PCN Number:	20230522006.1	**PCN Date:**	May 23, 2023
Title:	Datasheet for THS402x		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	Aug. 22, 2023		
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

THS4021, THS4022
SLOS265D – SEPTEMBER 1999 – REVISED MAY 2023

Changes from Revision C (July 2007) to Revision D (May 2023) **Page**

- Updated the numbering format for tables, figures, and cross-references throughout the document..... 1
- Added the *Applications*, *Specifications*, *Application and Implementation*, *Thermal Information Table*, *Pin Configuration and Functions*, *Electrical Characteristics: THS4021xD*, *Typical Characteristics: THS4021xD*, *Device and Documentation Support*, and *Mechanical, Packaging, and Orderable Information* sections.....1
- Changed data sheet title from "350-MHz Low-Noise High-Speed Amplifiers" to "2-GHz, 10-V/V Stable, Low-Noise, High-Speed Amplifiers" 1
- Changed front-page image from pin diagrams to simplified application.....1
- Removed *Dissipation Ratings* section..... 6
- Changed supply voltage max in *Absolute Maximum Ratings* from ±16.5 V to 33 V for clarification.....6
- Changed table note 1 on *Absolute Maximum Ratings* to add additional clarification..... 6
- Changed output current maximum value in *Absolute Maximum Ratings* from 150 mA to 240 mA..... 6
- Changed differential supply voltage maximum in *Absolute Maximum Ratings* table from ± 4 V to ± 1.5 V.....6
- Added continuous input current in *Absolute Maximum Ratings* 6
- Added *Electrical Characteristics: THS4021 (D Package)* section..... 8
- Changed small-signal bandwidth at G = 10, V_{CC} = ± 15 V from 350 MHz to 290 MHz in *Electrical Characteristics: THS4021 (D Package)* 8
- Changed small-signal bandwidth at G = 10, V_{CC} = ± 5 V from 280 MHz to 250 MHz in *Electrical Characteristics: THS4021 (D Package)* 8
- Changed small-signal bandwidth at G = 20, V_{CC} = ± 15 V from 80 MHz to 110 MHz in *Electrical Characteristics: THS4021 (D Package)* 8
- Changed small-signal bandwidth at G = 20, V_{CC} = ± 5 V from 70 MHz to 100 MHz in *Electrical Characteristics: THS4021 (D Package)* 8
- Changed full power bandwidth calculation from slew rate / [2 $\pi V_{O(Peak)}$] to slew rate / [$\pi V_{O(P-P)}$] in *Electrical Characteristics THS4021 (D Package)* table note.....8
- Changed full power bandwidth in *Electrical Characteristics: THS4021 (D Package)* table from 3.7 MHz to 7.5 MHz to match calculation infootnote.....8
- Changed full power bandwidth in *Electrical Characteristics: THS4021 (D Package)* table from 11.8 MHz to 23.6 MHz for V_{CC} = ±V to match calculation infootnote.....8
- Changed slew rate condition in *Electrical Characteristics: THS4021 (D Package)* from a 10-V step to a 20-V step for V_{CC} = ±15 V.....8

- Changed 0.1% settling time specification in *Electrical Characteristics: THS4021 (D Package)* from 40 ns to 30 ns for V_{CC} = ±15 V.....8
- Changed 0.1% settling time specification in *Electrical Characteristics: THS4021 (D Package)* from 50 ns to 30 ns for V_{CC} = ±5 V.....8
- Changed 0.01% settling time specification in *Electrical Characteristics: THS4021 (D Package)* from 145 ns to 160 ns for V_{CC} = ±15 V.....8
- Changed 0.01% settling time specification in *Electrical Characteristics: THS4021 (D Package)* from 155 ns to 160 sn for V_{CC} = ±5 V.....8
- Changed input current noise specification in *Electrical Characteristics: THS4021 (D Package)* from 1.5 pA/√Hz to 1.2 pA/√Hz 8
- Changed input current noise specification in *Electrical Characteristics: THS4021 (D Package)* from 1.2 pA/√Hz to 2.3 pA/√Hz.....8
- Changed open-loop gain load condition in *Electrical Characteristics: THS4021 (D Package)* from 250 Ω to 1 kΩ for V_{CC} = ± 5 V.....8
- Changed open-loop gain typical specification in *Electrical Characteristics: THS4021 (D Package)* from 60 mV/V to 100 dB for V_{CC} = ±15 V, T_A = 25ºC.....8
- Changed open-loop gain units from V/mV to dB in *Electrical Characteristics: THS4021 (D Package)* 8
- Changed open-loop gain typical specification in *Electrical Characteristics: THS4021 (D Package)*from 35 mV/V to 98 dB for V_{CC} = ±5 V, T_A = 25ºC.....8
- Changed input offset voltage typical specification in *Electrical Characteristics: THS4021 (D Package)* from 0.5 mA to 0.3 mA for 25°C.....8
- Changed offset voltage drift typical specification in *Electrical Characteristics: THS4021 (D Package)* from 15 µA/°C to 2 µA/°C.....8
- Changed input bias current typical in *Electrical Characteristics THS4021 (D Pacakge)* from 3 µA to 9 µA for T_A = 25°C.....8
- Changed input bias current maximum value in *Electrical Characteristics THS4021 (D Package)* from 6 µA to 20 µA for T_A = 25°C.....8
- Changed input bias current maximum value in *Electrical Characteristics THS4021 (D Package)* from 8 µA to 33 µA for T_A = full range.....8
- Changed input offset current drift typical value in *Electrical Characteristics: THS4021 (D Package)* from 0.3 nA/°C to 0.2 nA/°C.....8
- Added Common-mode rejection ratio typical in *Electrical Characteristics: THS4021 (D Package)* for 25°C.....8
- Added common-mode rejection ratio in *Electrical Characteristics: THS4021 (D Package)* for VCC = ± 5 V.....8
- Changed output voltage swing typical value in *Electrical Characteristics: THS4021 (D Package)* from ± 12.5 V to ± 12.9 V for V_{CC} = ± 15 V, R_L=250 Ω.....8
- Changed output current load resistance typical value in *Electrical Characteristics THS4021 (D Package)* from 20 Ω to 10 Ω.....8
- Changed output current typical value in *Electrical Characteristics: THS4021 (D Package)* from 100 mA to 200 mA for V_{CC} = ± 15 V.....8
- Changed output current typical value in *Electrical Characteristics: THS4021 (D Package)* from 75 mA to 160 mA for V_{CC} = ± 5 V.....8
- Changed output resistance in *Electrical Characteristics: THS4021 (D Package)* from 13 Ω to 5 Ω.....8
- Changed supply current (each amplifier) typical value in *Electrical Characteristics: THS4021 (D Package)* from 7.8 mA to 7.5 mA for V_{CC} = ± 5 V.....8
- Changed supply current (each amplifier) typical value in *Electrical Characteristics: THS4021 (D Package)* from 6.7 mA to 6.5 mA for V_{CC} = ± 5 V.....8
- Added power-supply rejection ratio typical value in *Electrical Characteristics: THS4021 (D Package)* 8
- Changed title of *Electrical Characteristics* to *Electrical Characteristics: THS4021 (D Package) and THS4022 (D and DGN Packages)* 10
- Added *Typical Characteristics: THS4021 (D Package)* section.....12

- Changed title of *Typical Characteristics* to *Typical Characteristics: THS4021 (D Pacakge) and THS4022 (D and DGN Packages)*N..... 17
- Added *Detailed Description* section..... 22
- Deleted *Noise Calculation and Noise Figure* and *Offset Voltage* sections..... 22
- Changed device label from "THS402x" to "THS4021" in Figure 7-4 23
- Changed *Application Information* section to latest standard format..... 24
- Added *Power Supply Recommendations* section..... 25
- Changed title of *Circuit Layout Considerations* section to *Layout Guidelines*, updated content, and moved to *Layout* section..... 25
- Deleted thermal calculations and plots from *General PowerPAD™ Integrated Circuit Package Design Considerations* 26
- Deleted *Evaluation Board* section..... 26

The datasheet number will be changing.

Device Family	Change From:	Change To:
THS402x	SLOS265C	SLOS265D

These changes may be reviewed at the datasheet links provided.
http://www.ti.com/product/THS4021

Reason for Change:

To accurately reflect device characteristics.

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:

THS4021CD	THS4021CDGN	THS4021CDGNR	THS4021ID
THS4021IDGN	THS4021IDGNR	THS4021IDR	THS4022CD
THS4022CDGN	THS4022CDGNR	THS4022ID	THS4022IDGN
THS4022IDGNR			

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