

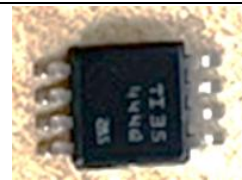


<b>PCN Number:</b>	20231130005.1		<b>PCN Date:</b>	December 05, 2023	
<b>Title:</b>	Qualification of RFAB using qualified Process Technology, Die Revision, Datasheet, and additional Assembly site/BOM options for select devices				
<b>Customer Contact:</b>	Change Management team		<b>Dept:</b>	Quality Services	
<b>Proposed 1<sup>st</sup> Ship Date:</b>	Mar 4, 2024		<b>Sample requests accepted until:</b>	Jan 4, 2024*	
<b>*Sample requests received after January 4, 2024 will not be supported.</b>					
<b>Change Type:</b>					
<input checked="" type="checkbox"/> Assembly Site	<input checked="" type="checkbox"/> Design	<input type="checkbox"/> Wafer Bump Material			
<input checked="" type="checkbox"/> Assembly Process	<input checked="" type="checkbox"/> Data Sheet	<input type="checkbox"/> Wafer Bump Process			
<input checked="" type="checkbox"/> Assembly Materials	<input type="checkbox"/> Part number change	<input checked="" type="checkbox"/> Wafer Fab Site			
<input type="checkbox"/> Mechanical Specification	<input type="checkbox"/> Test Site	<input checked="" type="checkbox"/> Wafer Fab Materials			
<input checked="" type="checkbox"/> Packing/Shipping/Labeling	<input type="checkbox"/> Test Process	<input checked="" type="checkbox"/> Wafer Fab Process			
<b>PCN Details</b>					
<b>Description of Change:</b>					
Texas Instruments is pleased to announce the addition of RFAB using the LBC9 qualified process technology and additional Assembly site (MLA) and BOM options for select devices listed below in the product affected section.					
<b>Current Fab Site</b>			<b>Additional Fab Site</b>		
<b>Current Fab Site</b>	<b>Process</b>	<b>Wafer Diameter</b>	<b>Additional Fab Site</b>	<b>Process</b>	<b>Wafer Diameter</b>
DL-LIN	LBC3S	150 mm	RFAB	LBC9	300 mm
The die was also changed as a result of the process change.					
Construction differences are as follows: (There are no construction differences for Group 1)					
<b>Group 2 BOM table (RFAB/Process migration &amp; MLA as an additional Assembly site (ASESH &amp; UTL2):</b>					
	<b>ASESH</b>		<b>TI Malaysia</b>		
Mold Compound	(SID#EN2000515)		(4211880)		
Mount Compound	(SID#EY1000063)		(4224264)		
Additionally, there will be a marking standardizing effort as follows:					
	<b>Current</b>		<b>Standardized</b>		
D Package Devices	Logo: TI letters & Unitrode logo Pin 1: Stripe & dot		Logo: TI letters Pin 1: dot		
DGN Package devices	Logo: TI logo, Unitrode logo, none Pin 1: dot		Logo: TI letters Pin 1: dimple		
Visual – D package					

Visual – DGN package



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.



**UCC27423, UCC27424, UCC27425**  
SLUS545F – NOVEMBER 2002 – REVISED NOVEMBER 2023

Changes from Revision E (December 2015) to Revision F (November 2023)	Page
• Changed the ESD ratings value.....	5
• Changed the input threshold values, remove VOH, VOL in Electrical Characteristics.....	6
• Updated the position of the waveforms in Figure 6-1.....	7
• Changed Rise Time from ms to ns in Figure 6-14 and Fall Time from ms to ns in Figure 6-15 .....	8
• Changed Figure 6-28 .....	8



**UCC27321, UCC27322, UCC37321, UCC37322**  
SLUS504I – SEPTEMBER 2002 – REVISED NOVEMBER 2023

Changes from Revision H (January 2016) to Revision I (November 2023)	Page
• Deleted P package from Device Information table.....	1
• Deleted P package from Description (continued) section.....	3
• Deleted P package from Pin Configuration and Functions section.....	5
• Changed ESD Ratings from $\pm 2500$ V and $\pm 1500$ V to $\pm 2000$ V and $\pm 1000$ V.....	6
• Changed input threshold voltage values, deleted VOH output high level and VOL output low level, changed output resistance high and output resistance low values and deleted Latch-up protection from Electrical Characteristics.....	7
• Deleted P package data from Power Dissipations Ratings section.....	8
• Changed Figure 7-16 .....	10



**UCC27323, UCC27324, UCC27325, UCC37323, UCC37324, UCC37325**  
SLUS492K – JUNE 2001 – REVISED NOVEMBER 2023

Changes from Revision J (September 2018) to Revision K (November 2023)	Page
• Changed ESD HBM value from 4000 V to 2000 V in ESD Ratings.....	5
• Changed input threshold voltage values, deleted VOH output high level and VOL output low level, changed output resistance high and output resistance low values in Electrical Characteristics.....	6
• Changed Figure 6-4 .....	8

Product Folder	Current Datasheet Number	New Datasheet Number	Link to full datasheet
UCC2742x	SLUS545E	<b>SLUS545F</b>	<a href="http://www.ti.com/product/UCC27423">http://www.ti.com/product/UCC27423</a>
UCC2732x/UCC3732x	SLUS504H	<b>SLUS504I</b>	<a href="http://www.ti.com/product/UCC27321">http://www.ti.com/product/UCC27321</a>
UCCx732x	SLUS492J	<b>SLUS492K</b>	<a href="http://www.ti.com/product/UCC27323">http://www.ti.com/product/UCC27323</a>

Qual details are provided in the Qual Data Section.

#### Reason for Change:

These changes are part of our multiyear plan to transition products from our 150-millimeter and 200-millimeter factories to newer, more efficient manufacturing processes and technologies, underscoring our commitment to product longevity and 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
DL-LIN	DLN	USA	Dallas
<b>RFAB</b>	<b>RFB</b>	<b>USA</b>	<b>Richardson</b>

**Die Rev:****Current****New**

Die Rev [2P]	Die Rev [2P]
A	B

**Assembly Site Information:**

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
FMX	MEX	MEX	Aguascalientes
ASESH	ASH	CHN	Shanghai
<b>MLA</b>	<b>MLA</b>	<b>MYS</b>	<b>Kuala Lumpur</b>

Sample product shipping label (not actual product label)

**Product Affected:****Group 1 Device list (RFAB/Process migration & MLA as an additional Assembly site (Currently FMX):**

UCC27321DR	UCC27325DR	UCC27425DR	UCC37323DR
UCC27322DR	UCC27423DR	UCC37321DR	UCC37324DR
UCC27323DR	UCC27424DR	UCC37322DR	UCC37325DR
UCC27324DR			

**Group 2 Device list (RFAB/Process migration & MLA as an additional Assembly site (Currently ASESH):**

UCC27321DGNR	UCC27325DGNR	UCC27425DGNR	UCC37323DGNR
UCC27322DGNR	UCC27423DGNR	UCC37321DGNR	UCC37324DGNR
UCC27323DGNR	UCC27424DGNR	UCC37322DGNR	UCC37325DGNR
UCC27324DGNR			

For alternate parts with similar or improved performance, please visit the product page on [TI.com](https://www.ti.com)

#### 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: UCC27424QDGNRQ1	Qual Device: UCC27322QDGNRQ1	QBS Package Reference: SN65HVD1040AQDRQ1	QBS Package Reference: UCC27624QDGNRQ1	QBS Product Reference: UCC27424QDRQ1	QBS Process Reference: LM74700QDBVRQ1
Test Group A - Accelerated Environment Stress Tests													
Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: UCC27424QDGNRQ1	Qual Device: UCC27322QDGNRQ1	QBS Package Reference: SN65HVD1040AQDRQ1	QBS Package Reference: UCC27624QDGNRQ1	QBS Product Reference: UCC27424QDRQ1	QBS Process Reference: LM74700QDBVRQ1
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL1 260C	-	-	-	No Fails	No Fails	No Fails	-
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	3/231/0	-	-
ACU/HAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Autoclave	121C/15psig	96 Hours	-	-	-	3/231/0	1/77/0	-
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	-	-	3/231/0	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	3/231/0	-	-
Test Group B - Accelerated Lifetime Simulation Tests													
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	125C	1000 Hours	-	-	-	-	1/77/0	-
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	150C	408 Hours	-	-	-	-	-	2/154/0
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate	150C	24 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	1/30/0	3/90/0	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	1/30/0	3/90/0	3/90/0	1/30/0	-
SD	C3	JEDEC J-STD-002	1	15	PB Solderability	>95% Lead Coverage	-	-	-	1/15/0	-	-	-
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	1/10/0	3/30/0	3/30/0	1/10/0	-
Test Group D - Die Fabrication Reliability Tests													
Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: UCC27424QDGNRQ1	Qual Device: UCC27322QDGNRQ1	QBS Package Reference: SN65HVD1040AQDRQ1	QBS Package Reference: UCC27624QDGNRQ1	QBS Product Reference: UCC27424QDRQ1	QBS Process Reference: LM74700QDBVRQ1
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	Completed Per Process Technology Requirements
TDD8	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	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	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	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	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	-	-	1/3/0	-
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	500 Volts	1/3/0	1/3/0	-	-	1/3/0	-
LU	E4	AEC Q100-004	1	6	Latch-Up	Per AEC Q100-004	-	Device specific data [1]	-	-	-	1/6/0	-
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	1/30/0	-	-	-	-	-
Additional Tests													

- 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

- QBS: Qual By Similarity
- Qual Device UCC27424QDGNRQ1 is qualified at MSL1 260C
- Qual Device UCC27425DGNR is qualified at MSL1 260C
- Qual Device UCC27321DGNR is qualified at MSL1 260C
- Qual Device UCC27322QDGNRQ1 is qualified at MSL1 260C
- Qual Device UCC27324DGNR is qualified at MSL1 260C
- Qual Device UCC27325DGNR is qualified at MSL1 260C

#### 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/HAHAST

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

TI Qualification ID: R-CHG-2109-012

[1] Qual Device: UCC27424QDGNRQ1 and QBS Product Reference: UCC27424QDRQ1 use the same silicon die and bond-out.

#### 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: UCC27424QDRQ1	Qual Device: UCC27425QDRQ1	QBS Reference: SN65HVD1040AQDRQ1	QBS Reference: UCC27624QDRQ1	QBS Reference: LM74700QDBVRQ1	QBS Reference: LM74700QDBVRQ1
Test Group A - Accelerated Environment Stress Tests													
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL1 260C	-	No Fails	-	No Fails	No Fails	-	-
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	1/77/0	-	-
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Autoclave	121C/15psig	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	-	-	-	-	-
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	150C	1000 Hours	-	-	3/135/0	1/77/0	-	-
Test Group B - Accelerated Lifetime Simulation Tests													
HTOL	B1	JEDEC JESD22-A108	1	77	Life Test	125C	1000 Hours	1/77/0	-	-	-	-	-
HTOL	B1	JEDEC JESD22-A108	1	77	Life Test	150C	408 Hours	-	-	-	-	1/77/0	2/154/0
ELFR	B2	AEC Q100-008	1	77	Early Life Failure Rate	150C	24 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	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	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	-	-	-
SD	C3	JEDEC J-STD-002	1	15	PB-Free Solderability	>95% Lead Coverage	-	-	-	1/15/0	-	-	-
PD	C4	JEDEC JESD22-B100 and B108	1	10	Physical Dimensions	Cpk>1.67	-	1/10/0	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	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
TDD	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	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	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	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	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	1/3/0	-	1/3/0	1/3/0	-
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	500 Volts	1/3/0	1/3/0	-	1/3/0	1/3/0	-
LU	E4	AEC Q100-004	1	6	Latch-Up	Per AEC Q100-004	-	1/6/0	Device specific data [1]	-	1/6/0	1/6/0	-
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	Device specific data [2]	3/90/0	3/90/0	3/90/0	1/30/0	-
<b>Additional Tests</b>													
Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device	Qual Device	QBS Reference	QBS Reference	QBS Reference	QBS Reference

- 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

- QBS: Qual By Similarity
- Qual Device UCC27424QDRQ1 is qualified at MSL1 260C
- Qual Device UCC27425QDRQ1 is qualified at MSL1 260C

**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 : ACU/HAST

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

TI Qualification ID: R-CHG-2109-004

[1] Qual Device: UCC27425QDRQ1 and Qual Device: UCC27424QDRQ1 have the same pin-out and bond-out. Change in metal for UCC27425QDRQ1 adds a low voltage inverter gate after the input stage. Circuitry directly connected to the pins is the same as for UCC27424QDRQ1.

[2] UCC27424QDRQ1 is covered by the UCC27425QDRQ1.

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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