PCN Number:	20240221012.1	PCN Date:	February 21, 2024
Title:	Qualification of FFAB using qualified Process Technology, Die Revision, and additional Assembly site option for select devices		
Customer Contact:	Change Management team	Dept:	Quality Services
Proposed 1st Ship Date:	May 21, 2024	Sample requests accepted until:	March 22, 2024*

***Sample requests received after March 22, 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 Materials
☒ Packing/Shipping/Labeling	☐ Test Process	☒ Wafer Fab Process

PCN Details

Description of Change:

Texas Instruments is pleased to announce the addition of FFAB using the BICOMHD qualified process technology and additional Assembly site (TFME) option for the devices listed below.

Current Fab Site			Additional Fab Site		
Current Fab Site	Process	Wafer Diameter	Additional Fab Site	Process	Wafer Diameter
SFAB	CBC10	150 mm	FFAB	BICOMHD	200 mm

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

Construction differences are as follows:

	TFME	CDAT
Bond wire composition, diameter	Au, 1.0 mil	Cu, 1.0 mil
Lead Finish	NiPdAu	Matte Sn
Mold Compound	SID#R-13	4222198
Mount Compound	SID# A-03	4226215
Device marking	NSC Logo, Pin one stripe	No Logo, Pin one dot

Upon expiry of this PCN, there will be a transition period where TI will combine lead free solutions in a single ***standard part number*** For example; ***OPA690IDBVR*** – can ship with both Matte Sn and NiPdAu.

Example:

- Customer order for 7500 units of OPA690IDBVR with 2500 units SPQ (Standard Pack Quantity per Reel).

- TI can satisfy the above order in one of the following ways.
  - I. 3 Reels of NiPdAu finish.
  - II. 3 Reels of Matte Sn finish
  - III. 2 Reels of Matte Sn and 1 reel of NiPdAu finish.
  - IV. 2 Reels of NiPdAu and 1 reel of Matte Sn finish.

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 and 200-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
FR-BIP-1	**TID**	**DEU**	**Freising**

Die Rev:

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

Assembly/Test Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
TFME	NFM	CHN	Economic Development Zone
TI Chengdu	**CDA**	**CHN**	**Chengdu**

Sample product shipping label (not actual product label)

Product Affected:

OPA690IDBVR

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: OPA690IDBVR	QBS Package Reference: TLV9061IDBVR	QBS Package Reference: OPA328DBVT	QBS Package Reference: TPS3840PH30DBVRQ1	QBS Package Reference: LV3842XDBVR	QBS Package Reference: TLV9061IDBVR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	3/231/0	3/231/0	3/231/0	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	-	3/231/0	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	3/231/0	3/231/0	3/231/0	-	3/231/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	-	3/135/0	3/231/0
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	3/231/0	3/231/0	3/231/0	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	3/231/0	-	-	3/231/0	-
HTOL	B1	Life Test	150C	300 Hours	-	-	3/231/0	-	-	-

Type	#	Test Name	Condition	Duration	Qual Device: OPA690IDBVR	QBS Package Reference: TLV9061IDBVR	QBS Package Reference: OPA328DBVT	QBS Package Reference: TPS3840PH30DBVRQ1	QBS Package Reference: LV3842XDBVR	QBS Package Reference: TLV9061IDBVR
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	3/3000/0	-	-	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	-	1/15/0	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	-	1/15/0	-
PD	C4	Physical Dimensions	(per mechanical drawing)	-	-	-	3/15/0	3/15/0	3/30/0	-
ESD	E2	ESD CDM	-	250 Volts	-	3/9/0	-	1/3/0	-	-
ESD	E2	ESD CDM	-	1500 Volts	1/3/0					
ESD	E2	ESD HBM	-	1000 Volts	-	3/9/0	-	1/3/0	-	-
ESD	E2	ESD HBM	-	2000 Volts	1/3/0	-	-	-	-	-
LU	E4	Latch-Up	Per JESD78	-	1/3/0	3/9/0	-	1/6/0	-	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	3/90/0	-	1/30/0	3/90/0	-

- QBS: Qual By Similarity
- Qual Device OPA690IDBVR 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-NPD-2303-121

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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