PCN Number:	20230306003.1	**PCN Date:**	March 09, 2023
Title:	Datasheet for THS309x		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	June 9, 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.

Changes from Revision I (December 2022) to Revision J (February 2023) **Page**

- Updated *Features* section....1
- Updated *Description* section....1
- Updated the *Device Comparison Table* section....6
- Removed D package information from the datasheet....7
- Removed continuous power dissipation specification from *Absolute Maximum Ratings* table....8
- Updated *ESD Ratings* table....8
- Updated *Thermal Information* table....8
- Changed *Electrical Characteristics THS3091 table* to *Electrical Characteristics:* V_S = *±15 V*....9
- Changed small-signal bandwidth at G = 1 from 235 MHz to 715 MHz in *Electrical Characteristics:* V_S = *±15 V* table....9
- Changed small-signal bandwidth at G = 2 from 210 MHz to 305 MHz in *Electrical Characteristics:* V_S = *±15 V* table....9
- Changed small-signal bandwidth at G = 5 from 190 MHz to 205 MHz in *Electrical Characteristics:* V_S = *±15 V* table....9
- Changed small-signal bandwidth at G = 10 from 180 MHz to 190 MHz in *Electrical Characteristics:* V_S = *±15 V* table....9
- Removed slew rate (25% to 75% level) specifications from *Electrical Characteristics:* V_S = *±15 V* and *Electrical Characteristics:* V_S = *±5 V* tables....9
- Added slew rate (10% to 90% level) specifications to *Electrical Characteristics:*V_S = *±15 V and Electrical Characteristics:*V_S = *±5 V tables*....9
- Changed rise and fall time from 5 ns to 2 ns in *Electrical Characteristics:* V_S = *±15 V* table....9
- Changed settling time to 0.1% from 42 ns to 12.5 ns in *Electrical Characteristics:* V_S = *±15 V* table....9
- Changed settling time to 0.01% from 72 ns to 18.5 ns in *Electrical Characteristics:* V_S = *±15 V* table....9
- Changed second harmonic distortion at R_L = 100 Ω from 66 dBc to 72 dBc in *Electrical Characteristics:* V_S = *±15 V* table....9
- Changed second harmonic distortion at R_L = 1 kΩ from 77 dBc to 84 dBc in *Electrical Characteristics:* V_S = *±15 V* table....9
- Changed third harmonic distortion at R_L = 100 Ω from 74 dBc to 70 dBc in *Electrical Characteristics:* V_S = *±15 V* table....9
- Changed third harmonic distortion at R_L = 1 kΩ from 69 dBc to 99 dBc in *Electrical Characteristics:* V_S = *±15 V* table....9

- Changed input voltage noise from 2 nV/√Hz to 1.1 nV/√Hz in *Electrical Characteristics: V_S = ±15 V* table..... 9
- Changed noninverting input current noise from 14 pA/√Hz to 15 pA/√Hz in *Electrical Characteristics: V_S = ±15 V* table..... 9
- Removed differential gain and differential phase specifications from *Electrical Characteristics: V_S = ±15 V and Electrical Characteristics: VS = ±5 V* tables..... 9
- Changed inverting input current noise from 17 pA/√Hz to 14 pA/√Hz in *Electrical Characteristics: V_S = ±15 V* table..... 9
- Changed typical transimpedance from 850 kΩ to 1800 kΩ in *Electrical Characteristics: V_S = ±15 V* table..... 9
- Removed specifications with T_A = 0°C to 70°C test conditions in Electrical Characteristics: V_S = ±15 V and Electrical Characteristics: V_S = ±5 V tables..... 9
- Changed maximum input offset voltage at T_A = –40°C to 85°C from 4 mV to 5 mV in *Electrical Characteristics: V_S = ±15 V* table..... 9
- Changed maximum inverting input bias current at T_A = –40°C to 85°C from 20 µA to 25 µA in *Electrical Characteristics: V_S = ±15 V* table..... 9
- Changed max input offset current at T_A= 25°C from 10µA to 20µA in *Electrical Characteristics: V_S = ±15 V* table..... 9
- Changed max input offset current at T_A= 0°C to 85°C from 15µA to 30µA in *Electrical Characteristics: V_S = ±15 V* table..... 9
- Changed typical average offset voltage drift from ±10 µV/°C to ±19 µV/°C in *Electrical Characteristics: V_S = ±15 V* table..... 9
- Changed typical inverting bias current drift from ±20 nA/°C to ±80 nA/°C in *Electrical Characteristics: V_S = ±15 V* table..... 9
- Changed typical average offset current drift from ±20 nA/°C to ±80 nA/°C in *Electrical Characteristics: V_S = ±15 V* table..... 9
- Changed typical common-mode rejection ratio from 69 dB to 78 dB in *Electrical Characteristics: V_S = ±15 V* table..... 9
- Changed typical noninverting input resistance from 1.3 MΩ to 0.7 MΩ in *Electrical Characteristics: V_S = ±15 V* table..... 9
- Changed typical noninverting input capacitance from 0.1 pF to 2.4 pF in *Electrical Characteristics: V_S = ±15 V* table..... 9
- Changed typical output current (sourcing) from 280 mA to 310 mA in *Electrical Characteristics: V_S = ±15 V* table..... 9
- Changed typical output current (sinking) from 250 mA to 310 mA in *Electrical Characteristics: V_S = ±15 V* table..... 9
- Removed specified operating voltage specifications from *Electrical Characteristics: V_S = ±15 V* and *Electrical Characteristics: V_S = ±5 V* tables..... 9
- Changed power supply rejection (+PSRR) from 75 dB to 85 dB in *Electrical Characteristics: V_S = ±15 V* table..... 9
- Changed power supply rejection (-PSRR) from 73 dB to 82 dB in *Electrical Characteristics: V_S = ±15 V* table.. 9
- Changed Electrical Characteristics THS3095 to *Electrical Characteristics: V_S = ±5V* 11
- Changed small-signal bandwidth at G = 1 from 190 MHz to 485 MHz in *Electrical Characteristics: V_S = ±5 V* table..... 11
- Changed small-signal bandwidth at G = 2 from 180 MHz to 215 MHz in *Electrical Characteristics: V_S = ±5 V* table..... 11
- Changed small-signal bandwidth at G = 10 from 150 MHz to 160 MHz in *Electrical Characteristics: V_S = ±5 V* table..... 11
- Changed 0.1-dB bandwidth flatness from 65 MHz to 50 MHz in *Electrical Characteristics: V_S = ±5 V* table.... 11
- Changed large signal bandwidth flatness from 160 MHz to 205 MHz in *Electrical Characteristics: V_S = ±5 V* table..... 11
- Changed rise and fall time from 5 ns to 2 ns in *Electrical Characteristics: V_S = ±5 V* table..... 11
- Changed settling time to 0.1% from 35 ns to 12.5 ns in *Electrical Characteristics: V_S = ±5 V* table..... 11
- Changed settling time to 0.01% from 73 ns to 26 ns in *Electrical Characteristics: V_S = ±15 V* table..... 11
- Changed second harmonic distortion at R_L = 100 Ω from 77 dBc to 74 dBc in *Electrical Characteristics: V_S = ±5 V* table..... 11

- Changed second harmonic distortion at R_L = 1 kΩ from 73 dBc to 76 dBc in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed third harmonic distortion at R_L = 1 kΩ from 68 dBc to 75 dBc in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed input voltage noise from 2 nV/√Hz to 1.1 nV/√Hz in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed noninverting input current noise from 14 pA/√Hz to 15 pA/√Hz in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed inverting input current noise from 17 pA/√Hz to 14 pA/√Hz in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed typical transimpedance from 700 kΩ to 1500 kΩ in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed typical input offset voltage from 0.3 mV to 0.6 mV in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed maximum input offset voltage at T_A = –40°C to 85°C from 3 mV to 3.5 mV in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed maximum inverting input bias current at T_A = –40°C to 85°C from 20 µA to 25 µA in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed typical input offset current at T_A= 25°C from 1 µA to 1.5 µA in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed max input offset current at T_A= 0°C to 85°C from 15µA to 20µA in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed typical average offset voltage drift from ±10 µV/°C to ±20 µV/°C in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed typical inverting bias current drift from ±20 nA/°C to ±95 nA/°C in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed typical average offset current drift from ±20 nA/°C to ±90 nA/°C in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed typical common-mode rejection ratio from 66 dB to 74 dB in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed typical noninverting input resistance from 1.1 MΩ to 0.45 MΩ in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed typical noninverting input capacitance from 0.1 pF to 2.6 pF in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed typical output current (sourcing) from 180 mA to 250 mA in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed typical output current (sinking) from -160 mA to -250 mA in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed power supply rejection (+PSRR) from 73 dB to 81 dB in *Electrical Characteristics: V_S = ±5 V* table....11
- Changed power supply rejection (-PSRR) from 71 dB to 79 dB in *Electrical Characteristics: V_S = ±5 V* table....11
- Removed *Dissipation Ratings* table....13
- Updated *Typical Characteristics (±15 V)* section....13
- Updated *Typical Characteristics (±5 V)* section....19
- Updated *Feature Description* section....21
- Updated *Device Functional Modes* section....22
- Updated *Application and Implementation* section....24
- Updated *Typical Application* section....24
- Updated *Layout* section....27

The datasheet number will be changing.

Device Family	Change From:	Change To:
THS309x	SLOS423I	SLOS423J

These changes may be reviewed at the datasheet links provided.
http://www.ti.com/product/THS309x

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:

THS3091D	THS3091DDA	THS3091DDAG3	THS3091DDAR
THS3091DDARG3	THS3091DR	THS3095D	THS3095DDA
THS3095DDAR			

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