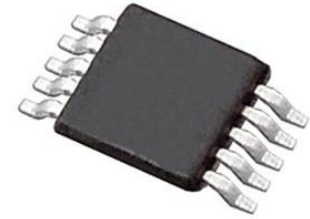


Analogue to Digital Converter, 16 bit, 2 MSPS, Pseudo Differential, Microwire, QSPI, SPI, Single

Manufacturers	Analog Devices, Inc
Package/Case	MSOP10
Product Type	Data Conversion ICs
RoHS	Pb-free Halide free
Lifecycle	



Images are for reference only

Please submit RFQ for AD4000BRMZ or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

[RFQ](#)

General Description

The AD4000/AD4004/AD4008 are high accuracy, high speed, low power, 16-bit, Easy Drive, precision successive approximation register (SAR) analog-to-digital converters (ADCs). The high throughput allows both accurate capture of high frequency signals and decimation to achieve higher SNR, while reducing antialiasing filter challenges.

Easy Drive features reduce signal chain complexity and power consumption, and enable higher channel density. The reduced input current, particularly in high-Z mode, coupled with a long signal acquisition phase, eliminates the need for a dedicated high power, high speed ADC driver, which broadens the range of low power precision amplifiers that can drive these ADCs directly (see Figure 2). The input span compression feature enables the ADC driver amplifier and the ADC to operate off of common supply rails without the need for a negative supply while preserving the full ADC code range. The input overvoltage clamp protects the ADC inputs against overvoltage events, minimizes disturbance on the reference pin, and eliminates the need for external protection diodes.

The low serial peripheral interface (SPI) clock rate (70 MHz for the AD4000 at 2 MSPS in turbo mode) reduces the digital input/output power consumption, broadens processor options, and simplifies the task of sending data across digital isolation.

The SPI-compatible versatile serial interface features seven programmable modes with an optional busy indicator. Using the SDI input, several ADCs can be daisy-chained on a single 3-wire bus. The AD4000/AD4004/AD4008 are compatible with 1.8 V, 2.5 V, 3 V, and 5 V logic, using the separate supply, VIO.

Features

Throughput: 2 MSPS/1 MSPS/500 kSPS options

INL: ± 1.0 LSB maximum

Guaranteed 16-bit, no missing codes

Low power

Application

Automatic test equipment

Machine automation

Medical equipment

Battery-powered equipment

4.9 mW/MSPS, 2.5 mW at 500 kSPS, VDD only

7 mW/MSPS, 70 μ W at 10 kSPS, 14 mW at 2 MSPS, total

SNR: 93 dB typical at = 100 kHz

Oversampled SNR

96 dB at 1.0 MSPS,>

123 dB at 1.9 kSPS,>

THD: -115 dB typical at = 5 V; -95 dB typical at>

SINAD: 82 dB at>

Easy Drive

Greatly reduced input kickback

Input current reduced to 0.4 μ A/MSPS

Long acquisition phase, \geq 79% of cycle time at 1 MSPS

Input span compression for single-supply operation

Fast conversion time allows low SPI clock rates

Input overvoltage clamp protection sinks up to 50 mA

Pseudo differential input range

0 V to VREF with VREF from 2.4 V to 5.1 V

Single 1.8 V supply operation with 1.71 V to 5.5 V logic interface

First conversion accurate

SPI-/QSPI-/MICROWIRE-/DSP-compatible serial interface

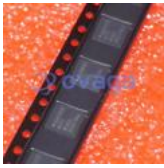
Ability to daisy-chain multiple ADCs

Guaranteed operation: -40°C to +125°C

10-lead packages: 3 mm \times 3 mm LFCSP, 3 mm \times 4.90 mm MSOP

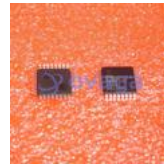
Pin compatible with AD4003/AD4007/AD4011 family

Related Products



[ADAS3022BCPZ](#)

Analog Devices, Inc
LFCSP-40



[AD7266BSUZ](#)

Analog Devices, Inc
TQPF-32



[AD574AJNZ](#)

Analog Devices, Inc
PDIP-28



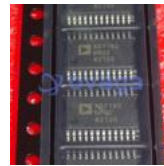
[AD7401YRWZ](#)

Analog Devices, Inc
SOIC-16



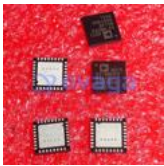
[AD7938BSUZ](#)

Analog Devices, Inc
TQFP-32



[AD7192BRUZ-REEL](#)

Analog Devices, Inc
TSSOP-24



[AD7124-8BCPZ-RL7](#)

Analog Devices, Inc
LFCSP-32



[AD9680BCPZ-500](#)

Analog Devices, Inc
LFCSP-64