

<b>PCN Number:</b>	20230927004.1	<b>PCN Date:</b>	September 29, 2023
<b>Title:</b>	Qualification of FFAB using qualified Process Technology, Die Revision, Datasheet update and additional Assembly BOM options for select devices		
<b>Customer Contact:</b>	Change Management team	<b>Dept:</b>	Quality Services
<b>Proposed 1<sup>st</sup> Ship Date:</b>	Dec 28, 2023	<b>Estimated Sample Availability:</b>	Oct 28, 2023

**\*Sample requests received after October 28, 2023 will not be supported.**

Change Type:					
<input type="checkbox"/>	Assembly Site	<input checked="" type="checkbox"/>	Design	<input type="checkbox"/>	Wafer Bump Material
<input type="checkbox"/>	Assembly Process	<input checked="" type="checkbox"/>	Data Sheet	<input type="checkbox"/>	Wafer Bump Process
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change	<input checked="" type="checkbox"/>	Wafer Fab Site
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Test Site	<input checked="" type="checkbox"/>	Wafer Fab Materials
<input checked="" type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<input checked="" type="checkbox"/>	Wafer Fab Process

## PCN Details

### Description of Change:

Texas Instruments is pleased to announce the qualification of a new fab & process technology (FFAB, BICOM3XHV) and assembly 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	BICOM3XHV	200 mm

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

Assembly BOM options are noted below:

	Current	Additional
Bond Wire Composition/Diameter	Au, 1.2 mils	Cu, 1.0 mil
Mount compound	4205846	4147858
Mold compound	4209640	4226323

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 links to the revised datasheets are available in the table below.



INA141  
SBOS052A – SEPTEMBER 2000 – REVISED AUGUST 2023

Changes from Revision * (September 2000) to Revision A (August 2023)	Page
• Updated the numbering format for tables, figures, and cross-references throughout the document.....	1
• Added the <i>Package Information table</i> , and the <i>Pin Configuration and Functions, Specifications, ESD Ratings, Recommended Operating Conditions, Thermal Information, Application and Implementation, Device and Documentation Support, and Mechanical, Packaging, and Orderable Information</i> sections.....	1
• Deleted PDIP package from data sheet.....	1
• Added single supply specification to Absolute Maximum Ratings.....	4
• Added note that output short-circuit (to ground) means short-circuit to $V_{S/2}$ in Absolute Maximum Ratings.....	4
• Added "TA = –40°C to +85°C" test condition to Offset voltage vs temperature specification in the Electrical Characteristics and renamed to Offset voltage drift.....	5
• Added test conditions "VREF = 0 V, VCM = VS / 2 and G = 10 below the title.....	5
• Deleted common-mode voltage typical values in the Electrical Characteristics and combined to one line.....	5
• Added "TA = –40°C to +85°C" test condition to Bias current vs temperature specification in the Electrical Characteristics and renamed to Input bias current drift for clarity.....	5

- Added "TA = –40°C to +85°C" test condition to Offset current vs temperature specification in Electrical Characteristics and renamed to Input offset current drift for clarity..... 5
- Added "TA = –40°C to +85°C" test condition for Gain error vs temperature in the Electrical Characteristics and renamed to Gain drift for clarity..... 5
- Changed parameter names from "Voltage - Positive" and "Voltage - Negative" to "Output voltage" in the Electrical Characteristics..... 5
- Added "Continuous to VS / 2" test condition short-circuit current specification in the Electrical Characteristics for clarity..... 5
- Changed short-circuit current typical value from +6/-15 mA ±20 mA..... 5
- Changed bandwidth typical value from 1 MHz to 610 kHz in the Electrical Characteristics..... 5
- Changed slew rate typical value from 4 V/μs to 2 V/μs in the Electrical Characteristics..... 5
- Deleted redundant voltage range, operating temperature range, and specification temperature range specifications from Electrical Characteristics..... 5
- Changed Figure 6-2, *Common-Mode Rejection vs Frequency* ..... 7
- Changed Figure 6-8, *Quiescent Current and Slew Rate vs Temperature* ..... 7
- Changed *Output Voltage Swing vs Output Current* single plot to Figure 6-12, *Positive Output Voltage Swing vs Output Current* and Figure 6-12, *Negative Output Voltage Swing vs Output Current* ..... 7
- Changed Figure 6-18, *Small-Signal Step Response* ..... 7
- Changed Figure 6-19, *Large-Signal Step Response* ..... 7
- Changed Figure 6-20, *0.1-Hz to 10-Hz Input-Referred Voltage Noise* ..... 7
- Changed G from 1 to 10 V/V at the end of the *Application Information* section..... 11
- Deleted reference to *Input Bias Current vs Common-Mode Input Voltage* plot..... 13

Product Folder	Current Datasheet Number	New Datasheet Number	Link to full datasheet
INA141	SBOS052	<b>SBOS052A</b>	<a href="http://www.ti.com/product/INA141">http://www.ti.com/product/INA141</a>

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
<b>FR-BIP-1</b>	<b>TID</b>	<b>DEU</b>	<b>Freising</b>

##### Die Rev:

Current	New
Die Rev [2P]	<b>Die Rev [2P]</b>
E	<b>A</b>

Sample product shipping label (not actual product label)

 <b>TEXAS INSTRUMENTS</b> MADE IN: Malaysia 2DC: 29: MSL '2 / 260C/1 YEAR SEAL DT MSL 1 / 235C/UNLIM 03/29/04 OPT: 39 ITEM: 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: CHE (21L) CCO: USA (22L) ASO: MLA (23L) ACO: MYS
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<b>Product Affected:</b>			
INA141U	INA141U/2K5	INA141UA	INA141UA/2K5

For alternate parts with similar or improved performance, please visit the product page on [TI.com](http://ti.com)

#### Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: <a href="#">INA141UA</a>	QBS Reference: <a href="#">OPA1637DGKT</a>	QBS Reference: <a href="#">INA849DR</a>
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	-
HAST	A2	Temperature Humidity Bias	85C/85%RH	1000 Hours	-	-	3/231/0
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	3/231/0	3/231/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	3/231/0	3/231/0
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	3/231/0	3/231/0
HTOL	B1	Life Test	100C <sup>1</sup>	300 Hours	-	-	1/77/0
HTOL	B1	Life Test	150C	300 Hours	-	3/231/0	-
ELFR	B2	Early Life Failure Rate	150C	24 Hours	-	3/2399/0	-
ESD	E2	ESD CDM	-	500 Volts	1/3/0	3/9/0	1/3/0
ESD	E2	ESD HBM	-	2000 Volts	1/3/0	3/9/0	1/3/0
LU	E4	Latch-Up	Per JESD78	-	1/3/0	3/18/0	1/6/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	3/90/0	1/30/0

- QBS: Qual By Similarity
- Qual Device INA141UA is qualified at MSL2 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-2109-093

<sup>1</sup> Tj=150C

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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