12500 TI Boulevard, MS 8640, Dallas, Texas 75243

Notification# 20230522006.1
Datasheet for THS402x
Change Notification

Date: May 23, 2023
To: Keysight Technologies PCN

Dear Customer:

This is a notice of change to a product data sheet for a device that is currently offered by Texas Instruments. The details of this change are on the following pages.

We request you acknowledge receipt of this notification within **30** days of the date of this notice.

The proposed first ship date is indicated on page 3 of this notification, unless customer agreement has been reached on an earlier implementation of the change.

This notice does not change the end-of-life status of any product. Should product affected be on a previously issued product withdrawal/discontinuance notice, this notification does not extend the life of that product or change the life time buy offering/discontinuance plan.

For questions regarding this notice, contact your local Field Sales Representative or the PCN Team (PCN_ww_admin_team@list.ti.com).

Sincerely,

PCN Team
SC Business Services

Data Sheet Change Notification
Attachments

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

DEVICE	CUSTOMER PART NUMBER
THS4021CDGNR	null

Technical details of this Product Change follow on the next page(s).

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			

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

Location	E-Mail
WW PCN Team	PCN_ww_admin_team@list.ti.com

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