

PCN Number:	20220217000.1	PCN Date:	February 22, 2022
Title:	Qualification of new Fab site (CFAB) using qualified Process Technology, Die Revision, updated BOMs, and additional Assembly options for select devices		
Customer Contact:	PCN Manager	Dept:	Quality Services
Proposed 1st Ship Date:	May 21, 2022	Estimated Sample Availability:	Date provided at sample request.
Change Type:			
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process
<input checked="" type="checkbox"/>	Design	<input type="checkbox"/>	Electrical Specification
<input type="checkbox"/>	Test Site	<input checked="" 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

PCN Details

Description of Change:

Texas Instruments is pleased to announce the qualification of a new fab using a qualified process technology (CFAB, JI3), updated BOMs, and assembly (HFTF) site options for selected devices as listed below in the product affected section.

Current Fab Site			New Fab Site		
Current Fab Site	Process	Wafer Diameter	New Fab Site	Process	Wafer Diameter
SFAB	JI1	150 mm	CFAB	JI3	200 mm

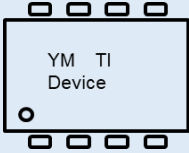
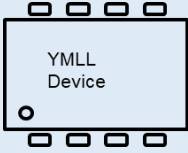
The die was also changed as a result of the process change.

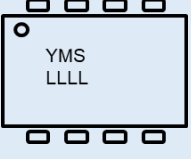
Construction differences are noted below:

	ASESH	HNA	UTL2	HFTF (old)**	HFTF (new)
Mount Compound	SID#EY1000063	SID#400180	SID#PZ0013	SID#A-18	SID#A-18
Mold Compound	SID#EN2000763	SID#450179	SID#CZ0094	SID#R-30	SID#R-30
Lead finish	NiPdAu	NiPdAu	NiPdAu	Matte Sn	Matte Sn
Bond wire diameter	Cu, 1.0 mils	Au, 1.0 mils	Au, 1.0 mils	Cu, 1.0 mils	Cu, 0.8 mils

** Applies to LM2903DGKR, LM293DGKR, & LM393DGKR only

Package Marking Differences:

	ASESH/HNA/UTL2	HFTF
Top Side	 <p>TI = TI CHARACTER YM = YEAR MONTH O = PIN 1</p>	 <p>YM = YEAR MONTH DATE CODE LL = LAST 2 DIGIT IN ASSY LOT CODE O = PIN 1</p>

Bottom Side	 <p>YM = YEAR MONTH DATE CODE S = ASSEMBLY SITE CODE LLLL = LOT TRACE CODE O = PIN 1</p>	NONE
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G4 (NiPdAu lead finish) versions of this device family are included in EOL notice PDN#20220217001.3.

Qual details are provided in the Qual Data Section.

Reason for Change:

These changes are part of our multiyear plan to transition products from our 150-millimeter factories to newer, more efficient manufacturing processes and technologies, underscoring our commitment to product longevity and supply continuity.

Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):

None

Impact on Environmental Ratings:

Checked boxes indicate the status of environmental ratings following implementation of this change. If below boxes are checked, there are no changes to the associated environmental ratings.

RoHS	REACH	Green Status	IEC 62474
<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change

Changes to product identification resulting from this PCN:

Fab Site Information:

Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
SH-BIP-1	SHE	USA	Sherman
CFAB	CU3	CHN	Chengdu

Die Rev:

Current	New
Die Rev [2P]	Die Rev [2P]
A, B	A

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
ASESH	ASH	CHN	Shanghai
HNA	HNT	THA	Ayutthaya
UTL2	NS2	THA	Bangpakong, Chachoengsao
HFTF	HFT	CHN	Hefei

Sample product shipping label (not actual product label)

TEXAS INSTRUMENTS
 MADE IN: Malaysia
 2DC: 2Q:
 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) 7523483SI2
 (P)
 (2P) REV: (V) 0033317
 (20L) CSO: SHE (21L) CCO:USA
 (22L) ASO: MLA (23L) ACO: MYS

Product Affected:

Group 1 - CFAB/Process migration, Die Revision, adding HFTF A/T Site and BOM updates:

LM393ADGKR	LM293ADGKR
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Group 2 - CFAB/Process migration, Die Revision and Assembly BOM updates:

LM2903DGKR	LM293DGKR	LM393DGKR
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Qualification Report

Approve Date 09-Jul-2021

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: LM2903DGKR	QBS Product Reference: LM2903BQDRQ1	QBS Product / Package Reference: LM2903BQDGKRQ1	QBS Package Reference: LM358BIDGKR
HTOL	Life Test, 150C	300 Hours	-	3/231/0	1/77/0	-
HAST	Biased HAST, 110C/85%RH	264 Hours	-	-	3/231/0	-
UHAST	Unbiased HAST 130C/85%RH	96 Hours	-	-	3/231/0	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	3/231/0	-
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	3/231/0	-
HBM	ESD - HBM	2000V	-	3/9/0	1/3/0	-
CDM	ESD - CDM	1000V	-	-	1/3/0	-
LU	Latch-up	Per JESD78	-	1/6/0	1/6/0	-
ED	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	-
MSL	Moisture Sensitivity, JEDEC	Level 1-260C	-	-	-	1/12/0
WBP	Bond Pull	Wires	-	-	3/300/0	1/76/0
WBS	Ball Bond Shear	Wires	-	-	3/300/0	1/76/0

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable
 - QBS: Qual By Similarity
 - Qual Device LM2903DGKR is qualified at LEVEL1-260C

- 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

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