



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN#20251015002.2

**Qualification of RFAB as an additional Fab site option,
TIEM-PR as additional wafer Probe site, Die Revision, Datasheet
and MLA as an additional Assembly/Test site option for select devices
Change Notification / Sample Request**

Date: October 15, 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.

TI values customer engagement and feedback related to TI changes. Customers should contact TI if there are questions or concerns regarding a change notification.

Sincerely,

Change Management Team
SC Business Services

20251015002.2
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
LM2903BHQDRQ1	NULL
LM2903BRQPWRQ1	NULL

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

PCN Number:	20251015002.2	PCN Date:	October 15, 2025																				
Title:	Qualification of RFAB as an additional Fab site option, TIEM-PR as additional wafer Probe site, Die Revision, Datasheet and MLA as an additional Assembly/Test site option for select devices																						
Customer Contact:	Change Management Team	Dept:	Quality Services																				
Proposed 1st Ship Date:	April 13, 2026	Sample requests accepted until:	December 14, 2025*																				
*Sample requests received after December 14, 2025 will not be supported.																							
Change Type:																							
<input checked="" type="checkbox"/>	Assembly Site	<input checked="" type="checkbox"/>	Design																				
<input type="checkbox"/>	Assembly Process	<input checked="" type="checkbox"/>	Data Sheet																				
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change																				
<input type="checkbox"/>	Mechanical Specification	<input checked="" type="checkbox"/>	Test Site																				
<input checked="" type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process																				
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Bump Material																				
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Bump Process																				
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	Wafer Fab Site																				
<input type="checkbox"/>		<input checked="" type="checkbox"/>	Wafer Fab Material																				
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	Wafer Fab Process																				
PCN Details																							
Description of Change:																							
Texas Instruments is pleased to announce the qualification of RFAB as an additional Fab site option, TIEM-PR as additional wafer probe site & MLA as an additional Assembly/Test site options for the devices listed below.																							
<table border="1"> <thead> <tr> <th colspan="3">Current Fab Site</th> <th colspan="3">Additional Fab site</th> </tr> <tr> <th>Current Fab Site</th> <th>Process</th> <th>Wafer Diameter</th> <th>Additional Fab site</th> <th>Process</th> <th>Wafer Diameter</th> </tr> </thead> <tbody> <tr> <td>CFAB</td> <td>JI3</td> <td>200mm</td> <td>RFAB</td> <td>TIB</td> <td>300mm</td> </tr> </tbody> </table>						Current Fab Site			Additional Fab site			Current Fab Site	Process	Wafer Diameter	Additional Fab site	Process	Wafer Diameter	CFAB	JI3	200mm	RFAB	TIB	300mm
Current Fab Site			Additional Fab site																				
Current Fab Site	Process	Wafer Diameter	Additional Fab site	Process	Wafer Diameter																		
CFAB	JI3	200mm	RFAB	TIB	300mm																		
The die was also changed as a result of the process change.																							
Wafer probe site																							
<table border="1"> <thead> <tr> <th></th> <th>Current site</th> <th>Additional site</th> </tr> </thead> <tbody> <tr> <td>Wafer probe test site</td> <td>CD-PR</td> <td>TIEM-PR</td> </tr> </tbody> </table>							Current site	Additional site	Wafer probe test site	CD-PR	TIEM-PR												
	Current site	Additional site																					
Wafer probe test site	CD-PR	TIEM-PR																					
Construction differences are as follows:																							
Group 1 device – Wafer fab site, Die rev, BOM																							
<table border="1"> <thead> <tr> <th></th> <th>Current</th> <th>Proposed</th> </tr> </thead> <tbody> <tr> <td>Final wafer thickness</td> <td>10.5mils</td> <td>7.5mils</td> </tr> </tbody> </table>							Current	Proposed	Final wafer thickness	10.5mils	7.5mils												
	Current	Proposed																					
Final wafer thickness	10.5mils	7.5mils																					
Group 2 device – Wafer fab site, Assembly/Test site, Die rev																							
<table border="1"> <thead> <tr> <th></th> <th>Current site</th> <th>Additional site</th> </tr> </thead> <tbody> <tr> <td>Assembly site</td> <td>FMX</td> <td>MLA</td> </tr> <tr> <td>Final wafer thickness</td> <td>10.5mils</td> <td>7.5mils</td> </tr> </tbody> </table>							Current site	Additional site	Assembly site	FMX	MLA	Final wafer thickness	10.5mils	7.5mils									
	Current site	Additional site																					
Assembly site	FMX	MLA																					
Final wafer thickness	10.5mils	7.5mils																					
Group 3 device - Wafer fab site, Assembly/Test site, Die rev																							
<table border="1"> <thead> <tr> <th></th> <th>Current site</th> <th>Additional site</th> </tr> </thead> <tbody> <tr> <td>Assembly site</td> <td>HFTF</td> <td>MLA</td> </tr> <tr> <td>Mount compound</td> <td>A-18</td> <td>4147858</td> </tr> <tr> <td>Mold compound</td> <td>R-30</td> <td>4211880</td> </tr> </tbody> </table>							Current site	Additional site	Assembly site	HFTF	MLA	Mount compound	A-18	4147858	Mold compound	R-30	4211880						
	Current site	Additional site																					
Assembly site	HFTF	MLA																					
Mount compound	A-18	4147858																					
Mold compound	R-30	4211880																					

Marking differences	<div> YMLL {CUST1} O </div>	<div> TI Letter, Mold cavity ID <div> TI YM {CUST1} O (CAV) </div> </div>
---------------------	--	---

The datasheets will be changing as a result of the above mentioned changes. The datasheet change details can be reviewed in the datasheet revision history. The links to the revised datasheets are available in the table below.

 TEXAS INSTRUMENTS	LM2903-Q1, LM2903B-Q1 SLCS141M – MAY 2003 – REVISED DECEMBER 2024
Changes from Revision L (August 2023) to Revision M (December 2024)	Page
• Updated thermal table	5
• Updated Typical Characteristics.....	8
• Updated Functional Block Diagram.....	14

The datasheet number will be changing.

Device Family	Change From:	Change To:
LM2903B-Q1	SLCS141L	SLCS141M

These changes may be reviewed at the datasheet links provided.

<http://www.ti.com/product/LM2903-Q1>

Qual details are provided in the Qual Data Section.

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

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	<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:

Fab Site Information:

Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
CFAB	CU3	CHN	Chengdu
RFAB	RFB	USA	Richardson

Die Rev:

Current	New
Die Rev [2P]	Die Rev [2P]
A	A

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
HFTF	HFT	CHN	Hefei

FMX TI Malaysia	MEX MLA	MEX MYS	Aguascalientes Kuala Lumpur
--------------------	------------	------------	--------------------------------

Sample product shipping label (not actual product label):

Group 1 Product Affected: Wafer fab site, Die rev, BOM			
LM2903BHQPW1	LM2903BRQPW1	LM2903BTQPW1	
Group 2 Product Affected: Wafer fab site, Die rev, Assembly/Test site			
LM2903BHQDR1	LM2903BRQDR1	LM2903BTQDR1	
Group 2 Product Affected: Wafer fab site, Die rev, Assembly/Test site			
LM2903BHQDGKR1	LM2903BRQDGKR1	LM2903BTQDGKR1	

Group 1 Qualification Report

Automotive Qualification Summary

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

Approve Date 23-July-2024

Product Attributes

Attributes	Qual Device:	QBS Package, Process Reference:
	LM2903QPWRQ1	LM2902BQPWRQ1
Automotive Grade Level	Grade 1	Grade 1
Operating Temp Range (C)	-40 to 125	-40 to 125
Product Function	Signal Chain	Signal Chain
Wafer Fab Supplier	RFAB	RFAB
Assembly Site	MLA	MLA
Package Group	TSSOP	TSSOP
Package Designator	PW	PW
Pin Count	8	14

QBS: Qual By Similarity
Qual Device LM2903QPWRQ1 is qualified at MSL1 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: LM2903QPWRQ1	QBS Package, Process Reference: LM2902BQPWRQ1
Test Group A - Accelerated Environment Stress Tests									
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL1 260C	-	1/308/0	3/924/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	1/77/0	3/231/0
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Unbiased HAST	110C/85%RH	264 Hours	-	3/231/0
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Unbiased HAST	130C/85%RH	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	-
TC-BP	A4	MIL-STD883 Method 2011	1	5	Post Temp Cycle Bond Pull	-	-	1/5/0	1/15/0
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	150C	1000 Hours	-	3/231/0
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	175C	500 Hours	1/77/0	-
Test Group B - Accelerated Lifetime Simulation Tests									
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	150C	300 Hours	1/77/0	-
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	150C	408 Hours	-	3/231/0
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate	125C	48 Hours	-	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
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
Test Group D - Die Fabrication Reliability Tests									
EM	D1	JESD61	-	-	Electromigration	-	-	Completed Per Process Technology Requirements	-
Tddb	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	-
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	1500 Volts	1/3/0	-
LU	E4	AEC Q100-004	1	6	Latch-Up	Per AEC Q100-004	-	1/3/0	-
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	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-2310-099

Group 2 Qualification Report Automotive Qualification Summary (As per AEC-Q100 Rev. H and JEDEC Guidelines)

Approve Date 12-JANUARY -2024

Product Attributes

Attributes	Qual Device: LM2903BQDRQ1	QBS Process Reference: LM2902BQPWRQ1	QBS Package, Product Reference: LM2903BQDRQ1	QBS Product Reference: LM2901BQDRQ1
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	Signal Chain	Signal Chain	Signal Chain	Signal Chain
Wafer Fab Supplier	RFAB	RFAB	CFAB	RFAB
Assembly Site	MLA	MLA	MLA	MLA
Package Group	SOIC	TSSOP	SOIC	SOIC
Package Designator	D	PW	D	D
Pin Count	8	14	8	14

QBS: Qual By Similarity

Qual Device LM2903BQDRQ1 is qualified at MSL1 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: LM2903BQDRQ1	QBS Process Reference: LM2902BQPWRQ1	QBS Package, Product Reference: LM2903BQDRQ1	QBS Product Reference: LM2901BQDRQ1
Test Group A - Accelerated Environment Stress Tests											
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL1 260C	-	1/231/0	-	3/924/0	1/30800/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	1/77/0	-	3/231/0	1/77/0
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Unbiased HAST	130C/85%RH	96 Hours	1/77/0	-	3/231/0	1/77/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	1/77/0	-	3/231/0	1/77/0
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	-	-	1/77/0
Test Group B - Accelerated Lifetime Simulation Tests											
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	150C	300 Hours	1/77/0	-	3/231/0	1/77/0
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	150C	408 Hours	-	3/231/0	-	-
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate	125C	48 Hours	-	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	1/30/0
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	1/30/0
SD	C3	JEDEC J-STD-002	1	15	PB Solderability	>95% Lead Coverage	-	1/15/0	-	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	1/15/0
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions	Cpk>1.67	-	1/10/0	-	3/30/0	1/10/0
Test Group D - Die Fabrication Reliability Tests											
EM	D1	JESD61	-	-	Electromigration	-	-	Completed Per Process Technology Requirements	-	-	-
TDDb	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	-	-	-
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	1000 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	-	-	-

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-2309-005

Group 3 Qualification Report

Automotive Qualification Summary

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

Approve Date 08-AUGUST -2024

Product Attributes

Attributes	Qual Device: LM2903QDGKRQ1	QBS Package Reference: LM2903BQDRQ1	QBS Package, Process Reference: LM2901BQDRQ1	QBS Process Reference: MC33063AQDRQ1	QBS Package Reference: LM2903BQDRQ1
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	Signal Chain	Power Management	Signal Chain
Wafer Fab Supplier	RFAB	CFAB	RFAB	RFAB	RFAB
Assembly Site	MLA	MLA	MLA	FMX	MLA
Package Group	VSSOP	SOIC	SOIC	SOIC	SOIC
Package Designator	DGK	D	D	D	D
Pin Count	8	8	14	8	8

QBS: Qual By Similarity

Qual Device LM2903QDGKRQ1 is qualified at MSL1 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: LM2903QDGKRQ1	QBS Package Reference: LM2903BQDRQ1	QBS Package, Process Reference: LM2901BQDRQ1	QBS Process Reference: MC33063AQDRQ1	QBS Package Reference: LM2903BQDRQ1
Test Group A - Accelerated Environment Stress Tests												
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL1 260C	-	1/308/0	3/924/0	1/308/0	-	1/308/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	1/77/0	3/231/0	1/77/0	-	1/77/0
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Unbiased HAST	130C/85%RH	96 Hours	1/77/0	3/231/0	1/77/0	-	1/77/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	1/77/0	3/231/0	1/77/0	-	1/77/0
TC-BP	A4	MIL-STD883 Method 2011	1	5	Post Temp Cycle Bond Pull	-	-	1/5/0	-	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	-	1/77/0	-	1/45/0
Test Group B - Accelerated Lifetime Simulation Tests												
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	125C	1000 Hours	1/77	-	-	3/231/0	-
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	150C	300 Hours	1/77/0	1/77/0	1/77/0	-	1/77/0
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate	125C	48 Hours	-	-	-	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	1/30/0	-	1/30/0

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	1/30/0	-	1/30/0
SD	C3	JEDEC J-STD-002	1	15	PB Solderability	>95% Lead Coverage	-	-	1/15/0	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	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	1/10/0	-	1/10/0
Test Group D - Die Fabrication Reliability Tests												
EM	D1	JESD61	-	-	Electromigration	-	-	Completed Per Process Technology Requirements	-	-	-	-
Tddb	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	-	-	-	-
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	1000 Volts	1/3/0	-	-	-	-
LU	E4	AEC Q100-004	1	6	Latch-Up	Per AEC Q100-004	-	1/3/0	-	-	-	-
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	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-2310-096

ZVEI ID: SEM-DS-02, SEM-DE-01, SEM-DE-03, SEM-DE-02, SEM-PW-13, SEM-PW-02, SEM-PW-09, SEM-PA-07, SEM-PA-11, SEM-PA-13, SEM-PA-18, SEM-TF-01

In performing change qualifications, Texas Instruments follows integrated circuit industry standards in performing defect mechanism analysis and failure mechanism-based accelerated environmental testing to ensure wafer fab process, assembly process and product quality and reliability. As encouraged by these standards, TI uses both product-specific and generic (family) data in qualifying its changes. For devices to be categorized as a 'product qualification family' for generic data purposes, they must share similar product, wafer fab process and

assembly process elements. The applicability of generic data (also known at TI as Qualification by Similarity (QBS)) is determined by the Reliability Engineering function following these industry standards. Generic data is shown in the qualification report in columns titled "QBS Process" (for wafer fab process), "QBS Package" (for assembly process) and "QBS Product" (for product family).

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

IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to TI's Terms of Sale (www.ti.com/legal/termsofsale.html) or other applicable terms available either on ti.com or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products.