

FEATURES

64-channel, low level current-to-digital converter

Up to 24-bit resolution

Up to 19.7 kSPS (50.7 μ s integration time)

Simultaneous sampling

Ultralow noise (down to 0.4 fC [2500e⁻])

User-adjustable full-scale range

INL: $\pm 0.025\%$ of reading ± 0.75 ppm of FSR

Very low power dissipation: 6.25 mW/channel

LVDS self-clocked serial data interface

SPI configuration registers (daisy-chain)

On-board temperature sensor and reference buffer

10 mm \times 10 mm, mini-BGA package

Low cost external components

Support tools

Evaluation board

Reference design with reference layout

FPGA Verilog code

APPLICATIONS

Medical, industrial, and security CT scanner data acquisition

Photodiode sensors

Dosimetry and radiation therapy systems

Optical fiber power monitoring

X-ray detection systems

High channel-count data acquisition systems (current or voltage inputs)

GENERAL DESCRIPTION

The ADAS1127 is a 64-channel, current-to-digital, analog-to-digital converter (ADC). It contains 64 low power, low noise, low input current integrators, simultaneous sample-and-holds, and a high speed, high resolution ADCs with configurable sampling rate and resolutions up to 24 bits.

All converted channel results are output on a single LVDS self-clocked serial interface, which reduces external hardware.

An SPI-compatible serial interface allows configuration of the ADC using the SDI input. The SDO output allows the user to daisy-chain several ADCs on a single, 3-wire bus. The ADAS1127 uses the separate supply IOVDD to reduce the digital noise effect on the conversions.

The ADAS1127 is in a 10 mm \times 10 mm, mini-BGA package.

For more information on the ADAS1127, contact Analog Devices, Inc, at adas@analog.com.

FUNCTIONAL BLOCK DIAGRAM

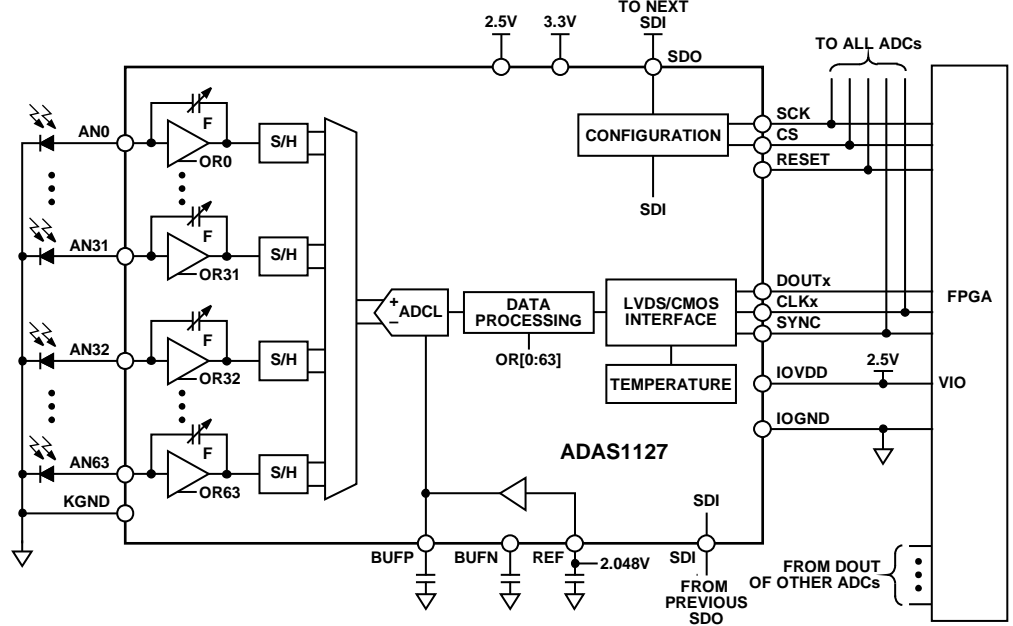


Figure 1.

Rev. Sp0

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ADAS1127

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