AD7768-4BSTZ

Data Sheet

ANALOG DEVICES AD7768-4BSTZ Analog to Digital Converter, 4CH, Sigma-Delta, 24Bit, 256KSPS, Single, 2V, 5.5V, LQFP

Manufacturers	Analog Devices, Inc
Package/Case	64-LQFP
Product Type	Data Conversion ICs
RoHS	Pb-free Halide free
Lifecycle	

Images are for reference only

Please submit RFQ for AD7768-4BSTZ or Email to us: sales@ovaga.com We will contact you in 12 hours. RFQ

General Description

The AD7768/AD7768-4 are 8-channel and 4-channel,simultaneous sampling sigma-delta (Σ-Δ) analog-to-digitalconverters (ADCs), respectively, with a Σ-Δ modulator and digital filter per channel, enabling synchronized sampling of ac and dc signals.

The AD7768/AD7768-4 achieve 108 dB dynamic range at amaximum input bandwidth of 110.8 kHz, combined with typicalperformance of ±2 ppm integral nonlinearity (INL), ±50 µVoffset error, and ±30 ppm gain error.

The AD7768/AD7768-4 user can trade off input bandwidth,output data rate, and power dissipation, and select one of threepower modes to optimize for noise targets and power consumption. The flexibility of the AD7768/AD7768-4 allows them to become reusable platforms for low power dc and highperformance ac measurement modules.

The AD7768/AD7768-4 have three modes: fast mode (256 kSPS maximum, 110.8 kHz input bandwidth, 51.5 mW per channel),median mode (128 kSPS maximum, 55.4 kHz input bandwidth,27.5 mW per channel) and low power mode (32 kSPS maximum, 13.8 kHz input bandwidth, 9.375 mW per channel).

The AD7768/AD7768-4 offer extensive digital filteringcapabilities, such as a wideband, low ±0.005 dB pass-bandripple, antialiasing low-pass filter with sharp roll-off, and 105 dB attenuation at the Nyquist frequency.

Frequency domain measurements can use the wideband linear phase filter. This filter has a flat pass band (±0.005 dB ripple)from dc to 102.4 kHz at 256 kSPS, from dc to 51.2 kHz at 128 kSPS, or from dc to 12.8 kHz at 32 kSPS.

The AD7768/AD7768-4 also offer sinc response via a sinc5 filter, a low latency path for low bandwidth, and low noisemeasurements. The wideband and sinc5 filters can be selected and run on a per channel basis.

Within these filter options, the user can improve the dynamicrange by selecting from decimation rates of ×32, ×64, ×128,×256, ×512, and ×1024. The ability to vary the decimation filtering optimizes noise performance to the required inputbandwidth.

Embedded analog functionality on each ADC channel makesdesign easier, such as a precharge buffer on each analog inputthat reduces analog input current and a precharge reference buffer per channel reduces input current and glitches on thereference input terminals.

The device operates with a 5 V AVDD1A and AVDD1B supply,a 2.25 V to 5.0 V AVDD2A and AVDD2B supply, and a 2.5 V to 3.3 V or 1.8 V IOVDD supply (see the 1.8 V IOVDD Operationsection for specific requirements for operating at 1.8 V IOVDD).

The device requires an external reference; the absolute inputreference voltage range is 1 V to AVDD1 − AVSS.

Features

Precision ac and dc performance

8-/4-channel simultaneous sampling

256 kSPS maximum ADC ODR per channel

108 dB dynamic range

110.8 kHz maximum input bandwidth (−3 dB BW)

Optimized power dissipation vs. noise vs. input bandwidth

Selectable power, speed, and input bandwidth

Fast (highest speed): 110.8 kHz BW, 51.5 mW per channel

Median (half speed): 55.4 kHz BW, 27.5 mW per channel

Low power (lowest power): 13.8 kHz BW, 9.375 mW per channel

Input BW range: dc to 110.8 kHz

Programmable input bandwidth/sampling rates

CRC error checking on data interface

Daisy-chaining

Linear phase digital filter

Low latency sinc5 filter

Wideband brick wall filter: ±0.005 dB ripple to 102.4 kHz

Analog input precharge buffers

Power = 2.25 V to 5.0 V = 1.8 V

64-lead LQFP package, no exposed pad

Temperature range: −40°C to +105°C

Application

Data acquisition systems: USB/PXI/Ethernet

Instrumentation and industrial control loops

Audio test and measurement

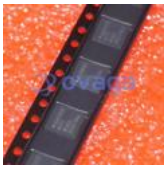
Vibration and asset condition monitoring

3-phase power quality analysis

Sonar

High precision medical electroencephalogram (EEG)/electromyography (EMG)/electrocardiogram (ECG)

Related Products



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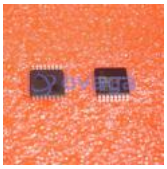
LFCSP-40



[AD7266BSUZ]

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TQPF-32

[AD574AJNZ]

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PDIP-28

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SOIC-16

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LFCSP-64