PCN Number:	20170928001-001	**PCN Date:**	Sep 29, 2017
Title:	Qualification of RFAB as an additional wafer fab site option for select devices in LBC8 process technology		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	Mar 29, 2018	**Estimated Sample Availability:**	Date provided at sample request.

Change Type:

☐	Assembly Site	☐	Assembly Process	☐	Assembly Materials
☐	Design	☐	Electrical Specification	☐	Mechanical Specification
☐	Test Site	☐	Packing/Shipping/Labeling	☐	Test Process
☒	Wafer Bump Site	☐	Wafer Bump Material	☐	Wafer Bump Process
☒	Wafer Fab Site	☐	Wafer Fab Materials	☐	Wafer Fab Process
		☐	Part number change		

PCN Details

Description of Change:

This change notification is to announce the qualification of RFAB as an additional wafer fab site option for the LBC8 devices listed in the product affected section of this document.

Current Sites				Additional Sites			
Current Fab Site	**Fab Process**	**Bump Site**	**Wafer Diameter**	**Additional Fab Site**	**Fab Process**	**Bump Site**	**Wafer Diameter**
DP1DM5	LBC8	DBUMP	200 mm	RFAB	LBC8	Clark-BP	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:

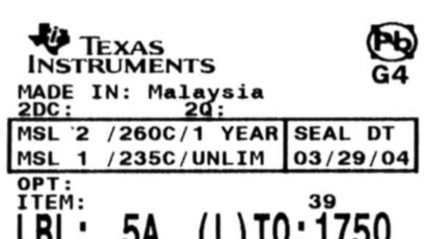
Current:

Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
DP1DM5	DM5	USA	Dallas

New:

Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
RFAB	**RFB**	**USA**	**Richardson**

Sample product shipping label (not actual product label)



(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

Product Affected:

LM536253QRNLRQ1	LM53625LQRNLRQ1	LM536353QRNLRQ1	LM53635LQRNLRQ1
LM536253QRNLTQ1	LM53625LQRNLTQ1	LM536353QRNLTQ1	LM53635LQRNLTQ1
LM536255QRNLRQ1	LM53625MQRNLRQ1	LM536355QRNLRQ1	LM53635MQRNLRQ1

LM536255QRNLTQ1	LM53625MQRNLTQ1	LM536355QRNLTQ1	LM53635MQRNLTQ1
LM53625AQRNLRQ1	LM53625NQRNLRQ1	LM53635AQRNLRQ1	LM53635NQRNLRQ1
LM53625AQRNLTQ1	LM53625NQRNLTQ1	LM53635AQRNLTQ1	LM53635NQRNLTQ1

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

LMS3655x/LMS3635xQRNLQ1 and LM53625x/LM53635xQRNLQ1 family of products
per AEC-Q100 Rev H Grade 1
Approved 10-Jul-2017

Product Attributes

Attributes	Qual Device: LMS3655AMQRNLQ1	Qual Device:: LM53635LQRNLTQ1
Automotive Grade Level	Grade 1	Grade 1
Operating Temp Range	-40 to +125 C	-40 to +125 C
Product Function	Power Management	Power Management
Die Attributes	-	-
Wafer Fab Supplier	RFAB/CLARK-BUMP	RFAB/CLARK-BUMP
Wafer Diameter (mm)	300	300
Wafer Process Technology	LBC8MV	LBC8MV
Die Revision	A1	B0
Package Attributes	-	-
Assembly Site	UTAC (NSE)	NSE / CLARK AT
Package Type	QFN/SON Hotrod	QFN/SON Hotrod
Package Designator	RNL	RNL
Ball/Lead Count	22	22
Package Size (mils)	157.48 X 196.85	157.48 X 196.85
Lead Frame Material	Cu	Cu
Leadframe Plating Composition	Matte SN	Matte SN

- QBS: Qual By Similarity
- Qual Devices are qualified at LEVEL2-260C

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: LMS3655AMQRNLQ1	QBS Product Reference: LM53635LQRNLTQ1
Test Group A – Accelerated Environment Stress Tests								
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	MSL2/260C	ATE	3/231/0	3/1180/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	96/hours @ 130C/85%	-	3/231/0
AC	A3	JEDEC JESD22-A102	3	77	Autoclave 121C	96/hours @ 121C	-	3/231/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -65/150C	500/Cycles @ -65C/150C	3/231/0	3/231/0
PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle, -40/125C	1000/Cycles @ -40C/125C	-	1/45/0
HTSL	A6	JEDEC JESD22-A103	1	45	High Temp Storage Bake 175C	500/hours @ 175C	-	3/231/0
Test Group B – Accelerated Lifetime Simulation Tests								
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 150C	408/hours @150C	1/77/0	3/231/0
ELFR	B2	AEC Q100-008	3	800	Life Test, 150C	48 hours @ 150C	QBS to *process technology level:* 3/2400/0 on *TI proprietary part number*	
EDR	B3	AEC Q100-005	3	77	NVM Endurance, Data Retention, and Operational Life	-	N/A	N/A
Test Group C – Package Assembly Integrity Tests								
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear (Cpk>1.67)	-	N/A	N/A
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull (Cpk>1.67)	-	N/A	N/A
SD	C3	JEDEC JESD22-B102	1	15	Surface Mount Solderability >95% Lead Coverage	-	-	1 lot Pass
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions (Cpk>1.67)	-	-	3 lots Pass
SBS	C5	AEC Q100-010	3	50	Solder Ball Shear (Cpk>1.67)	Solder Balls	N/A	N/A
LI	C6	JEDEC JESD22-B105	1	50	Lead Integrity	-	N/A	N/A
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 -	

	Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Qual Device: LMS3655AMQRNLQ1	QBS Product Reference: LM53635LQRNLTQ1
	HCI	D3	JESD60 & 28	-	-	Hot Injection Carrier	-	Completed Per Process Technology Requirements -	
	NBTI	D4	-	-	-	Negative Bias Temperature Instability	-	Completed Per Process Technology Requirements -	
	SM	D5	-	-	-	Stress Migration	-	Completed Per Process Technology Requirements -	
Test Group E – Electrical Verification Tests									
	HBM	E2	AEC Q100-002	1	3	ESD - HBM - Q100	500V, 1000V, 1500V, 2000V, 2500V	1/3/0	1/3/0
	CDM	E3	AEC Q100-011	1	3	ESD - CDM - Q100	500V, 750V, 1000V	1/3/0	1/3/0
	LU	E4	AEC Q100-004	1	6	Latch-up	25C, 125C	1/6/0	1/6/0

A1 (PC): Preconditioning:
Performed for THB, Biased HAST, AC, uHAST & TC samples, as applicable.

Ambient Operating Temperature by Automotive Grade Level:
Grade 0 (or E): -40°C to +150°C
Grade 1 (or Q): -40°C to +125°C
Grade 2 (or T): -40°C to +105°C
Grade 3 (or I): -40°C to +85°C

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

Green/Pb-free Status:
Qualified Pb-Free (SMT) and Green

For questions regarding this notice, e-mails can be sent to the regional contacts shown below, or you can contact your local Field Sales Representative.

Location	**E-Mail**
USA	PCNAmericasContact@list.ti.com
Europe	PCNEuropeContact@list.ti.com
Asia Pacific	PCNAsiaContact@list.ti.com
Japan	PCNJapanContact@list.ti.com