128-Channel, 24-Bit Current-to-Digital ADC

Data Sheet

ADAS1128

FEATURES

- 128-channel, low level current-to-digital converter
- Up to 24-bit resolution
- Up to 19.7 kSPS (50.7 µs integration time)
- Simultaneous sampling
- No dead time, no loss of charge
- Ultralow noise (down to 0.4 fC [2500e^-])
- User-adjustable full-scale range
- INL: ±0.025% of reading ±0.75 ppm of FSR
- Very low power dissipation: 4.5 mW/channel
- LVDS self-clocked serial data interface
- SPI configuration registers (daisy-chain)
- On-board temperature sensor and reference buffer
- 10 mm × 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 ADAS1128 is a 128-channel, current-to-digital, analog-to-digital converter (ADC). It contains 128 low power, low noise, low input current integrators, simultaneous sample-and-holds, and two 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 ADAS1128 uses the separate supply IOVDD to reduce digital noise effect on the conversions.

The ADAS1128 is in a 10 mm × 10 mm, mini-BGA package.

FUNCTIONAL BLOCK DIAGRAM

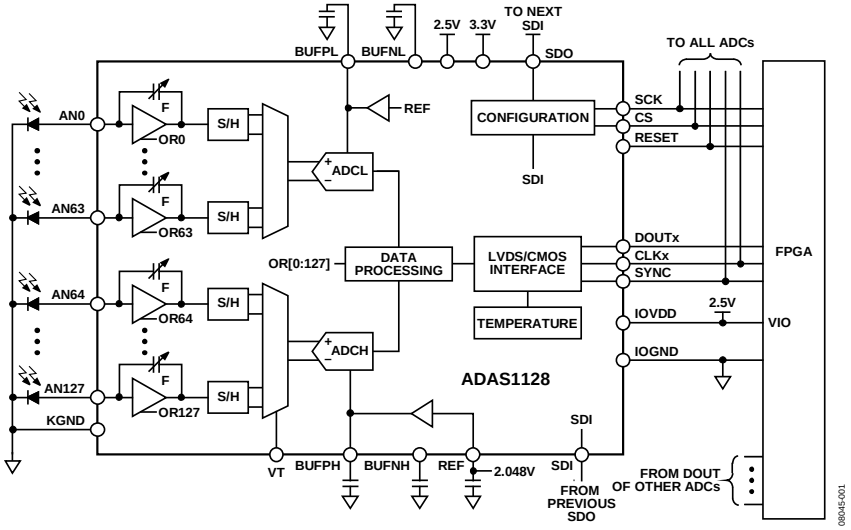

Figure 1.

For more information on the ADAS1128, contact Analog Devices, Inc., at adas@analog.com.

Rev. SpD **Document Feedback**

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NOTES

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