



PCN Number:	20230825000.1A		PCN Date:	September 27, 2023	
Title:	Qualification of UMC-F12 as additional Fab site for select LBC9 devices				
Customer Contact:	Change Management team		Dept:	Quality Services	
Proposed 1st Ship Date:	Nov 28, 2023		Sample requests accepted until:	Oct 27, 2023*	
*Sample requests received after October 27, 2023 will not be supported.					
Change Type:					
<input type="checkbox"/> Assembly Site	<input type="checkbox"/> Design	<input type="checkbox"/> Wafer Bump Material			
<input type="checkbox"/> Assembly Process	<input type="checkbox"/> Data Sheet	<input type="checkbox"/> Wafer Bump Process			
<input 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 type="checkbox"/> Wafer Fab Material			
<input type="checkbox"/> Packing/Shipping/Labeling	<input type="checkbox"/> Test Process	<input type="checkbox"/> Wafer Fab Process			
PCN Details					
Description of Change:					
<p>Revision A is to announce the <u>addition</u> of new devices that were not included in the original PCN notification. The new devices are highlighted in yellow and bolded in the product affected section below. For these newly added devices ONLY, the expected first shipment date will be 90 days from the date of this notice, and sample requests will be accepted until 30 days from the date of this notice. The proposed 1st ship date of November 28, 2023 still applies for the original set of devices.</p> <p>Texas Instruments is pleased to announce the qualification of an aUMC-F12 as an additional fab for the selected devices listed in the "Product Affected" section.</p>					
Current Fab Site			New Fab Site		
Current Fab Site	Process	Wafer Diameter	New Fab Site	Process	Wafer Diameter
RFAB	LBC9	300 mm	UMC-F12	LBC9	300 mm
Qual details are provided in the Qual Data Section.					
Reason for Change:					
Continuity of supply					
Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):					
None					
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		
RFAB	RFB	USA	Richardson		
UMC-F12	F12	TWN	Tainan		
Sample product shipping label (not actual product label)					
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;">  <p>TEXAS INSTRUMENTS MADE IN: Malaysia 2DC: 2Q: MSL 2 /260C/1 YEAR SEAL DT MSL 1 /235C/UNLIM 03/29/04 OPT: ITEM: 39 LBL: 5A (L)T0:1750</p> </div> <div style="width: 20%; text-align: center;">  </div> <div style="width: 45%;"> <p>(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</p> </div> </div>					

Product Affected:

BQ25300RTER	SN2101016RSMR	SN2206024YBGR	TPS51397ARJER
BQ25302RTER	SN2101017RSMR	SN2206025YBGR	TPS65991BFRSMR
BQ25303JRTER	SN2101018REFR	SN2206026YBGR	TPS65992DBFREFR
BQ25306RTER	SN2101020RSMR	SN2206027YBGR	TPS65992SBFRSMR
SN2101008RSMR	SN2101021RSMR	SN2206029YBGR	TPS65993BHYBGR
SN2101009RSMR	SN2101022REFR	SN2206030YBGR	TPS65994BHYBGR
SN2101010REFR	SN2206023YBGR	SN2206031YBGR	

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	#	Test Name	Condition	Duration	Qual Device: BQ25300RTER	Qual Device: BQ25302RTER	Qual Device: BQ25303JRTER	Qual Device: BQ25306RTER	QBS Package Reference: TPS61378QWRTERQ1	QBS Package Reference: BQ25890HRTWR	QBS Process Reference: CD3253DB0YCHR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	-	3/231/0	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	-	-	3/231/0	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	-	3/231/0	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	-	3/231/0	3/231/0	-
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	-	-	-	3/135/0	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	-	-	-	3/231/0
ELFR	B2	ELFR	125C	48 Hours	-	-	-	-	-	-	3/3000/0
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	-	1/15/0	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	-	1/15/0	-	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	-	-	3/30/0	-	-

Type	#	Test Name	Condition	Duration	Qual Device: BQ25300RTER	Qual Device: BQ25302RTER	Qual Device: BQ25303JRTER	Qual Device: BQ25306RTER	QBS Package Reference: TPS61378QWRTERQ1	QBS Package Reference: BQ25890HRTWR	QBS Process Reference: CD3253DB0YCHR
ESD	E2	ESD CDM	-	250 Volts	-	-	-	1/3/0	-	-	-
ESD	E2	ESD HBM	-	1000 Volts	-	-	-	1/3/0	-	-	-
LU	E4	Latch-Up	Per JESD78	-	-	-	-	1/3/0	-	-	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	-	-	-	1/Pass	-	-	-
FTY	E6	Final Test Yield	-	-	1/Pass	1/Pass	1/Pass	1/Pass	-	-	-

- QBS: Qual By Similarity
- Qual Device BQ25300RTER is qualified at MSL2 260C
- Qual Device BQ25302RTER is qualified at MSL1 260C
- Qual Device BQ25303JRTER is qualified at MSL1 260C
- Qual Device BQ25306RTER is qualified at MSL1 260C

- 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

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

TI Qualification ID: R-CHG-2212-006

PCN Rev A Qual Results

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	#	Test Name	Condition	Duration	Qual Device: TPS51397ARJER	QBS Process Reference: TPS51486RJER	QBS Product Reference: TPS51393PRJER	QBS Product Reference: TPS51397ARJER	QBS Product, Package, Process Reference: TPS56C230RJER
HAST	A2	Biased HAST	110C/85%RH	264 Hours	-	3/231/0	-	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	3/231/0	-	-	-
TC	A4	Temperature Cycle	-55C/125C	1000 Cycles	-	-	-	-	1/77/0
TC	A4	Temperature Cycle	-55C/125C	700 Cycles	-	3/231/0	-	-	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	3/231/0	-	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	3/231/0	1/77/0	-	1/77/0
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	3/2400/0	-	-	-
ESD	E2	ESD CDM	-	1500 Volts	(1)	-	1/3/0	1/3/0	1/3/0
ESD	E2	ESD HBM	-	3000 Volts	(1)	-	1/3/0	1/3/0	1/3/0
LU	E4	Latch-Up	Per JESD78	-	(1)	3/9/0	1/6/0	1/6/0	1/6/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	Pass	Pass	Pass	Pass	Pass

- QBS: Qual By Similarity
- Qual Device TPS51397ARJER is qualified at MSL2 260C
- 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 Notes;

(1) TPS51397ARJE uses the same core silicon and package as TPS56C230RJE

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

TI Qualification ID: R-CHG-2303-022

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	#	Test Name	Condition	Duration	Qual Device: TPS65992DBREFR	Qual Device: TPS65992DBREFR	Qual Device: TPS65991BFRSMR	Qual Device: TPS65992BFRSMR	QBS Reference: TPS61378QWATERQ1	QBS Reference: PTPS65992SADCRSMR PTPS65992ADRSMR	QBS Reference: PTPS65992ADRIKR	QBS Reference: TPS65992ADRIKR
HAST	A2	Biased HAST	110C/85%RH	264 Hours	-	-	-	-	-	1/77/0	2/154/0	-
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	-	3/231/0	-	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	-	-	1/77/0	2/154/0	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	-	3/231/0	-	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	-	3/231/0	1/77/0	2/154/0	1/77/0
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	-	-	-	1/77/0	2/154/1 ¹	-
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	-	-	-	3/135/0	-	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	-	-	3/231/0	-	1/77/0
HTOL	B1	Life Test	150C	408 Hours	-	-	-	-	3/231/0	-	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	-	3/2400/0	3/2400/0	-	-
SD	C3	PB Solderability	Precondition w/ 155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	-	1/15/0	-	-	-

SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB Solder;	-	-	-	-	-	-	2/44/0	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	-	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	-	-	-	-	-	2/44/0	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	-	3/30/0	-	-	-
ESD	E2	ESD CDM	-	1000 Volts	-	-	-	1/3/0	-	-	1/3/0
ESD	E2	ESD CDM	-	1500 Volts	-	-	-	-	1/3/0	1/3/0	-
ESD	E2	ESD HBM	-	1500 Volts	-	-	-	-	1/3/0	-	-
ESD	E2	ESD HBM	-	2500 Volts	-	-	-	-	-	-	1/3/0
ESD	E2	ESD HBM	-	3000 Volts	-	-	-	1/3/0	-	-	-
ESD	E2	ESD HBM	-	4000 Volts	-	-	-	-	-	1/3/0	-
LU	E4	Latch-Up	Per JE5078	-	-	-	-	1/6/0	1/3/0	1/6/0	1/6/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	-	1/30/0	-	-	1/30/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	-	3/90/0	-	-	-
FTY	E6	Final Test Yield	-	-	1/1/0	1/1/0	1/1/0	1/1/0	-	-	-

- QBS: Qual By Similarity
- Qual Device TP5659920BFRFR is qualified at MS1.3 260C
- Qual Device TP5659920BFRFR is qualified at MS1.3 260C
- Qual Device TP565991BFRSMR is qualified at MS1.2 260C
- Qual Device TP5659925BFRSMR is qualified at MS1.2 260C
- 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 JE5047 : -55C/125C/700 Cycles and -65C/150C/300 Cycles

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

TI Qualification ID: R CHG 2212 027

[1]-Lost or Damaged - Not Tested

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	#	Test Name	Condition	Duration	QBS Process Reference: PCM6260QRTVRO1	QBS Process Reference: TPS51486RJER	QBS Product Reference: PTPS65994AAYBGR	QBS Product Reference: PTPS65994AAYBGR	QBS Product Reference: TPS65994ACYBGR	QBS Product Reference: TPS65994ACYBGR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	1/77/0	1/77/0	2/154/0
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	3/231/0	1/77/0	1/77/0	2/154/0
TC	A4	Temperature Cycle	-55C/125C	700 Cycles	-	-	3/231/0	1/77/0	1/77/0	2/154/0
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	3/231/0	1/77/0	1/77/0	2/154/0
HTOL	B1	Life Test	125C	1000 Hours	3/231/0	3/231/0	1/77/0	-	1/77/0	2/154/0
ELFR	B2	Early Life Failure Rate	125C	48 Hours	3/2400/0	3/2400/0	-	-	-	-
PD	C4	Physical Dimensions	(per mechanical drawing)	-	-	-	3/15/0	-	-	-
ESD	E2	ESD CDM	-	250 Volts	-	-	1/3/0	1/3/0	1/3/0	1/3/0
ESD	E2	ESD HBM	-	1000 Volts	-	-	1/3/0	1/3/0	1/3/0	1/3/0
LU	E4	Latch-Up	Per JE5078	-	-	-	1/6/0	1/3/0	-	1/6/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	-	-	1/Pass	1/Pass	-	-
FTY	E6	Final Test Yield	-	-	-	-	-	-	-	-

- 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

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

TI Qualification ID: R-NPD-2207-096

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

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