC21330BQDRQ1
<b>Test Group A - Accelerated Environment Stress Tests</b>											
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL2 260C	-	No Fails	-	-	-
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL3 260C	-	-	No Fails	-	-
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	-	-
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Autoclave	121C/15psig	96 Hours	1/77/0	3/231/0	-	-
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	1/77/0	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	-	-
<b>Test Group B - Accelerated Lifetime Simulation Tests</b>											
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	125C	1000 Hours	-	-	3/231/0	-
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate	125C	48 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	1/30/0	3/90/0	-	-
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	1/30/0	3/90/0	-	-
SD	C3	JEDEC J-STD-002	1	15	PB-Free Solderability	>95% Lead Coverage	-	-	1/15/0	-	-
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions	Cpk>1.67	-	1/10/0	3/30/0	-	-
<b>Test Group D - Die Fabrication Reliability Tests</b>											
EM	D1	JESD61	-	-	Electromigration	-	-	Completed Per Process Technology Requirements			
TDBB	D2	JESD35	-	-	Time Dependent Dielectric Breakdown	-	-	Completed Per Process Technology Requirements			
HCI	D3	JESD60 & 28	-	-	Hot Carrier Injection	-	-	Completed Per Process Technology Requirements			
BTI	D4	-	-	-	Bias Temperature Instability	-	-	Completed Per Process Technology Requirements			
SM	D5	-	-	-	Stress Migration	-	-	Completed Per Process Technology Requirements			

Test Group E - Electrical Verification Tests												
ESD	E2	AEC Q100-002	1	3	ESD HBM	-	2000 Volts	-	-	1/3/0	1/3/0	
Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device:	Qual Device:	QBS Process Reference:	QBS Product Reference:	
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	500 Volts	-	-	1/3/0	1/3/0	
LU	E4	AEC Q100-004	1	3	Latch-Up	Per AEC Q100-004	-	-	-	1/6/0	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	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>

## Qualification Report

### Automotive Qualification Summary

#### (As per AEC and JEDEC Guidelines)

#### Q006 SOIC at TIEM Approve

Approve Date 11-December-2024

#### 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:
Test Group A - Accelerated Environment Stress Tests								
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL3 260C	-	No Fails
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	-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	3/210/0
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
Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: <b>UCC21330BQDRQ1</b>
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	3/132/0
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

QBS: Qual By Similarity, also known as Generic Data

Qual Device UCC21330BQDRQ1 is qualified at MSL3 260C

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:**

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

ZVEI ID: SEM-PA-18, SEM-PA-08, SEM-PA-11, SEM-PA-13, 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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