PCN Number:	20161025002	PCN Date:	Oct 28, 2016
Title:	Qualification of FFAB as an additional Fab site option for select devices		
Customer Contact:	PCN Manager	Dept:	Quality Services
Proposed 1st Ship Date:	Apr 28, 2017	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 FFAB as an additional Fab site option for select BICMOS13 devices.

Current Fab Site			Additional Fab Site		
Current Fab Site	Process	Wafer Diameter	Additional Fab Site	Process	Wafer Diameter
MAINEFAB	BICMOS13	200mm	FFAB	BICMOS13	200mm

Products included within this change notification have been standardized to a single process flow.

Change From	Change To
TEOS Oxide + Nitride planarized passivation	HDP Oxide + Nitride passivation

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:

Current Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
MAINEFAB	CUA	USA	South Portland
New Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
FR-BIP-1	**TID**	**DEU**	**Freising**

Sample product shipping label (not actual product label)

Product Affected:

DS90UB301QSQ/NOPB	DS90UB925QSQX/E7002826	DS90UB928QSQX/NOPB	DS90UH926QSQE/J7003048
DS90UB301QSQE/NOPB	DS90UB925QSQX/NOPB	DS90UH301QSQ/NOPB	DS90UH926QSQE/NOPB
DS90UB301QSQX/NOPB	DS90UB926QSQ/E7002827	DS90UH301QSQE/NOPB	DS90UH926QSQX/E7002384
DS90UB302QSQ/NOPB	DS90UB926QSQ/NOPB	DS90UH301QSQX/NOPB	DS90UH926QSQX/J7003049
DS90UB302QSQE/NOPB	DS90UB926QSQE/E7002827	DS90UH302QSQ/NOPB	DS90UH926QSQX/NOPB
DS90UB302QSQX/NOPB	DS90UB926QSQE/NOPB	DS90UH302QSQE/NOPB	DS90UH927QSQ/E7002392
DS90UB303TRTARQ1	DS90UB926QSQX/E7002827	DS90UH302QSQX/NOPB	DS90UH927QSQ/NOPB
DS90UB303TRTATQ1	DS90UB926QSQX/E7002956	DS90UH925QSQ/E7002397	DS90UH927QSQE/E7002392
DS90UB304TRHSRQ1	DS90UB926QSQX/NOPB	DS90UH925QSQ/NOPB	DS90UH927QSQE/NOPB
DS90UB304TRHSTQ1	DS90UB927QSQ/E7003111	DS90UH925QSQE/E7002397	DS90UH927QSQX/E7002392
DS90UB923TRTARQ1	DS90UB927QSQ/NOPB	DS90UH925QSQE/NOPB	DS90UH927QSQX/NOPB
DS90UB923TRTATQ1	DS90UB927QSQE/E7003111	DS90UH925QSQX/E7002397	DS90UH928QSQ/E7002398
DS90UB924TRHSRQ1	DS90UB927QSQE/NOPB	DS90UH925QSQX/NOPB	DS90UH928QSQ/NOPB
DS90UB924TRHSTQ1	DS90UB927QSQX/E7003111	DS90UH926QSQ/E7002384	DS90UH928QSQE/NOPB
DS90UB925QSQ/E7002826	DS90UB927QSQX/NOPB	DS90UH926QSQ/NOPB	DS90UH928QSQX/NOPB
DS90UB925QSQ/NOPB	DS90UB928QSQ/NOPB	DS90UH926QSQ/S7002920	PDS90UB923TRTATQ1
DS90UB925QSQE/E7002826	DS90UB928QSQE/NOPB	DS90UH926QSQE/E7002384	PDS90UB924TRHSRQ1
DS90UB925QSQE/NOPB	DS90UB928QSQX/E7002980		

Automotive BiCMOS13 Process Qualification at FFAB
(As per AEC-Q100 and JEDEC Guidelines)

DS90UH926; MFAB to FFAB BiCMOS13 Transfer
Approved 30-Aug-2016

Product Attributes

Attributes	Qual Device: DS90UH926QET65
Automotive Grade Level	Grade 2
Operating Temp Range	-40 to +105 C
Product Function	Interface
Wafer Fab Supplier	FFAB
Die Revision	CB
Assembly Site	TIEM-AT
Package Type	QFN
Package Designator	NKB
Ball/Lead Count	60

- QBS: Qual By Similarity
- Qual Device DS90UH926QET65 is qualified at LEVEL3-260CG

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: DS90UH926QET65
Test Group A – Accelerated Environment Stress Tests							
PC	A1	JEDEC J-STD-020 JESD22-A113	3	231	Automotive Preconditioning	Level 3-260C	0 Fails
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	96 Hours	3/231/0
AC	A3	JEDEC JESD22-A102	3	77	Autoclave 121C	96 Hours	3/231/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -65/150C	500 Cycles	3/231/0
TC-BP	A4	MIL-STD883 Method 2011	1	30	Post Temp. Cycle Bond Pull	Wires	1/30/0
PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle	-	-
HTSL	A6	JEDEC JESD22-A103	1	45	High Temp Storage Bake 150C	1000 Hours	1/45/0
Test Group B – Accelerated Lifetime Simulation Tests							
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	3/2400/21*
EDR	B3	AEC Q100-005	3	77	NVM Endurance, Data Retention, and Operational Life	-	3/231/0
Test Group C – Package Assembly Integrity Tests							
WBS	C1	AEC Q100-001	1	30	Bond Shear (Cpk>1.67)	Wires	1/30/0
WBP	C2	MIL-STD883 Method 2011	1	30	Bond Pull (Cpk>1.67)	Wires	1/30/0
SD	C3	JEDEC JESD22-B102	1	15	Surface Mount Solderability >95% Lead Coverage	Pb Free	1/15/0
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions (Cpk>1.67)	-	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 Injection Carrier	-	Completed Per Process Technology Requirements

Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Qual Device: DS90UH926QET65
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	2500 V	1/3/0
CDM	E3	AEC Q100-011	1	3	ESD - CDM - Q100	1000 V	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 test	3/90/0

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

* Failures only affect certain system applications. Root cause is due to a design sensitivity with the MCLK function. An 8D report is available on request, which details a minor metal fix.

Junction 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