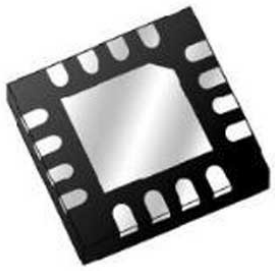
THS4509RGTT

SP Amp DIFF AMP Single ±2.625V/5.25V 16-Pin VQFN EP T/R

Manufacturer:	Texas Instruments, Inc
Package/Case:	QFN-16
Product Type:	Amplifier ICs
RoHS:	RoHS Compliant/Lead free
Lifecycle:	Active



Images are for reference only

Inquiry

General Description

The THS4509 device is a wideband, fully-differential op amp designed for 5-V data acquisition systems. It has a low noise at 1.9 nV/√Hz, and low harmonic distortion of –75 dBc HD2 and –80 dBc HD3 at 100 MHz with 2 VPP, G = 10 dB, and 1-kΩ load. Slew rate is high at 6600 V/µs, and with settling time of 2 ns to 1% (2-V step), it is ideal for pulsed applications. It is designed for a minimum gain of 6 dB, but is optimized for gains of 10 dB.

To allow for DC coupling to analog-to-digital converters (ADCs), its unique output common-mode control circuit maintains the output common-mode voltage within 3-mV offset (typical) from the set voltage, when set within 0.5-V of midsupply, with less than 4-mV differential offset voltage. The common-mode set point is set to midsupply by internal circuitry, which may be overdriven from an external source.

The input and output are optimized for best performance with the common-mode voltages set to midsupply. Along with high performance at low power-supply voltage, this design makes it ideal for high-performance, single-supply 5-V data acquisition systems. The combined performance of the THS4509 in a gain of 10 dB driving the ADS5500 ADC, sampling at 125 MSPS, is 81-dBc SFDR and 69.1-dBc SNR with a –1 dBFS signal at 70 MHz.

The THS4509 is offered in a quad, leadless VQFN-16 package (RGT), and is characterized for operation over the full industrial temperature range from –40°C to +85°C.

Key Features

Fully-Differential Architecture

Centered Input Common-Mode Range

Output Common-Mode Control

Minimum Gain of 2 V/V (6 dB)

Bandwidth: 1900 MHz

Slew Rate: 6600 V/µs

1% Settling Time: 2 ns

HD2: –75 dBc at 100 MHz

HD3: –80 dBc at 100 MHz

OIP3: 37 dBm at 70 MHz

Input Voltage Noise: 1.9 nV/√Hz, and low harmonic distortion of –75 dBc HD2 and –80 dBc HD3 at 100 MHz with 2 VPP, G=10dB, and 1-kΩ load. Slew rate is high at 6600 V/µs, and with settling time of 2 ns to 1% (2-V step), it is ideal for pulsed applications. It is designed for a minimum gain of 6 dB, but is optimized for gains of 10 dB.

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Recommended For You

THS3092D

Texas Instruments, Inc

SOP-8

THS7316DR

Texas Instruments, Inc

SOP-8

THS41311DGNR

Texas Instruments, Inc

MSOP8

THS4011CD

Texas Instruments, Inc

SOP

THS7374IPW

Texas Instruments, Inc

TSSOP14

THS6184RHFR

Texas Instruments, Inc

QFN

THS4503IDGN

Texas Instruments, Inc

MSOP8

THS7376IPWR

Texas Instruments, Inc

TSSOP14

THS7314D

Texas Instruments, Inc

SOP8

THS4130IDGK

Texas Instruments, Inc

MSOP8

THS7353PW

Texas Instruments, Inc

TSSOP20

THS45511RGTR

Texas Instruments, Inc

VQFN16

THS4281D

Texas Instruments, Inc

SOIC-8

THS4631D

Texas Instruments, Inc

SOP-8

THS3061DGN

Texas Instruments, Inc

MSOP8