

8-Channel DAS with 18-Bit, 1 MSPS Bipolar Input, Simultaneous Sampling ADC

Manufacturers	Analog Devices, Inc
Package/Case	64-Lead LQFP (10mm x 10mm)
Product Type	Data Conversion ICs
RoHS	
Lifecycle	



Images are for reference only

Please submit RFQ for AD7606C-18BSTZ or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

[RFQ](#)

General Description

The AD7606C-18 is an 18-bit, simultaneous sampling, analog-to-digital data acquisition system (DAS) with eight channels. Each channel contains analog input clamp protection, a programmable gain amplifier (PGA), a low-pass filter (LPF), and an 18-bit successive approximation register (SAR) analog-to-digital converter (ADC). The AD7606C-18 also contains a flexible digital filter, a low drift, 2.5 V precision reference, a reference buffer to drive the ADC, and flexible parallel and serial interfaces.

The AD7606C-18 operates from a single 5 V supply and accommodates the following input ranges when sampling at throughput rates of 1 MSPS for all channels:

The input clamp protection tolerates voltages up to ± 21 V. The single supply operation, on-chip filtering, and high input impedance eliminate the need for external driver op amps, which require bipolar supplies. For applications with lower throughput rates, the AD7606C-18 flexible digital filter can be used to improve noise performance.

In hardware mode, the AD7606C-18 is fully compatible with the AD7608 and AD7609. In software mode, the following advanced features are available:

Note that throughout the data sheet, multifunction pins, such as the RD/SCLK pin, are referred to either by the entire pin name or by a single function of the pin, for example, the SCLK pin, when only that function is relevant.

APPLICATIONS

Features

Application

18-bit ADC with 1 MSPS on all channels	Bipolar single-ended: ± 12.5 V, ± 10 V, ± 6.25 V, ± 5 V, and ± 2.5 V
Input buffer with 1 M Ω minimum analog input impedance (R _{IN})	Unipolar single-ended: 0 V to 12.5 V, 0 V to 10 V, and 0 V to 5 V
	Bipolar differential: ± 20 V, ± 12.5 V, ± 10 V, and ± 5 V
	Analog input range selectable per channel with added ranges available

Single 5 V analog supply and 1.71 V to 5.25 V V	High bandwidth mode (220 kHz) selectable per channel
DRIVE	Additional oversampling options with an oversampling ratio up to 256
Per channel selectable analog input ranges	System gain, system offset, and system phase calibration, per channel
Bipolar single-ended: ± 12.5 V, ± 10 V, ± 6.25 V, ± 5 V, ± 2.5 V	Analog input open circuit detector
Unipolar single-ended: 0 V to 12.5 V, 0 V to 10 V, 0 V to 5 V	Diagnostic multiplexer
Bipolar differential: ± 20 V, ± 12.5 V, ± 10 V, ± 5 V	Monitoring functions (serial peripheral interface (SPI) invalid read and write, cyclic redundancy check (CRC), busy stuck monitor, and reset detection)
Two bandwidth options: 25 kHz and 220 kHz, per channel	Power line monitoring
Flexible digital filter, oversampling ratio up to 256	Protective relays
Pin to pin compatible to the AD7606B, AD7608, and AD7609	Multiphase motor control
Bipolar single-ended: ± 12.5 V, ± 10 V, ± 6.25 V, ± 5 V, ± 2.5 V	Instrumentation and control systems
Unipolar single-ended: 0 V to 12.5 V, 0 V to 10 V, 0 V to 5 V	Data acquisition systems
Bipolar differential: ± 20 V, ± 12.5 V, ± 10 V, ± 5 V	
Performance	
93 dB typical SNR for ± 20 V bipolar differential range	
102 dB SNR, oversampling by 32	
Calibration and Diagnostics	
Per channel system phase, offset, and gain calibration	
Analog input open circuit detection feature	
Self diagnostics and monitoring features	
CRC error checking on read and write data and registers	
93 dB typical SNR for ± 20 V bipolar	

differential range

102 dB SNR, oversampling by 32

Per channel system phase, offset, and gain calibration

Analog input open circuit detection feature

Self diagnostics and monitoring features

CRC error checking on read and write data and registers

Related Products



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LFCSP-40



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