PCN Number:	20240314000.1	**PCN Date:**	March 15, 2024
Title:	Datasheet for THS403x		
Customer Contact:	Change Management	**Dept:**	Quality Services
Proposed 1st Ship Date:	June 14, 2024		
Change Type:			

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

Notification Details

Description of Change:

Texas Instruments Incorporated is announcing an information only notification.
The product datasheet(s) is being updated as summarized below.

TEXAS INSTRUMENTS

THS4031, THS4032

SLOS224J – JULY 1999 – REVISED FEBRUARY 2024

Changes from Revision I (May 2018) to Revision J (February 2024) **Page**

- Updated the numbering format for tables, figures, and cross-references throughout the document..... 1
- Changed table note 1 in *Absolute Maximum Ratings* to add additional clarification..... 4
- Changed output current max in *Absolute Maximum Ratings* from 150 mA to 240 mA..... 4
- Changed differential supply voltage in *Absolute Maximum Ratings* from ± 4 V to ± 1.5 V..... 4
- Added continuous input current in *Absolute Maximum Ratings* 4
- Deleted M-suffix temperature range and in *Absolute Maximum Ratings* 4
- Deleted JG and FK package references in *Absolute Maximum Ratings* 4
- Changed charged-device model (CDM) reference from JESD22-C101 to JS-002 in *ESD Ratings* 4
- Updated *Thermal Information: THS4031* for the D and DGN packages..... 5
- Deleted full-power bandwidth specification from *Electrical Characteristics: THS4031, R_L = 150 Ω* 6
- Added *Electrical Characteristics: THS4031, RL = 150 Ω* section..... 6
- Changed bandwidth for 0.1-dB flatness in *Electrical Characteristics: THS4031, R_L = 150 Ω* from 50 MHz to 9 MHz for V_{CC} = ±15 V..... 6

- Changed bandwidth for 0.1-dB flatness in *Electrical Characteristics: THS4031, R_L = 150 Ω* from 45 MHz to 9 MHz for V_{CC} = ±5 V.....6
- Changed settling time to 0.1% in *Electrical Characteristics: THS4031, R_L = 150 Ω* from 60 ns to 70 ns for V_{CC} = ±15 V.....6
- Changed settling time to 0.1% in *Electrical Characteristics: THS4031, R_L = 150 Ω* from 45 ns to 55 ns for V_{CC} = ±5 V.....6
- Deleted total harmonic distortion for 1 kΩ in *Electrical Characteristics THS4031, R_L = 150 Ω* 6
- Changed input voltage noise - in *Electrical Characteristics: THS4031, R_L = 150 Ω* from 1.6 nV/√Hz to 1.2 nV/√Hz.....6
- Changed input current noise in *Electrical Characteristics: THS4031, R_L = 150 Ω* from 1.2 pA/√Hz to 2.3 pA/√Hz.....6
- Changed open loop gain condition in *Electrical Characteristics THS4031, R_L = 150 Ω* from 1 kΩ to 150 Ω.....6
- Changed open loop gain minimum in *Electrical Characteristics THS4031, R_L = 150 Ω* from 98 dB to 100 dB for V_{CC} = ±15 V, T_A = 25 °C.....6
- Changed open loop gain minimum specification in *Electrical Characteristics THS4031, R_L = 150 Ω* from 95 dB to 98 dB for VCC = ±5 V, TA = 25 °C.....6
- Updated input offset voltage values and units specification in *Electrical Characteristics THS4031, R_L = 150 Ω* 6

- Added input offset current specification in *Electrical Characteristics THS4031, R_L = 150 Ω* table..... 6
- Changed common-mode input voltage range typical in *Electrical Characteristics THS4031,R_L = 150 Ω* from ±14 V to ±14.3 V for V_{CC} = ±15 V.....6
- Changed common-mode input voltage range typical in *Electrical Characteristics THS4031, R_L = 150 Ω* from ±4 V to ±4.3 V for V_{CC} = ±5 V.....6
- Deleted output voltage swing for R_L = 1 kΩ in *Electrical Characteristics THS4031, R_L = 150 Ω* 6
- Changed output voltage swing condition for V_{CC} = ±15 V in *Electrical Characteristics THS4031, R_L = 150 Ω* from 150 Ω to 250 Ω.....6
- Changed output voltage swing condition for V_{CC} = ±5 V in *Electrical Characteristics THS4031, R_L = 150 Ω* from 250 Ω to 150 Ω.....6
- Deleted short circuit current in *Electrical Characteristics: THS4031, R_L = 150 Ω* 6
- Changed output current load resistance typical in *Electrical Characteristics THS4031, R_L = 150 Ω* from 20 Ω to 10 Ω.....6
- Changed output current typical in *Electrical Characteristics THS4031, R_L = 150 Ω* from 90 mA to 200 mA for V_{CC} = ±15V.....6
- Changed output current typical in *Electrical Characteristics THS4031, R_L = 150 Ω* from 70 mA to 160 mA for V_{CC} = ±5V.....6
- Changed output resistance typical in *Electrical Characteristics THS4031, R_L = 150 Ω* from 13 Ω to 5 Ω..... 6
- Changed supply current (each amplifier) typical in *Electrical Characteristics THS4031, R_L = 150 Ω* from 8.5 mA to 7.5 mA for V_{CC} = ±15 V.....6
- Changed supply current (each amplifier) typical in *Electrical Characteristics THS4031, R_L = 150 Ω* from 7.5 mA to 6.5 mA for V_{CC} = ±5 V.....6
- Changed bandwidth for 0.1-dB flatness in *Electrical Characteristics: THS4031 , R_L = 1 kΩ* from 50 MHz to 9 MHz for V_{CC} = ±15 V.....8
- Changed bandwidth for 0.1-dB flatness in *Electrical Characteristics: THS4031, R_L = 1 kΩ* from 45 MHz to 9 MHz for V_{CC} = ±5 V.....8
- Changed full power bandwidth calculation from slew rate / [$\sqrt{\pi}V_{OC(Peak)}$] to slew rate / [$\pi V_{O(P-P)}$] in *Electrical Characteristics THS4031, R_L = 1 kΩ* 8
- Changed full power bandwidth in *Electrical Characteristics: THS4031, R_L = 1 kΩ* from 2.3 to 1.6 for V_{CC} = ±15 V.....8
- Changed full power bandwidth specification in *Electrical Characteristics: THS4031, R_L = 1 kΩ* from 7.1 to 5.1 for V_{CC} = ±5 V.....8
- Changed 0.1% setting time in *Electrical Characteristics: THS4031, R_L = 1 kΩ* from 60 to 70 for V_{CC} = ±15 V. 8
- Changed 0.1% setting time in *Electrical Characteristics: THS4031, R_L = 1 kΩ* from 45 to 55 for V_{CC} = ±15 V 8

- Deleted total harmonic distortion, voltage noise, current noise, differential gain error, and differential phase error for R_L = 150 Ω in *Electrical Characteristics THS4031, R_L = 1 kΩ* 8
- Changed open loop gain minimum in *Electrical Characteristics THS4031, R_L = 1 kΩ* from 98 dB to 100 dB for VCC = ±15 V, T_A = 25 °C..... 8
- Changed open loop gain minimum in *Electrical Characteristics THS4031, R_L = 1 kΩ* from 95 dB to 98 dB for V_{CC} = ±5 V, T_A = 25 °C..... 8
- Changed input offset voltage typical in *Electrical Characteristics THS4031, R_L = 1k Ω* from 0.5 mV to 0.3 mV..... 8
- Changed input bias current typical in *Electrical Characteristics THS4031, R_L = 1 kΩ* from 3 µA to 9 µA for T_A = 25°C..... 8
- Changed input bias current max in *Electrical Characteristics THS4031, R_L = 1 kΩ* from 6 µA to 20 µA for T_A = 25°C..... 8
- Changed input bias current max in *Electrical Characteristics THS4031, R_L = 1 kΩ* from 8 µA to 33 µA for T_A = full range..... 8
- Deleted output voltage swing for R_L = 150 Ω and R_L = 250 Ω in *Electrical Characteristics THS4031, R_L = 1 kΩ* table..... 8
- Deleted output current in *Electrical Characteristics THS4031, R_L = 1 kΩ* table..... 8
- Deleted output resistance in *Electrical Characteristics: THS4031, R_L=1 kΩ*..... 8
- Changed supply current (each amplifier) typical in *Electrical Characteristics THS4031, R_L = 1 kΩ* from 8.5 mA to 7.5 mA for V_{CC} = ±15 V..... 8
- Deleted full-power bandwidth specification from *Electrical Characteristics: THS4032, R_L = 150 Ω* 11
- Changed title of *Electrical Characteristics: R_L = 150 Ω* to *Electrical Characteristics: THS4032, R_L = 150 Ω* ..11
- Updated input offset voltage units specification in *Electrical Characteristics THS4032, R_L = 150 Ω* 11

- Deleted 1 kΩ open loop gain specification from in *Electrical Characteristics THS4032, R_L = 150 Ω* 11
- Changed title of Electrical Characteristics: R_L = 1 kΩ to Electrical Characteristics: THS4032 R_L = 1 kΩ.....12
- Deleted 150 Ω input voltage noise, input current noise, differential gain error, and differential phase error, specifications from *Electrical Characteristics: THS4032, R_L = 1 kΩ* 12
- Deleted output voltage swing for RL = 150 Ω and RL = 250 Ω in Electrical Characteristics THS4032, RL = 1 kΩ table..... 12
- Added *Typical Characteristics: THS4031* section..... 14
- Changed title of *Typical Characteristics* to *Typical Characteristics: THS4032* 20
- Deleted *Parameter Measurement Information* section..... 28
- Deleted *Noise Calculation and Noise Figure*, *Optimizing Frequency Response*, and *Offset Voltage* sections 29
- Changed *Application Information* section to latest standard format..... 30
- Changed name of *General Configuration* section to *Low-pass Filter Configurations* 31
- Deleted thermal calculations in *General PowerPAD™ Integrated Circuit Package Design Considerations* ... 35

The datasheet number will be changing.

Device Family	Change From:	Change To:
THS403x	SLOS224I	**SLOS224J**

These changes may be reviewed at the datasheet links provided.

http://www.ti.com/product/THS4031

Reason for Change:

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.

Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):

Electrical specification performance changes as indicated above.
Changes to product identification resulting from this PCN:
None.
Product Affected:

THS4031IDGN	THS4031IDGNR	THS4032ID	THS4031IDR
THS4032IDR	THS4031CDGN	THS4031CD	THS4031CDGNR
THS4031ID			

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