12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20240930001.1
Qualification of RFAB using qualified Process Technology, Die Change, Assembly site (MLA) change & BOM update for select devices
Change Notification / Sample Request

Date: October 01, 2024
To: MOUSER PCN

Dear Customer:

This is an announcement of a change to a device that is currently offered by Texas Instruments (TI). The details of this change are on the following pages, and are in alignment with our standard product change notification (PCN) process.

TI requires acknowledgement of receipt of this notification within 30 days of the date of this notice. Lack of acknowledgement of this notice within 30 days constitutes acceptance and approval of this change. If samples or additional data are required, requests must be received within 30 days of this notification, given that samples are not built ahead of the change.

The Proposed First Ship date in this PCN letter is the earliest possible date that customers could receive the changed material. It is our commitment that the changed device will not ship before that date. If samples are requested within the 30 day sample request window, customers will still have 30-days to complete their evaluation regardless of the proposed 1st ship date.

This particular PCN is related to TI's multiyear transition plan for our two remaining factories with 150-millimeter production (DFAB in Dallas, Texas, and SFAB in Sherman, Texas). DFAB will remain open, but will focus on 200-mm production, with a smaller set of technologies. SFAB will close no earlier than 2024 and no later than 2025. As referenced in the "reason for change" below, these changes are part of our multiyear plan to transition these products to newer, more efficient manufacturing processes and technologies, underscoring our commitment to product longevity and supply continuity.

For questions regarding this notice or to provide acknowledgement of this PCN, you may contact your local Field Sales Representative or the Change Management team. For sample requests or sample related questions, contact your local Field Sales Representative. As always, we thank you for your continued business.

Change Management Team
SC Business Services

20240930001.1
Attachment: 1

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, you have recently purchased these devices. The corresponding customer part number is also listed, if available.

DEVICE	CUSTOMER PART NUMBER
LM2903BIDGKR	NULL
LM2903DGKR	NULL
LM293ADGKR	NULL
LM293DGKR	NULL
LM393ADGKR	NULL
LM393BIDGKR	NULL
LM393DGKR	NULL

Technical details of this Product Change follow on the next page(s).

PCN Number:	20240930001.1	PCN Date:	October 01, 2024
Title:	Qualification of RFAB using qualified Process Technology, Die Change, Assembly site (MLA) change & BOM update for select devices		
Customer Contact:	Change Management Team	Dept:	Quality Services
Proposed 1st Ship Date:	December 30, 2024	Sample requests accepted until:	October 31, 2024*

***Sample requests received after October 31, 2024 will not be supported.**

Change Type:

☒	Assembly Site	☒	Design	☐	Wafer Bump Material
☒	Assembly Process	☐	Data Sheet	☐	Wafer Bump Process
☒	Assembly Materials	☐	Part number change	☒	Wafer Fab Site
☐	Mechanical Specification	☐	Test Site	☒	Wafer Fab Material
☒	Packing/Shipping/Labeling	☐	Test Process	☒	Wafer Fab Process

PCN Details

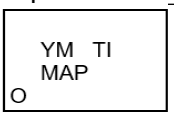
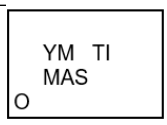
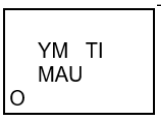
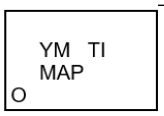
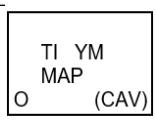
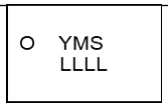
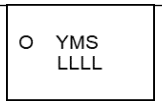
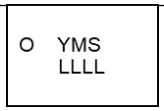
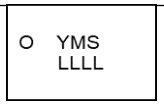
Description of Change:

Texas Instruments is pleased to announce the addition of RFAB using the TIB qualified process technology and additional BOM options for the devices listed below.

Current Fab Site			Additional Fab Site		
Current Fab Site	**Process**	**Wafer Diameter**	**Additional Fab Site**	**Process**	**Wafer Diameter**
SFAB	JI1	150 mm	RFAB	TIB	300 mm
CFAB	JI3	200 mm			

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

Construction differences are as follows:

	ASESH	HNA	UTL2	HFTF	MLA
Mount Compound	EY1000063	400180	PZ0013	A-18	4147858
Wire diam/type	1.0mil Cu	1.0mil Au	1.0mil Au	0.8mil, 1.0mil Cu	0.8mil Cu
Mold compound	EN2000763	450179	CZ0094	R-30	4211880
Lead finish	NiPdAuAg	NiPdAu	NiPdAu	Matte Sn	NiPdAu
Device marking (Sample device: LM2903DGKR)					
Top side					
Bottom Side					None

As a result of this change, for the condition of the inputs exceeding the maximum operating common mode range (which is a non-operational condition,) the state of the output will be low. This will match the behavior of the classic LMX93/LM2903 family.

Additionally, while there will be no relaxations to any min/max specified electrical parameters for any of the devices affected by this PCN, there will be changes to graphs in the "Typical Characteristics" section of the datasheet" as well as thermal resistance values in the "Thermal Information" section. A separate PCN listing these changes is planned to be issued by the end of the year.

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
☒ No Change	☒ No Change	☒ No Change	☒ 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
RFAB	**RFB**	**USA**	**Richardson**

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
HNA	HNT	THA	Ayutthaya
UTL2	NS2	THA	Bangpakong, Chachoengsao
ASESH	ASH	CHN	Shanghai
HFTF	HFT	CHN	Hefei
MLA	**MLA**	**MYS**	**Kuala Lumpur**

Sample product shipping label (not actual product label):

Product Affected:

LM2903BIDGKR	LM293ADGKR	LM393ADGKR	LM393DGKR
LM2903DGKR	LM293DGKR	LM393BIDGKR	

For alternate parts with similar or improved performance, please visit the product page on TI.com

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: LM2903DGKR	QBS Reference: OPA2206ADGKR	QBS Reference: LM2902BQPWRQ1	QBS Reference: SN74LV244AQDGSRQ1	QBS Reference: SN74LV273AQDGSRQ1	QBS Reference: SN74LV541AQDGSRQ1	QBS Reference: TLV1812QDGKRQ1	QBS Reference: LM2903BIDR	QBS Reference: LM2903BQDRQ1
HAST	A2	Biased HAST	130C	96 Hours	-	2/154/0	-	-	-	-	-	-	-
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	1/77/0	1/77/0	1/77/0	1/77/0	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	1/77/0	1/77/0	1/77/0	-	-	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	2/154/0	-	-	-	-	1/77/0	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	2/154/0	-	1/77/0	1/77/0	1/77/0	1/77/0	-	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	1/45/0	1/45/0	1/45/0	-	-	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	2/154/0	-	-	-	-	-	-	-
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	-	-	-	-	-	1/77/0	-	-
HTOL	B1	Life Test	150C	300 Hours	-	-	-	-	-	-	-	-	1/77/0
HTOL	B1	Life Test	150C	408 Hours	-	-	3/231/0	-	-	-	-	-	-
ESD	E2	ESD CDM	-	1000 Volts	1/3/0	-	-	-	-	-	-	1/3/0	-
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	-	-	-	-	1/3/0	-
LU	E4	Latch-Up	Per JESD78	-	-	-	-	-	-	-	-	1/3/0	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	-	-	-	-	-	-	-	1/30/0	1/30/0
FTY	E6	Final Test Yield	-	-	1/pass	-	-	-	-	-	-	-	-

- QBS: Qual By Similarity

- Qual Device LM2903DGKR is qualified at MSL1 260C
- Qual Device LM393DGKR is qualified at MSL1 260C

- 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/

TI Qualification ID: R-CHG-2310-095

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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