

PCN Number:	20200319001.1	PCN Date:	Mar 23, 2020
Title:	Qualification of FFAB as an additional Wafer Fab Site option for select SLM devices		
Customer Contact:	PCN Manager	Dept:	Quality Services
Proposed 1st Ship Date:	Jun 23, 2020	Estimated Sample Availability:	Date provided at sample request.
Change Type:			
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process
<input type="checkbox"/>	Design	<input type="checkbox"/>	Electrical Specification
<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Packing/Shipping/Labeling
<input type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>	Wafer Bump Material
<input checked="" type="checkbox"/>	Wafer Fab Site	<input checked="" type="checkbox"/>	Wafer Fab Materials
		<input type="checkbox"/>	Part number change
<input type="checkbox"/>		<input type="checkbox"/>	Assembly Materials
<input type="checkbox"/>		<input type="checkbox"/>	Mechanical Specification
<input type="checkbox"/>		<input type="checkbox"/>	Test Process
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Bump Process
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Process

PCN Details

Description of Change:

Texas Instruments is pleased to announce the qualification of its FFAB (FR-BIP-1) fabrication facility as an additional Wafer Fab source for the selected devices listed in "Product Affected" section.

Current Fab Site			New Fab Site		
Current Fab Site	Process	Wafer Diameter	New Fab Site	Process	Wafer Diameter
GFAB6	SLM	150 mm	FFAB	SLM	200 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:

Current Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
GFAB6	GF6	GBR	Greenock

New Fab Site:

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)

TEXAS INSTRUMENTS
MADE IN: Malaysia
2DC: 20:
MSL 2 / 260C/1 YEAR SEAL DT
MSL 1 / 235C/UNLIM 03/29/04
OPT:
ITEM: 39
LBL: 5A (L)T0:1750



(1P) SN74LS07NSR
(Q) 2000 (D) 0336
(31T) LOT: 3959047MLA
(4W) TKY (1T) 7523483S12
(P)
(2P) REV: (V) 0055517
(20L) CSO: SHE (21L) CCO:USA
(22L) ASO:MLA (23L) ACO: MYS

Product Affected:

5962-0722901QXA	JM38510/11202BGA	LM136AH-2.5	LM193H
5962-0722902QZA	JM38510/11703BXA	LM136AH-2.5/883	LM193H/883
5962-0722903QYA	JM38510/11803SXA	LM136AH-2.5/883/MPGD	LM193H/NOPB
5962-7802006QEA	LM101 MDR	LM136AH-2.5/NOPB	LM193J/883

5962-8752401PA	LM101A MD8	LM136AH-2.5RLQV	LM195H/883
5962-8754601PA	LM101AH	LM136AH-2.5RQV	LM201AH
5962-8759401XA	LM101AH/883	LM136AH-5.0	LM201AH/NOPB
5962-8759401YA	LM101AH/NOPB	LM136AH-5.0/883	LM224J
5962-8759402XA	LM101AHLQMLV	LM136AH-5.0/883/MPGD	LM235AH
5962-8759402YA	LM101AJ	LM136AH-5.0/NOPB	LM235AH/NOPB
5962-8759405XA	LM101AJ/883	LM136AH-5.0-SMD	LM235H
5962-8759406VXA	LM101AJLQMLV	LM136H-2.5	LM235H/NOPB
5962-8760401GA	LM109H	LM136H-2.5/NOPB	LM236AH-5.0
5962-8771002GA	LM109H/NOPB	LM136H-5.0	LM236AH-5.0/NOPB
5962-8771002QXA	LM109K	LM136H-5.0/883	LM236H-2.5
5962-8773901XA	LM109K STEEL	LM136H-5.0/NOPB	LM236H-2.5/NOPB
5962-8777801XA	LM109K STEEL/NOPB	LM137H	LM236H-5.0
5962-8958703XA	LM10BH	LM137H MD8	LM236H-5.0/NOPB
5962-9091402QYA	LM10BH/NOPB	LM137H/883	LM239J
5962-9166703QYA	LM10CH	LM137H/NOPB	LM258H
5962-9166703VYA	LM10CH/NOPB	LM137H1PQMLV	LM258H/NOPB
5962-9233602QXA	LM10H/883	LM137HVH/883	LM285H-1.2
5962-9233602VXA	LM111 MD8	LM137HVK MD8	LM285H-1.2/NOPB
5962-9452602MGA	LM111 MW8	LM137K/883	LM293H
5962-9452602MPA	LM111H	LM137KG MD8	LM293H/NOPB
5962-9452602VPA	LM111H/883	LM137KG-MW8	LM2940-5.0 MDE
5962-9650502QXA	LM111H/NOPB	LM138K STEEL	LM2940GW5.0/883
5962-9673801VDA	LM111HLQMLV	LM138K STEEL/NOPB	LM2940GW5.0RLQV
5962-9673801VXA	LM111HRLQMLV	LM138KG-MD8	LM2941 MDE
5962-9679801VCA	LM111J/883	LM138KG-MW8	LM2941GW/883
5962-9951706QZA	LM111J-8	LM138K-MIL	LM2941GW-QMLV
5962L0052401VGA	LM111J-8/883	LM139 MD8	LM2941GWRQLQMLV
5962L0052401VHA	LM111J-8/883/MABI	LM139 MDE	LM2941-MD8
5962L0052401VPA	LM111J-8LQMLV	LM139 MDR	LM2991 MD8
5962L0052401VZA	LM111J-8RLQMLV	LM139AE/883	LM2991GW-QML
5962L9951501VGA	LM111-MDE	LM139AJ/883	LM301AH
5962L9951501VPA	LM111WG/883	LM139AJ/883/MABI	LM301AH/NOPB
5962P9951708VXA	LM111WGLQMLV	LM139AJ/883/MPGD	LM309H
5962R0050101V9A	LM111WGRQLQMLV	LM139AJ/PB	LM309H/NOPB
5962R0050101VXA	LM111WLQMLV	LM139AJRLQMLV	LM309H/SL09392
5962R0050102V9A	LM111WRLQMLV	LM139AJRQMLV	LM309K STEEL
5962R0050102VXA	LM117E/883	LM139AW/883	LM309K STEEL/NOPB
5962R0052402VGA	LM117GW/883	LM139AWG/883	LM311H
5962R0052402VHA	LM117GW-QML	LM139AWG-QMLV	LM311H/NOPB
5962R0052402VPA	LM117GWRLQMLV	LM139AWGRLQMLV	LM317AH
5962R0052402VZA	LM117GWRQMLV	LM139AWGRQMLV	LM317AH/NOPB
5962R0722901V9A	LM117H	LM139AWG-SMD	LM317H
5962R0722901VXA	LM117H MD8	LM139AW-QMLV	LM317H/NOPB
5962R0722902VXA	LM117H MDE	LM139AWRLQMLV	LM317H/SL160150
5962R0722902VZA	LM117H MDR	LM139AWRQMLV	LM317HVH

5962R0722961V9A	LM117H/883	LM139AW-SMD	LM317HVH/NOPB
5962R0722961VXA	LM117H/883/MABI	LM139E/883	LM317HVK STEEL
5962R0722962VZA	LM117H/NOPB	LM139J/883	LM317HVK STEEL/NOPB
5962R8759461VXA	LM117HRLQMLV	LM139J/883/MPGD	LM317K STEEL
5962R8771002V9A	LM117HRQMLV	LM139J/PB	LM317K STEEL/NOPB
5962R8771002VGA	LM117HVGW-QML	LM140H-12/883	LM323K STEEL
5962R8771002VPA	LM117HVGWRLQMLV	LM140H-15/883	LM323K STEEL/NOPB
5962R8771002VXA	LM117HVGWRQMLV	LM140H-5.0/883	LM324J
5962R8771003V9A	LM117HVH	LM140K-12	LM335AH
5962R8771003VGA	LM117HVH MDE	LM140K-12/883	LM335AH/NOPB
5962R8771003VPA	LM117HVH MDR	LM140K-12/NOPB	LM335H
5962R8771003VXA	LM117HVH/883	LM140K-15	LM335H/NOPB
5962R8958702V9A	LM117HVH/NOPB	LM140K-15/NOPB	LM337H
5962R8958704VXA	LM117HVH-QML	LM140K-5.0	LM337H/NOPB
5962R9166702V9A	LM117HVHRLQMLV	LM140K-5.0/NOPB	LM338K STEEL
5962R9166704VYA	LM117HVHRQMLV	LM140KG-12 MD8	LM338K STEEL/NOPB
5962R9452602V9A	LM117HVK/883	LM140KG-5 MD8	LM339J
5962R9452602VGA	LM117HVKG MD8	LM140LAH-12	LM340K-5.0
5962R9452602VPA	LM117HVK-QML	LM140LAH-12/883	LM340K-5.0/NOPB
5962R9452603V9A	LM117K	LM140LAH-12/NOPB	LM350K STEEL
5962R9452603VGA	LM117K STEEL	LM140LAH-15	LM350K STEEL/NOPB
5962R9452603VPA	LM117K STEEL/NOPB	LM140LAH-15/883	LM358H/NOPB
5962R9673801V9A	LM117K/883	LM140LAH-15/NOPB	LM361H
5962R9673801VCA	LM117K/883/MABI	LM140LAH-5.0	LM361H/NOPB
5962R9673801VDA	LM117KG MD8	LM140LAH5.0/883	LM555H/883
5962R9673801VXA	LM117KG-MW8	LM140LAH-5.0/NOPB	LM555J/883
5962R9673802V9A	LM117KRQMLV	LM148 MD8	LM723 MD8
5962R9673802VCA	LM118 MD8	LM148 MW8	LM723CH
5962R9673802VDA	LM118H	LM148J/883	LM723CH/NOPB
5962R9673802VXA	LM118H/883	LM148J/883/MABI	LM723CH/SL161923
5962R9679801V9A	LM118H/NOPB	LM148J/883/MPGD	LM723CH/SL161924
5962R9679801VCA	LM118J-8/883	LM148J/PB	LM723E/883
5962R9679801VHA	LM119 MD8	LM1558H	LM723H
5962R9679801VIA	LM119 MDR	LM1558H/883	LM723H/883
5962R9679801VXA	LM119E/883	LM1558H/NOPB	LM723H/NOPB
5962R9679802VCA	LM119E-SMD	LM1558J/883	LM723H/SL161922
5962R9679802VHA	LM119H	LM158 MD8	LM723J/883
5962R9679802VXA	LM119H/883	LM158 MW8	LM723J/883/MABI
5962R9950401V9A	LM119H/NOPB	LM158A MDE	LM741 MD8
5962R9950401VCA	LM119HRQMLV	LM158A MDR	LM741CH
5962R9950401VDA	LM119H-SMD	LM158AH	LM741CH/NOPB
5962R9950401VZA	LM119J	LM158AH/883	LM741CH/SL60015
5962R9950402V9A	LM119J/883	LM158AH/NOPB	LM741H
5962R9950402VCA	LM119J/883/MABI	LM158AHRQMLV	LM741H/883
5962R9950402VDA	LM119J-QMLV	LM158AHRQMLV	LM741H/NOPB
5962R9950402VZA	LM119JRLQMLV	LM158AH-SMD	LM741H/SL100182

5962R9951703V9A	LM119JRQMLV	LM158AJ	LM741J
5962R9951703VXA	LM119J-SMD	LM158AJ/883	LM741J/883
5962R9951704VYA	LM119W/883	LM158AJ/883/MABI	LM741J/883/MABI
5962R9951705V9A	LM119WGRQMLV	LM158AJRQMLV	LM747 MD8
5962R9951705VXA	LM119WGRQMLV	LM158AJRQMLV	LM747H/883
5962R9951706VZA	LM119WRLQMLV	LM158AWG/883	LM747J/883
5962R9951707VZA	LM119WRQMLV	LM158AWGRLQMLV	LM747J/883/MABI
7704302XA	LM119W-SMD	LM158AWGRQMLV	LM748H/883
8418002XA	LM120H-12	LM158H	LM78M05CH
86014012A	LM120H-12/883	LM158H/883	LM78M05CH/NOPB
8601401CA	LM120H-12/NOPB	LM158H/883/MABI	LP2953 MDS
8601401HA	LM120H-15	LM158H/NOPB	LP2953AMGW/883
8601401IA	LM120H-15/883	LM158J	LP2953AMGW-QMLV
AM26LS31MW/883	LM120H-15/NOPB	LM185-1.2-MD8	M38510/10103BCA
DS26LS31ME-SMD	LM120H-5.0	LM185-2.5 MD8	M38510/10103BGA
DS26LS31MJ/883	LM120H-5.0/883	LM185BH	M38510/10103BPA
DS26LS31MJ/883/MABI	LM120H-5.0/NOPB	LM185BH/NOPB	M38510/10201SCA
DS26LS31MJ-SMD	LM120K-12/883	LM185BWG/883	M38510/10201SIA
DS26LS31MW/883	LM120K-15/883	LM185BXH-2.5	M38510/10304BGA
DS26LS32MJ/883	LM120KG-12 MD8	LM185BXH-2.5/NOPB	M38510/10706SYA
DS9637AMJ/883	LM120KG-15 MD8	LM185BYH-1.2	M38510/11001BCA
DS9638J/883	LM120KG-5 MD8	LM185BYH-1.2/NOPB	M38510/11201BDA
JL101ABCA	LM124 MD8	LM185BYH1.2-SMD	M38510/11202BGA
JL101ABGA	LM124 MDE	LM185BYH-2.5	M38510/11703BXA
JL101ABPA	LM124 MDR	LM185BYH2.5/883	M38510/11803SXA
JL111BGA	LM124AE/883	LM185BYH2.5-QV	MC1558G
JL111BGA/MABI	LM124AJ/883	LM185H-1.2	MPD23783NAC
JL117BXA	LM124AJ/883/MABI	LM185H-1.2/883	MPD23784NAC
JL117BXA/MABI	LM124AJ/883/MPGD	LM185H-1.2/NOPB	RM101AJLQMLV
JL118BPA	LM124AJ/PB	LM185H-1.2RLQV	RM111JLQMLV
JL137SXA	LM124AJRQMLV	LM185H-1.2-SMD	RM111JRLQMLV
JL139BDA	LM124AJRQMLV	LM185H-2.5	RM117HRQMLV
JL139BDA/MABI	LM124AW/883	LM185H-2.5/883	RM117HVHRQMLV
JL140-5SYA	LM124AWG/883	LM185H-2.5/NOPB	RM117HVKRQMLV
JL148BCA	LM124AWGRLQMLV	LM185H-2.5-SMD	RM117KRQMLV
JL148BCA/MABI	LM124AWGRQMLV	LM185WG-1.2/883	RM119JRQMLV
JL148BZA	LM124AWRLQMLV	LM185WG-1.2RLQV	RM124AJRQMLV
JL148SCA	LM124AWRQMLV	LM185WG-2.5/883	RM136AH2.5RQMLV
JL193BGA	LM124J/883	LM193 MD8	RM137HPQMLV
JL723SCA	LM124J/883/MABI	LM193 MDE	RM139AJRQMLV
JL723SIA	LM124J/PB	LM193 MDR	RM139AWRQMLV
JM38510/10103BCA	LM135AH	LM193AH	RM158AJRQMLV
JM38510/10103BGA	LM135AH/NOPB	LM193AH/883	RM185BYH1.2XQV
JM38510/10103BPA	LM135H	LM193AH/NOPB	RM193AJRQMLV
JM38510/10201SCA	LM135H/NOPB	LM193AHRQMLV	RM2940J-5.0XQV
JM38510/10201SIA	LM136-2.5 MD8	LM193AHRQMLV	RM2940WG-5.0RQV

JM38510/10304BGA	LM136-2.5 MDE	LM193AJ/883	RM2941JXQMLV
JM38510/10706SYA	LM136-2.5 MDR	LM193AJ-QMLV	SN1401044NAC
JM38510/11001BCA	LM136-2.5 MDS	LM193AJRLQMLV	U5B7741312
JM38510/11001SCA	LM136-5.0-MW8	LM193AJRQMLV	U5B7741393
JM38510/11201BDA			

Qualification Report

Approve Date 12-Mar-2020

Qualification Results

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

Test Name / Condition	Duration	Qual Device: JL723SIA	Qual Device: LM117GWRLQMLV	Qual Device: LM119JRLQMLV
B1 Resistance to Solvents	-	1/3/0	1/3/0	-
B2 Bond Strength	22 Wires, Min 4 Units Condition C or D	1/22/0	1/22/0	1/22/0
B3 Solderability	245C +/-5%, minimum of 3 devices	1/22/0	1/22/0	1/3/0
D2 Lead Integrity	Condition B2, 3 units, 45 leads minimum	1/45/0	-	-
D3 Sequence	-	1/15/0	1/15/0	1/15/0
D4 Sequence	-	1/15/0	1/15/0	1/15/0
Radiation Response Characterization	per spec	-	1/Pass	1/Pass
ESD CDM	250V	-	1/3/0	1/3/0
Electrical Characterization, side by side	30 units	1/Pass	1/Pass	1/Pass
ESD HBM	1000V	-	1/12/0	-
ESD HBM	1200V	1/6/0	-	-
ESD HBM	500V	-	1/3/0	-
ESD HBM	500V, 1000V	-	-	1/3/0
C1 Life Test	125C, 1000 Hours	1/45/0	1/45/0	-
C1 Life Test	150C, 500 Hours	-	-	1/45/0
Latch-up	(per JESD78)	1/6/0	-	1/6/0
Manufacturability (Assembly)	(per mfg. Site specification)	1/Pass	1/Pass	1/Pass
Manufacturability (Wafer Fab)	(per mfg. Site specification)	1/Pass	1/Pass	1/Pass

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

Test Name / Condition	Duration	Qual Device: LM137H1PQMLV	Qual Device: LM139AWRLQMLV	Qual Device: LM158AJRLQMLV	Qual Device: LM185H-1.2RLQV
B1 Resistance to Solvents	-	-	1/3/0	-	1/3/0
B2 Bond Strength	22 Wires, Min 4 Units Condition C or D	-	1/22/0	-	-
B3 Solderability	245C +/-5%, minimum of 3 devices	-	1/3/0	-	1/26/0
D2 Lead Integrity	Condition B2, 3 units, 45 leads minimum	-	1/45/0	-	1/45/0
D3 Sequence	-	-	1/15/0	-	1/15/0
D4 Sequence	-	-	1/15/0	-	1/15/0
Radiation Response Characterization	per spec	1/Pass	1/Pass	1/Pass	-
ESD CDM	250V	-	1/3/0	-	-
Electrical Characterization, side by side	30 units	-	1/Pass	-	1/Pass
ESD HBM	1000V	-	-	-	-
ESD HBM	1200V	-	-	-	-
ESD HBM	500V	-	-	-	-
ESD HBM	500V, 1000V	-	1/3/0	-	1/3/0
C1 Life Test	125C, 1000 Hours	-	-	-	1/47/0
C1 Life Test	150C, 500 Hours	-	1/45/0	-	-
Latch-up	(per JESD78)	-	1/6/0	-	1/6/0
Manufacturability (Assembly)	(per mfg. Site specification)	-	1/Pass	-	1/Pass
Manufacturability (Wafer Fab)	(per mfg. Site specification)	-	1/Pass	-	1/Pass

- QBS: Qual By Similarity

- Qual Device LM137H1PQMLV_CL is qualified at LEVEL1-NACG

- 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/>

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.

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