

PCN Number:	20240501000.1	PCN Date:	May 02, 2024
Title:	Qualification of FFAB using qualified Process Technology and additional Assembly BOM options for select devices		
Customer Contact:	Change Management team	Dept:	Quality Services
Proposed 1st Ship Date:	July 31, 2024	Estimated Sample Availability:	June 01, 2024*

***Sample requests received after June 01, 2024 will not be supported.**

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

PCN Details

Description of Change:

Texas Instruments is pleased to announce the qualification of its FFAB fabrication facility as an additional Wafer Fab option in addition to a BOM option for the devices listed below.

Current Fab Site			Additional Fab Site		
Current Fab Site	Process	Wafer Diameter	Additional Fab Site	Process	Wafer Diameter
SEMEFAB	DI-452	100 mm	FFAB	BICOM3XHV	200 mm

Construction differences are as follows:

	Current	Proposed
Wire diam/type	1.15mil Au	1.0mil Cu
Die Coat	None	4221706
Mount compound	4205846	4147858
Mold compound	4209640	4226323
MSL level	3	2



OPA627, OPA637
SBOS165B – SEPTEMBER 2000 – REVISED APRIL 2024

Changes from Revision A (April 2015) to Revision B (April 2024)

Page

• Added OPA627BU preview device and related information to data sheet.....	1
• Deleted Difet references throughout the data sheet.....	1
• Changed OPA627 <i>Simplified Schematic</i> to OPA627 <i>Low-Pass Filter</i>	1
• Deleted P package (PDIP, 8) from data sheet.....	1
• Updated text in <i>Description</i>	1
• Updated pin configuration diagrams and functions tables in <i>Pin Configuration and Functions</i>	3
• Changed signal input pin voltage common-mode from "(V-) – 2V to (V+) + 2V" to "(V-) – 0.5V to (V+) + 0.5V" and differential from total $V_S + 4$ to $(V+) - (V-)$ in <i>Absolute Maximum Ratings</i>	4
• Added input pin current range row to <i>Absolute Maximum Ratings</i>	4
• Updated OPA627AU <i>ESD Ratings</i>	4
• Updated specified temperature range to fix typo in <i>Recommended Operating Conditions</i>	4

• Updated OPA627AU <i>Thermal Information</i>	5
• Updated <i>Electrical Characteristics</i> to individual tables.....	6
• Updated parameter abbreviations and names in all <i>Electrical Characteristics</i>	6
• Added nominal conditions to the header of all <i>Electrical Characteristics</i>	6
• Added \pm to input offset voltage, input offset voltage drift, input bias current, and input offset current values to all <i>Electrical Characteristics</i>	6
• Changed OPA627AU input voltage noise from 0.8V _{PP} to 0.34V _{PP}	6
• Updated OPA627AU input voltage noise density values.....	6
• Changed OPA627AU common-mode input impedance from 7pF to 9pF.....	6
• Changed OPA627AU gain-bandwidth product from 16MHz to 45MHz.....	6
• Added OPA627AU capacitive load test condition to gain-bandwidth product and settling time.....	6
• Changed OPA627AU slew rate TYP value from 55V/ μ s to 150V/ μ s and deleted MIN value.....	6
• Changed OPA627AU settling time from 550ns to 120ns for 0.01%, and from 450ns to 110ns for 0.1%.....	6
• Added OPA627AU THD+N V _O test condition.....	6
• Changed OPA627AU current output from \pm 45 to \pm 30mA.....	6
• Changed OPA627AU short-circuit current TYP value from \pm 70mA/-50mA to \pm 45mA and deleted MIN and MAX values.....	6
• Changed OPA627AU open-loop output impedance from 55 Ω to 13.5 Ω	6
• Updated <i>Functional Block Diagram</i>	18
• Updated text in <i>Offset Voltage Adjustment</i>	20
• Changed protection range from "+V _S + 2V to -V _S - 2V" to "+V _S + 0.5V to -V _S - 0.5V" in <i>Input Protection</i> ...	23
• Updated Figure 6-8, OPA627 EMIRR IN+ vs Frequency, Table 6-1, OPA627 EMIRR IN+ Frequencies of Interest, and related description in <i>EMI Rejection Ratio (EMIRR)</i>	24
• Deleted duplicate Figure 46; see Figure 6-4, <i>Connection of Input Guard for Lower I_B</i>	31
• Updated Figure 45, and moved to Figure 7-9 and Figure 7-10.....	31

The datasheet number will be changing.

Device Family	Change From:	Change To:
OPA6x7	SBOS165A	SBOS165B

These changes may be reviewed at the datasheet links provided.

<http://www.ti.com/product/OPA627>

Qual details are provided in the Qual Data Section.

Reason for Change:

Continuity of supply.

- 1) To align with world technology trends and use wiring with enhanced mechanical and electrical properties
- 2) Maximize flexibility within our Assembly/Test production sites.
- 3) Cu is easier to obtain and stock

Anticipated impact on Fit, Form, 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
SEMEFAB	---	GBR	Glenrothes
FR-BIP-1	TID	DEU	Freising

Sample product shipping label (not actual product label)





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
(21L) CCO:USA
(22L) ASO: MLA (23L) ACO: MYS

Product Affected:

OPA627AU	OPA627AU/2K5E4	OPA627AUG4
OPA627AU/2K5	OPA627AUE4	

Qualification Report

Approve Date 21-MARCH -2024

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: OPA627AU	QBS Product/Package Reference: OPA828ID	QBS Package Reference: SN65HVDA195QDRQ1	QBS Process Reference: OPA2205ADGKR	QBS Process Reference: OPA2206ADGKR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	3/231/0	1/77/0	2/154/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	3/231/0	-	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	3/231/0	-	1/77/0	2/154/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	3/231/0	3/231/0	1/77/0	2/154/0
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	3/231/0	-	1/77/0	2/154/0
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	-	1/45/0	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	2/154/0	3/231/0	-	-
HTOL	B1	Life Test	150C	300 Hours	-	-	-	1/77/0	2/154/0
ELFR	B2	Early Life Failure Rate	150C	24 Hours	-	-	-	1/800/0	2/2000/0
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	Cpk>1.67	-	-	-	3/30/0	-	-
ESD	E2	ESD CDM	-	1500 Volts	-	-	1/3/0	-	-
ESD	E2	ESD CDM	-	250 Volts	-	1/3/0	-	1/3/0	2/6/0
ESD	E2	ESD HBM	-	1000 Volts	-	1/3/0	-	1/3/0	2/6/0

LU	E4	Latch-Up	Per JESD78	-	-	1/3/0	1/6/0	1/6/0	1/6/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	3/90/0	1/30/0	2/60/0
FTY	E6	Final Test Yield	-	-	1/Pass	-	-	-	-

QBS: Qual By Similarity

Qual Device OPA627AU 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/>

For questions regarding this notice, e-mails can be sent to the Change Management team or your local Field Sales Representative.

IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to TI's Terms of Sale (www.ti.com/legal/termsofsale.html) or other applicable terms available either on ti.com or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products.