PCN Number:	20220127001.1	**PCN Date:**	January 31, 2022
Title:	Qualification of new Fab site (FFAB) using qualified Process Technology, Die Revision, Datasheet update and additional Assembly site/BOM options for select devices		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	Apr 30, 2022	**Estimated Sample Availability:**	Date provided at sample request.

Change Type:					
☒	Assembly Site	☐	Assembly Process	☒	Assembly Materials
☒	Design	☒	Electrical Specification	☐	Mechanical Specification
☐	Test Site	☒	Packing/Shipping/Labeling	☐	Test Process
☐	Wafer Bump Site	☐	Wafer Bump Material	☐	Wafer Bump Process
☒	Wafer Fab Site	☒	Wafer Fab Materials	☒	Wafer Fab Process
		☐	Part number change		

PCN Details

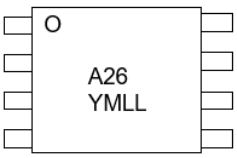
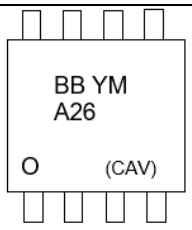
Description of Change:

Texas Instruments is pleased to announce the qualification of a new fab & process technology (FFAB, BICOM3) and assembly site/BOM options (MLA) for selected devices as listed below in the product affected section.

Current Fab Site			Additional Fab Site		
Current Fab Site	**Process**	**Wafer Diameter**	**Additional Fab Site**	**Process**	**Wafer Diameter**
SFAB	JIBB	150 mm	FFAB	BICOM3	200 mm

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

Construction differences are noted below:
Group 1 Devices:

	ASESH	**TI Malaysia**
Die thickness (um)	203	191
Mount compound	EY1000063	4147858
Mold compound	EN2000631	4226323
Wire type	Au	Cu
Leadframe finish	NiPdAuAg	NiPdAu
Marking Differences	 YM = YEAR MONTH DATE CODE LL = ASSEMBLY LOT CODE O = PIN 1 INDICATOR (MARK)	 BB = BB LETTERS YM = YEAR MONTH DATE CODE O = PIN 1 INDICATOR (DIMPLE) CAV = CAVITY NUMBER

Group 2 Devices:

	Current - MLA	**New - MLA**
Mold Compound	4209640	4226323
Mount Compound	4205846	4147858
Bond Wire Composition/Diameter	Au/1.15 mils	Cu/1.0 mil
MSL	MSL3	MSL2

The datasheet will be changing as a result of the above mentioned changes. The datasheet change details can be reviewed in the datasheet revision history. The link to the revised datasheet is available in the table below.

TEXAS INSTRUMENTS

INA126, INA2126
SBOS062C – SEPTEMBER 2000 – REVISED JANUARY 2022

Changes from Revision B (December 2015) to Revision C (December 2021) **Page**

- Updated the numbering format for tables, figures, and cross-references throughout the document....1
- Added dual supply specification to *Absolute Maximum Ratings* 5
- Deleted redundant operating temperature and input common mode voltage specifications in *Recommended Operating Conditions* 5
- Added dual supply and specified temperature specifications in *Recommended Operating Conditions* 5
- Added proper signs for PSRR and input bias current specifications in *Electrical Characteristics* 7
- Deleted V_O = 0 V test condition of common-mode voltage specification in *Electrical Characteristics* 7
- Changed common-mode voltage specification from ±11.25 V minimum, to –11.25 V minimum and 11.25 V maximum, in *Electrical Characteristics* 7
- Changed minimum CMRR specification for INA126U/E, INA2126E from 83 dB to 80 dB in *Electrical Characteristics* 7
- Added typical input bias current specification of ±10 nA for INA126PA/UA/EA and INA2126PA/UA/EA in *Electrical Characteristics* 7
- Changed current noise specifications in *Electrical Characteristics* from 60 fA/$\sqrt{Hz}$ to 160 fA/$\sqrt{Hz}$ for f = 1 kHz, and from 2 pApp to 7.3 pApp for f = 0.1 Hz to 10 Hz....7
- Changed test condition for short-circuit current specification in *Electrical Characteristics* from "Short circuit to ground" to "Continuous to V_S / 2" for clarity....7
- Changed short-circuit current specification in *Electrical Characteristics* from +10/-5 mA to ±5 mA....7
- Deleted redundant voltage range, operating temperature range, and specification temperature range specifications from *Electrical Characteristics* 7
- Changed Figures 6-7, 6-10, 6-13, 6-14, 6-15, 6-16, 6-17 9
- Added Figure 6-11....9

Product Family	Current Datasheet Number	New Datasheet Number	Link to full datasheet
INA126, INA2126	SBOS062B	SBOS062C	http://www.ti.com/product/INA126

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-milimeter 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]**
D	**A**

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
ASESH	ASH	CHN	Shanghai
TI Malaysia	**MLA**	**MYS**	**Kuala Lumpur**

Sample product shipping label (not actual product label)

Product Affected:

Group 1 - FFAB/Process migration, Die Rev, Datasheet & MLA A/T Site + BOM updates:			
INA126E/250	INA126E/2K5	INA126EA/250	INA126EA/2K5G4
INA126E/250G4	INA126E/2K5G4	INA126EA/2K5	

Group 2 - FFAB/Process migration, Die Rev, Datasheet and BOM updates:			
INA126U	INA126U/2K5G4	INA126UA/2K5	INA126UAG4
INA126U/2K5	INA126UA		

Qualification Report

Approve Date 30-Nov-2021

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

Type	Test Name / Condition	Duration	Qual Device: INA126U	QBS Process Reference: INA828ID	QBS Process Reference: OPA202ID	QBS Package Reference: INA849D
HTOL	Life Test, 100C[A]	300 Hours	-	-	-	1/77/0
HTOL	Life Test, 150C	300 Hours	1/77/0	3/231/0	3/231/0	-
HBM	ESD - HBM	500 V	1/3/0	1/3/0	3/9/0	1/3/0
HBM	ESD - HBM	1000 V	1/3/0	1/3/0	3/9/0	1/3/0
HBM	ESD - HBM	2000 V	1/3/0	1/3/0	3/9/0	1/3/0
CDM	ESD - CDM	1000 V	1/3/0	1/3/0	3/9/0	1/3/0
CDM	ESD - CDM	1500 V	1/3/0	-	-	1/3/0
CDM	ESD - CDM	750 V	1/3/0	-	3/9/0	1/3/0
LU	Latch-up	Per JESD78	1/6/0	1/6/0	1/6/0	1/6/0
ED	Electrical Characterization	Per Datasheet Parameters	1/30/0	3/90/0	3/Pass	1/30/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	3/231/0	3/231/0	-
HTSL	High Temp Storage Bake 170C	420 Hours	-	3/231/0	3/231/0	3/231/0
LU	Latch-up	Per JESD78	1/6/0	1/6/0	1/6/0	1/6/0
TC	Temperature Cycle, -65/150C	500 Cycles	1/77/0	3/231/0	3/231/0	3/231/0
THB	Biased Temperature and Humidity, 85C/85%RH	1000 Hours	-	-	-	3/231/0
UHAST	Unbiased HAST 130C/85%RH	96 Hours	-	3/231/0	3/231/0	3/231/0

- QBS: Qual By Similarity
- Qual Device INA126U is qualified at L2, 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/

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

[A] Tj of device at 150C

Qualification Report

Approve Date 13-Jan-2022

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

Type	Test Name / Condition	Duration	Qual Device: INA126E	QBS Product Reference: INA126U	QBS Process Reference: INA828ID	QBS Package Reference: OPA2145IDGK	QBS Package Reference: OPA2205ADGK	QBS Package Reference: OPA2206ADGK
HTOL	Life Test, 150C	300 Hours	-	1/77/0	3/231/0	-	1/77/0	2/154/0
ELFR	Early Life Failure Rate, 150C	24 Hours	-	-	-	-	1/800/0	2/2400/0
HBM	ESD - HBM	2000V	-	1/3/0	1/3/0	-	1/3/0	1/3/0
CDM	ESD - CDM	1000V	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	2/6/0
LU	Latch-up	Per JESD78	-	1/6/0	1/6/0	-	1/6/0	1/6/0
ED	Electrical Characterization	Per Datasheet Parameters	1/30/0	1/30/0	3/90/0	1/30/0	1/30/0	1/30/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/231/0	-	1/77/0	2/154/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	3/231/0	-	1/77/0	2/154/0
LI	Lead Pull	Lead Pull	-	-	-	-	1/6/0	2/12/0
TC	Temperature Cycle, -65/150C	500 Cycles	-	1/77/0	3/231/0	1/77/0	1/77/0	2/154/0
UHAST	Unbiased HAST 130C/85%RH	96 Hours	-	-	3/231/0	1/77/0	1/77/0	2/154/0

- QBS: Qual By Similarity
- Qual Device INA126E is qualified at L2, 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/

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

For questions regarding this notice, e-mails can be sent to the contacts shown below or your local Field Sales Representative.

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Asia Pacific	PCNAsiaContact@list.ti.com
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