

Precision Amplifiers IC ULTRALOW BIAS CURRENT

Manufacturers [Analog Devices, Inc](#)

Package/Case CAN8

Product Type Amplifier ICs

RoHS



Images are for reference only

Lifecycle

Please submit RFQ for AD549SH/883B or [Email to us: sales@ovaga.com](#) We will contact you in 12 hours.[RFQ](#)

General Description

The AD549 is a monolithic electrometer operational amplifier with very low input bias current. Input offset voltage and input offset voltage drift are laser trimmed for precision performance. The ultralow input current of the part is achieved with Topgate™ JFET technology, a process development exclusive to Analog Devices, Inc. This technology allows fabrication of extremely low input current JFETs compatible with a standard junction isolated bipolar process. The $1015\ \Omega$ common-mode impedance, which results from the bootstrapped input stage, ensures that the input current is essentially independent of the common-mode voltage.

The AD549 is suited for applications that require very low input current and low input offset voltage. It excels as a preamp for a wide variety of current output transducers, such as photo-diodes, photomultiplier tubes, or oxygen sensors. The AD549 can also be used as a precision integrator or low droop sample and hold. The AD549 is pin compatible with standard FET and electrometer op amps, allowing designers to upgrade the performance of present systems at little additional cost.

The AD549 is available in a TO-99 hermetic package. The case is connected to Pin 8 so that the metal case can be independently connected to a point at the same potential as the input terminals, minimizing stray leakage to the case. The AD549 is available in four performance grades. The J, K, and L versions are rated over the commercial temperature range of 0°C to $+70^\circ\text{C}$. The S grade is specified over the military temperature range of -55°C to $+125^\circ\text{C}$ and is available processed to MIL-STD-883B, Rev. C. Extended reliability plus screening is also available. Plus screening includes 168 hour burn-in, as well as other environmental and physical tests derived from MIL-STD-883B, Rev. C.

Product Highlights

The AD549 input currents are specified, 100% tested, and guaranteed after the device is warmed up. They are guaranteed over the entire common-mode input voltage range.

The AD549 input offset voltage and drift are laser trimmed to $0.50\ \text{mV}$ and $15\ \mu\text{V}/^\circ\text{C}$ (AD549K), and to $1\ \text{mV}$ and $20\ \mu\text{V}/^\circ\text{C}$ (AD549J)..

A maximum quiescent supply current of $700\ \mu\text{A}$ minimizes heating effects on input current and offset voltage.

AC specifications include 1 MHz unity gain bandwidth and $3\ \text{V}/\mu\text{s}$ slew rate. Settling time for a $10\ \text{V}$ input step is $5\ \mu\text{s}$ to 0.01%.

Features

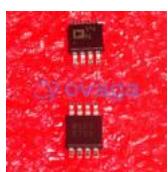
Ultralow input bias current
60 fA maximum (AD549L)
100 fA maximum (AD549K)
250 fA maximum (AD549J)
Input bias current guaranteed over the common-mode voltage range
Low offset voltage
0.50 mV maximum (AD549K)
1.00 mV maximum (AD549J)
Low offset drift
15 μ V/ $^{\circ}$ C maximum (AD549K)
20 μ V/ $^{\circ}$ C maximum (AD549J)
Low power
700 μ A maximum supply current
Low input voltage noise
4 μ V (typ) p-p over 0.1 Hz to 10 Hz
MIL-STD-883B parts available

Application

Electrometer amplifier
Photodiode preamp
pH electrode buffer



Related Products



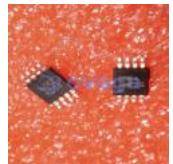
[AD8418BRMZ-RL](#)

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MSOP-8



[ADA4528-2ARMZ-R7](#)

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[ADA4084-2ARMZ](#)

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