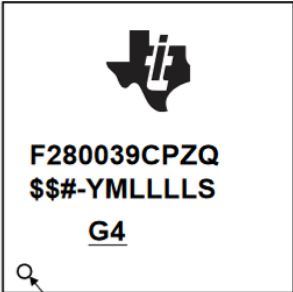


PCN Number:	20230803000.2		PCN Date:	August 07, 2023	
Title:	Qualification of LFAB as an additional Wafer Fab site option for select devices				
Customer Contact:	Change Management team		Dept:	Quality Services	
Proposed 1st Ship Date:	Feb 7, 2024		Sample Requests accepted until:	September 7, 2023*	
*Sample requests received after September 7, 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:					
Texas Instruments is pleased to announce the addition of LFAB as an additional Wafer Fab site option for the products listed in the "Product Affected" section of this document.					
Current Fab Site			Additional Fab Site		
Current Fab Site	Process	Wafer Diameter	New Fab Site	Process	Wafer Diameter
UMC12i	F65	300mm	LFAB	F65	300mm
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:					
Device Symbol:					
		<p> \$\$ = Wafer Fab Code (one or two characters) # = Silicon Revision Code YM = 2-digit Year/Month Code LLLL = Assembly Lot Code S = Assembly Site Code per QSS 005-120 G4 = ECAT </p>			
Original Fab Field:					
\$\$ = \$7 → UMC 12i					
Updated Fab Field:					
\$\$ = 3L → LFAB					
Current Fab Site Information:					
Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City		
UMC12i	UMI	SGP	Singapore		

Additional Fab Site Information:

New Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
LFAB	LHI	USA	Lehi

Sample product shipping label (not actual product label)


TEXAS INSTRUMENTS
 MADE IN: Malaysia
 2DC: 20:


G4



(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

MSL '2 /260C/1 YEAR SEAL DT
 MSL 1 /235C/UNLIM 03/29/04
 OPT:
 ITEM:
LBL: 5A (L)T0:1750

Product Affected:

F280034PTRQ1	F280037CPTRQ1	F280038CPMQ1	F280039CPZRQ1
F280036CPMRQ1	F280037CPZRQ1	F280038CPMRQ1	F280039PZRQ1
F280036PMRQ1	F280037PTRQ1	F280038PMRQ1	
F280037CPTQ1	F280037PZRQ1	F280039CPZQ1	

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: F280039CPZQ1	QBS Reference: TMS320F28379SPTPQ
Test Group A - Accelerated Environment Stress Tests									
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL3 260C	-		3/462/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	110C/85%RH	264 Hours		3/231/0
ACU/HAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Unbiased HAST	130C/85%RH	96 Hours		3/231/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles		3/231/0
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
Test Group B - Accelerated Lifetime Simulation Tests									
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	125C	1000 Hours	3/231/0	3/231/0
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate	125C	48 Hours	-	3/2400/0
EDR	B3	AEC Q100-005	3	77	NVM Endurance, Data Retention, and Op Life	125C NVM program cycling before B1 and B3	20 K cycles	3/462/0	
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	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	3/90/0

Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: F280039CPZQ1	QBS Reference: TMS320F28379SPTPQ
Test Group D - Die Fabrication Reliability Tests									
EM	D1	JESD61	-	-	Electromigration	-	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
Tddb	D2	JESD35	-	-	Time Dependent Dielectric Breakdown	-	-	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
NBTI	D4	-	-	-	Negative Bias Temperature Instability	-	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
SM	D5	-	-	-	Stress Migration	-	-	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	
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	500 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	-	3/90/0	
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

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-2307-022

[1]-1 unit passed 25C (Q100 requirement) marginal failure at 125C. Appears to be tester repeatability and unrelated to stress test. Refer to QEM-EVAL-2211-00276

ZVEI IDs: SEM-PW-13

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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