



<b>PCN Number:</b>	20231222000.2		<b>PCN Date:</b>	December 27, 2023																			
<b>Title:</b>	Qualification of CFAB and CD-PR as an additional Fab/Probe site option for select LBC5 devices																						
<b>Customer Contact:</b>	Change Management team		<b>Dept:</b>	Quality Services																			
<b>Proposed 1<sup>st</sup> Ship Date:</b>	Jun 27, 2024		<b>Sample requests accepted until:</b>	Jan 27, 2024*																			
<b>*Sample requests received after January 27, 2024 will not be supported.</b>																							
<b>Change Type:</b>																							
<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 checked="" type="checkbox"/>	Test Site	<input type="checkbox"/>	Wafer Fab Material																		
<input checked="" type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<input type="checkbox"/>	Wafer Fab Process																		
<b>PCN Details</b>																							
<b>Description of Change:</b>																							
Texas Instruments is pleased to announce the addition of CFAB as an additional Wafer Fab site option for the products listed in the "Product Affected" section of this document.																							
<table border="1"> <thead> <tr> <th colspan="3">Current Fab Site</th> <th colspan="3">New Fab Site</th> </tr> <tr> <th>Current Fab Site</th> <th>Process</th> <th>Wafer Diameter</th> <th>New Fab Site</th> <th>Process</th> <th>Wafer Diameter</th> </tr> </thead> <tbody> <tr> <td>DP1DM5</td> <td>LBC5</td> <td>200mm</td> <td>CFAB</td> <td>LBC5</td> <td>200mm</td> </tr> </tbody> </table>						Current Fab Site			New Fab Site			Current Fab Site	Process	Wafer Diameter	New Fab Site	Process	Wafer Diameter	DP1DM5	LBC5	200mm	CFAB	LBC5	200mm
Current Fab Site			New Fab Site																				
Current Fab Site	Process	Wafer Diameter	New Fab Site	Process	Wafer Diameter																		
DP1DM5	LBC5	200mm	CFAB	LBC5	200mm																		
Group 2 Devices, will have a probe site change as shown below:																							
<table border="1"> <thead> <tr> <th>Current:</th> <th>New:</th> </tr> </thead> <tbody> <tr> <td>Probe Site</td> <td>DL-MOS-4</td> </tr> </tbody> </table>						Current:	New:	Probe Site	DL-MOS-4														
Current:	New:																						
Probe Site	DL-MOS-4																						
Qual details are provided in the Qual Data Section.																							
<b>Reason for Change:</b>																							
Continuity of supply																							
<b>Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):</b>																							
None																							
<b>Changes to product identification resulting from this PCN:</b>																							
<b>Fab Site Information:</b>																							
<table border="1"> <thead> <tr> <th>Chip Site</th> <th>Chip Site Origin Code (20L)</th> <th>Chip Site Country Code (21L)</th> <th>Chip Site City</th> </tr> </thead> <tbody> <tr> <td>DP1DM5</td> <td>DM5</td> <td>USA</td> <td>Dallas</td> </tr> <tr> <td><b>CFAB</b></td> <td><b>CU3</b></td> <td><b>CHN</b></td> <td><b>CHENGDU</b></td> </tr> </tbody> </table>						Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City	DP1DM5	DM5	USA	Dallas	<b>CFAB</b>	<b>CU3</b>	<b>CHN</b>	<b>CHENGDU</b>						
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Sample product shipping label (not actual product label)																							
<div>  <b>TEXAS INSTRUMENTS</b>  MADE IN: Malaysia  2DC: 20:  MSL '2 /260C/1 YEAR SEAL DT  MSL 1 /235C/UNLIM 03/29/04  OPT:  ITEM: 39  <b>LBL: 5A (L)T0:1750</b> </div> <div>  </div> <div> (1P) <b>SN74LS07NSR</b>  (Q) <b>2000</b> (D) <b>0336</b>  (31T) LOT: 3959047MLA  (4W) TKY (1T) 7523483SI2  (P)  (2P) REV: (V) 0033317  (20L) CSO: SHE (21L) CCO:USA  (22L) ASO: MLA (23L) ACO: MYS </div>																							

**Product Affected:****Group 1 Device list: Adding CFAB Wafer Fab site:**

LMR16006YQ3DDCRQ1	SN65HVDA100QDRQ1	TPS54561QDPRRQ1	TPS57160SDGQRWB
LMR16006YQ3DDCTQ1	TPS28225TDRBRQ1	TPS54561QDPRTQ1	TPS57160SDRCRWB
LMR16006YQ5DDCRQ1	TPS28225TDRQ1	TPS57040QDGQRQ1	TPS57160ZQDGQRQ1
LMR16006YQ5DDCTQ1	TPS54060QDGQR-M	TPS57060QDGQRQ1	TPS65310ACQRWERQ1
LMR16006YQDDCRQ1	TPS54240QDGQRQ1	TPS57140QDGQRQ1	TPS65310AQRVJRQ1
LMR16006YQDDCTQ1	TPS54260QDGQRQ1	TPS57140QDRCRQ1	TPS65310ASQRWERQ1
SN0508066PAPR	TPS54361QDPRRQ1	TPS57160QDGQRQ1	TPS65311ACQRWERQ1
SN65HVDA100QDRKN	TPS54361QDPRTQ1	TPS57160QDRCRQ1	TPS65311QRVJRQ1

**Group 2 Device list: Adding CFAB Wafer Fab site and CD-PR Probe site:**

SN1205024PWP	SN1205024PWPR
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### Automotive New Product Qualification Summary (As per AEC-Q100 and JEDEC Guidelines)

**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: S0809054C2PAPR	QBS Process Reference: S301044APFPRG4
<b>Test Group A – Accelerated Environment Stress Tests</b>								
		AEC-Q006	3	22	SAM Analysis, Pre Stress	-	3/66/0	-
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Automotive Preconditioning	Level 3-260C	Pass	-
		AEC-Q006	3	22	SAM Analysis, Post Stress	-	3/66/0	-
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	96 Hours	3/231/0	-

Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Qual Device: S0809054C2PAPR	QBS Process Reference: S301044APFPRG4
	A2	AEC-Q006	3	1	Cross Section, Post bHAST 96 Hours	-	3/3/0	-
	A2	AEC-Q006	3	22	SAM Analysis, Post bHAST, 96 Hours	-	-	-
	A2	AEC-Q006	3	3	Wire Bond Shear, Post bHast, 96 Hours	-	3/9/0	-
	A2	AEC-Q006	3	3	Bond Pull over Stitch, post bHAST, 96 Hours	-	3/9/0	-
	A2	AEC-Q006	3	3	Bond Pull over Ball, Post bHAST, 96 Hours	-	3/9/0	-
	A2	JEDEC JESD22-A110	3	70	Biased HAST, 130C/85%RH	192 Hours	3/210/0	-
	A2	AEC-Q006	3	1	Cross Section, Post bHAST 192 Hours	-	3/3/0	-
	A2	AEC-Q006	3	22	SAM Analysis, Post bHAST, 192 Hours	Completed	3/66/0	-
	A2	AEC-Q006	3	3	Wire Bond Shear, Post bHast, 192 Hours	-	3/9/0	-
	A2	AEC-Q006	3	3	Bond Pull over Stitch, post bHAST, 192 Hours	-	3/9/0	-
	A2	- AEC-Q006	3	3	Bond Pull over Ball, Post bHAST, 192 Hours	-	3/9/0	-
ACLV	A3	JESD22-A102	1	77	Autoclave 121C	96 Hours	1/77/0	-
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -65/150C	500 Cycles	3/231/0	-
TC	A4	-	3	1	Cross Section, Post T/C 500 Cycles	-	-	-
TC	A4	-	3	22	SAM Analysis, Post T/C, 500 Cycles	Completed	3/66/0	-
TC	A4	-	3	3	Wire Bond Shear, Post T/C 500 Cycles	Wires	-	-
TC	A4	-	3	3	Bond Pull over Stitch Post T/C 500 Cycles	Wires	-	-
TC	A4	-	3	3	Bond Pull over Ball Post T/C 500 Cycles	Wires	-	-
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	70	Temperature Cycle, -65/150C	1000 Cycles	3/210/0	-
TC	A4	-	3	1	Cross Section, Post T/C 1000 Cycles	-	3/3/0	-
TC	A4	-	3	22	SAM Analysis, Post T/C, 1000 Cycles	Completed	3/66/0	-
TC	A4	-	3	3	Wire Bond Shear, Post T/C 1000 Cycles	-	3/9/0	-

Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Qual Device: S0809054C2PAPR	QBS Process Reference: S301044APFPRG4
TC	A4	-	3	3	Bond Pull over Stitch, Post T/C, 1000 Cycles	-	3/9/0	-
TC	A4	-	3	3	Bond Pull over Ball, Post T/C, 1000 Cycles	-	3/9/0	-
PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle - 40/125C	1000 Cycles	1/45/0	-
PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle - 40/125C	2000 Cycles	1/45/0	-
HTSL	A6	JEDEC JESD22-A103	3	45	High Temp Storage Bake 150C	1000 Hours	3/231/0	-
HTSL	A6	-	3	1	Cross Section, Post HTSL 500 Hours	-	3/3/0	-
HTSL	A6	JEDEC JESD22-A103	3	77	High Temp Storage Bake 150C	2000 Hours	3/231/0	-
HTSL	A6	-	3	1	Cross Section, Post HTSL 1000 Hours	-	3/3/0	-
Test Group B – Accelerated Lifetime Simulation Tests								
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 125C	1753 Hours	3/267/1*	-
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 125C	1000 Hours	1/77/0	-
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 140C	653 Hours	-	3/231/0
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate, 125C	48 Hours	-	3/2399/0
EDR	B3	AEC Q100-005	3	77	NVM Endurance, Data Retention, and Operational Life	1000 Hours	See note 1	-
Test Group C – Package Assembly Integrity Tests								
WBS	C1	AEC Q100-001	3	30	Wire Bond Shear, Cpk>1.67	Wires	3/90/0	-
WBP	C2	MIL-STD883 Method 2011	3	30	Bond Pull over Ball, Cpk >1.67	Wires	3/90/0	-
SD	C3	JEDEC JESD22-B102	1	15	Surface Mount Solderability	Pb/Pb Free	-	-
PD		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: S0809054C2PAPR	QBS Process Reference: S301044APFPRG4
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 Q100-001	1	3	ESD-HBM	2000V	1/3/0	-
HBM	E2	AEC Q100-001	1	3	ESD-HBM-Global Pins	4000V	1/3/0	-
HBM	E2	AEC Q100-001	1	3	ESD-HBM-CANH/CANL Split	8000V	1/3/0	-
CDM	E3	AEC Q100-011	1	3	ESD-CDM	1500V	1/3/0	-
LU	E4	AEC Q100-004	1	6	Latch-up, 125C	(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.

**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

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

TI Qualification ID: 20171213-124216(12/15 update from 20201001-136436)

Note 1: Performed during Life test and High Temp Storage Bake  
\* EIPD fail, 8D available.

ZVEI ID: SEM-PW-13, SEM-TF-01

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

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