Precision ADCs

AD7626
Highest Speed

AD7466
Lowest Power

AD7476A
Smallest Package

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ANALOG DEVICES

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Single Ended Parallel				•
Single Ended		•	•	

2.35 V to 5 V Single Ended Serial

Part Number	Resolution (Bits)	Speed (kSPS)	Power (mW)
AD7476A	12	1000	3.6
AD7920	12	250	3.6
AD7475	12	1000	4.5 (max)
AD7495	12	1000	6 (max)
AD7477A	10	1000	3.6
AD7910	10	250	3.6
AD7478A	8	1000	3.6

2.7 V to 5 V Parallel

Part Number	Resolution (Bits)	Speed (kSPS)	Power (mW)
AD7472	12	1500	8.7
AD7492	12	1250	4
AD7470	10	1750	7.97

1.6 V to 3.6 V Single Ended Serial

Part Number	Resolution (Bits)	Speed (kSPS)	Power (mW)
AD7466	12	200	0.12
AD7467	10	200	0.12
AD7468	8	200	0.12

3 V to 5 V True Differential Serial

Part Number	Resolution (Bits)	Speed (kSPS)	Power Max (mW)
AD7450A	12	1000	4
AD7452	12	555	3.3
AD7440	10	1000	4

1.6 V to 3.6 V Pseudo Differential Serial

Part Number	Resolution (Bits)	Speed (kSPS)	Power (mW)
AD7451	12	1000	4
AD7453	12	555	3.3
AD7457	12	100	1
AD7441	10	1000	4

Whether the Requirement Is Low Power, Wide Bandwidth, or Space Savings, ADI Offers the Ideal Product

- Flexible throughputs range from 200 kSPS to 3 MSPS.
- Single supply operation for ease of use.
- The AD7476A, AD7477A, and AD7478A, with maximum throughput 1 MSPS in tiny, 6-lead SC70 packages, are ideal where space is tight. Moreover, these devices consume only 3.6 mW at 1 MSPS. Refer also to the AD7910 and AD7920, offering even further power savings at lower 200 kSPS throughput.
- For power sensitive applications, the AD7466, AD7467, and AD7468 are the devices of choice. These are low power, 12-, 10-, and 8-bit ADCs, with performance fully specified from 1.6 V to 3.6 V. Power dissipation is just 0.12 mW at 1.6 V, ideal for power conscious applications.
- For wide bandwidth or lower speed muxed applications, choose the AD7276, AD7277, and AD7278—3 MSPS, 12-, 10-, and 8-bit devices. Packaged in 6-lead TSOT, speed and small footprint are combined to offer significant advantages.
- Differential inputs are ideal in noise sensitive applications, and ADI offers both true and pseudo differential products. The AD7450 and AD7440 family of 12-bit and 10-bit true and pseudo differential input ADCs, maximize noise rejection performance.
- For the convenience of an internal reference, choose the low power, 1 MSPS AD7495. This product, and the AD7475 device without internal reference, offer the added flexibility of a V_{DRIVE} logic power supply pin. For parallel interfaces, look to the 10-bit AD7470 and 12-bit AD7472 and AD7492, with on-board 2.5 V internal reference.

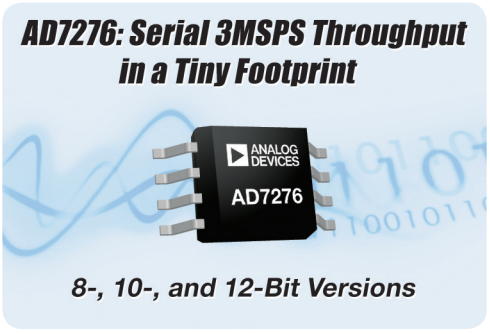
Part of a Family of High Speed SAR ADCs, the AD7276 Provides Fast 3 MSPS No Latency Throughput in a Tiny 9 mm² TSOT Footprint

Features

- Fast throughput rate: 3 MSPS
- Specified for V_{DD} of 2.35 V to 3.6 V
- Temperature range: –40°C up to +125°C
- Low power dissipation: 3.6 mW at 3 MSPS
- Flexible power/throughput management
- SAR architecture zero pipeline delay

Applications

- High speed data acquisition
- Instrumentation and control systems
- Optical module power detection
- Battery-powered systems



Multichannel, SPI and I²C, 8-Bit to 12-Bit Resolution ADCs

Channel Count	2	4	8	16
SPI	•	•	•	•
I²C		•		
I²C and Digital Alert	•	•	•	

2-/4-/8-Channel I²C and Alert

Part Number	Resolution (Bits)	Speed (kSPS)	Power Max (mW)
AD7992	12	2	0.495
AD7994	12	4	0.495
AD7993	10	4	0.495
AD7997	10	8	0.495
AD7998	12	8	0.495

2-Channel SPI

Part Number	Resolution (Bits)	Speed (kSPS)	Power (mW)
AD7922	12	1000	4.8
AD7912	10	1000	4.8
AD7921	12	250	4
AD7911	10	250	4

4-Channel I²C

Part Number	Resolution (Bits)	Speed (kSPS)	Power Max (mW)
AD7991	12	4	0.3
AD7995	10	4	0.3
AD7999	8	4	0.3

8-Channel SPI

Part Number	Resolution (Bits)	Speed (kSPS)	Power Max (mW)
AD7928	12	1000	6
AD7918	10	1000	6
AD7908	8	1000	6
AD7927	12	200	3.6

4-Channel SPI

Part Number	Resolution (Bits)	Speed (kSPS)	Power Max (mW)
AD7924	12	1000	6
AD7914	10	1000	6
AD7904	8	1000	6
AD7923	12	200	3.6

16-Channel SPI

Part Number	Resolution (Bits)	Speed (kSPS)	Power Max (mW)
AD7490	12	1000	5.4

ADI offers an extensive portfolio of multichannel products, both SPI and I²C, meeting the combined requirements of integration and low power dissipation. Power dissipation ranges from 0.3 mW for our I²C range to up to a maximum of 6 mW for our SPI portfolio. SPI flexible throughputs range up to a market-leading 1 MSPS across a range of channel counts—2-, 4-, 8-, and 16-channel. These products are ideal for data acquisition, monitoring, and supervision in applications ranging from communications to medical. SPI interface products' fast 1 MSPS throughputs make them suitable for control loop applications, where speed is critical. I²C converters are specifically suited to monitor miscellaneous voltages, like power supply or bias voltages, which are outside the main signal chain, and yet are critical to functionality and performance. Whatever your multichannel ADC application requirements, the solution is a product from ADI.

For All Your I²C Needs

The AD7998 is one member of a large family of 12-/10-/8-bit SAR ADCs with a full I²C- and SMBus-compatible interface. The family includes 2-/4-/8-channel versions, in 10-lead MSOP, 16-lead TSSOP, and 20-lead TSSOP package options. All products feature a fast throughput rate of up to 188 kSPS. The AD7998 contains an 8-channel multiplexer and track-and-hold amplifier and provides a 2-wire serial interface, which is compatible with I²C interfaces. The part comes in two versions, AD7998-0 and AD7998-1. Each version allows for a minimum of two different I²C addresses. The AD7998-0 supports standard and fast I²C interface modes, while the AD7998-1 supports standard, fast, and high speed I²C interface modes. With the AD7998, monitoring can be done with only minimal processor supervision as the on-chip threshold registers interrupt only when an input exceeds the limit.

The Market's Smallest 4-Channel I²C ADC—the AD7991

The AD7991 is the industry's smallest 4-channel, 12-bit ADC with I²C-compatible interface. 8-bit/10-bit pin-compatible solutions are also available. Analog Devices' multichannel I²C ADCs are unmatched in their ability to deliver the low power, small footprint, and low cost requirements that today's I²C system monitors demand.

AD799x Family Features

- Specified for V_{DD} of 2.7 V to 5.5 V
- Temperature range: –40°C up to +125°C
- I²C-compatible interface
- On-chip channel sequencer

AD7998 Features

- 12-bit ADC with conversion time of 2 µs typ
- 8 single-ended analog input channels
- 20-lead MSOP package
- Out of range indicator/alert function
- Automatic cycle mode
- 2-/4-/8-channel, 10-bit/12-bit options available
- 10-/16-/20-lead TSSOP

AD7991 Features

- 12-bit ADC with conversion time of 1 µs typ
- 4-channel/3-channel with reference input
- 8-lead SOT-23 package
- 8-bit/10-bit pin-compatible options available

Applications

- Channel monitoring
- Battery and temperature measurements
- Medical instruments
- Voltage monitoring
- Infotainment

Channel Count	1	4	8
4.75 V to 5.25 V	•		
2.7 V to 5.25 V		•	•

2.7 V to 5.25 V Supply, 4-Channel

Part Number	Resolution (Bits)	Speed (kSPS)	Power Max (mW)	Channels
AD7934	12	1500	6	4
AD7934-6	12	625	3.6	4
AD7933	10	1500	6	4

2.7 V to 5.25 V Supply, 8-Channel

Part Number	Resolution (Bits)	Speed (kSPS)	Power Max (mW)	Channels
AD7938	12	1500	6	8
AD7938-6	12	625	3.6	8
AD7939	10	1500	6	8

4.75 V to 5.25 V Supply, Single Channel

Part Number	Resolution (Bits)	Speed (kSPS)	Power Max (mW)	Channels
AD7484	14	3000	90	1
AD7482	12	3000	90	1

True Bipolar-Input, 12-Bit to 18-Bit Resolution ADCs

Channels	Interface	12-Bit/ 13-Bit	14-Bit	16-Bit	18-Bit
Single	Serial	•	•		
	Parallel		•		
	Serial, parallel	•	•	•	•
Multi	Serial	•		•	
	Parallel				
	Serial, parallel	•			

Multichannel Serial 12-Bit/13-Bit ADCs

Part Number	Resolution (Bits)	Speed (kSPS)	Power (mW)	Channels
AD7321	13	500	18	2
AD7322	13	1000	21	2
AD7323	13	500	18	4
AD7324	13	1000	21	4
AD7327	13	500	18	8
AD7328	13	1000	21	8
AD7329	13	1000	21	8
AD7890	12	100	30	8

Single Channel Serial/Parallel 16-Bit/18-Bit ADCs

Part Number	Resolution (Bits)	Speed (kSPS)	Power (mW)
AD7610	16	250	90
AD7612	16	750	190
AD7631	18	250	73
AD7634	18	670	175
AD7663	16	250	35
AD7665	16	570	93
AD7671	16	1000	112

Single Channel Serial 12-Bit/14-Bit Single-Supply ADCs

Part Number	Resolution (Bits)	Speed (kSPS)	Power (mW)
AD7893	12	117	25
AD7895	12	200	16
AD7898	12	220	22.5 (max)
AD7894	14	200	20

Single Channel Serial/Parallel 14-Bit ADCs

Part Number	Resolution (Bits)	Speed (kSPS)	Power (mW)
AD7951	14	1000	215
AD7952	14	1000	215

Multichannel Serial 16-Bit ADC

Part Number	Resolution (Bits)	Speed (kSPS)	Power (mW)	Channels
AD974	16	400	120	4

Single Channel Serial/Parallel 12-Bit Single-Supply ADC

Part Number	Resolution (Bits)	Speed (kSPS)	Power (mW)
AD7892	12	600	60

Multichannel Serial/Parallel 12-Bit Single-Supply ADC

Part Number	Resolution (Bits)	Speed (kSPS)	Power (mW)	Channels
AD7891	12	500	82	8

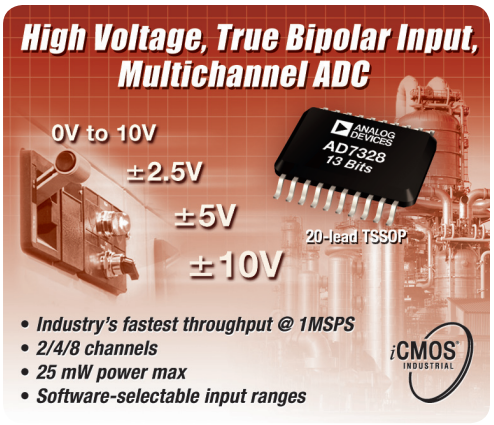
Single Channel Parallel 14-Bit Single-Supply ADC

Part Number	Resolution (Bits)	Speed (kSPS)	Power (mW)
AD7899	14	400	80

True bipolar capability means that the input signal can go both positive and negative with respect to the GND terminal of the ADC. This eliminates the need for costly and error-inducing external biasing circuitry. Biasing circuitry invariably has resistors that, if not tightly matched, can dominate the offset and gain performance of the system. Alternatively, the use of bipolar-input ADCs in high accuracy systems results in a lower overall cost where the ADC specification encompasses almost all the offset and gain errors. Such converters typically have either dual supplies or bias up the input signal internally before reaching the converter.

The *i*CMOS® process technology from ADI combines bipolar, high voltage transistors with low geometry converters to condition bipolar input signals. Architecture advantages include higher input impedances and higher bandwidths. Such converters include the 12-bit AD7328 and 16-bit/18-bit AD7612/AD7634, which can accommodate signals from ±2.5 V to ±10 V while operating at throughput rates of up to 1 MSPS for the 13-bit parts and 670 kSPS for the 18-bit parts.

ADI also offers converters with resistive front ends for signal biasing. The advantage of the latter is single power-supply operation even though the signal input is bipolar. Examples of such converters include the AD7892 12-bit, 600 kSPS ADC and the AD974 4-channel, 200 kSPS, 16-bit ADC.



Simultaneous Sampling ADCs

ADI offers an extensive portfolio of simultaneous sampling ADCs incorporating high performance, resolution, and accuracy with multiple channel combinations that serve to ease the design challenges faced in a variety of applications.

Multichannel Simultaneous Sampling ADC Eases Complexities of Design

Designers of multichannel current and voltage monitoring systems deal with a complex host of design challenges, such as dual supply requirements, limited analog input range, low analog input impedance, and high costs due to implementation of expensive discrete components.

The AD7606 ADC data acquisition chip simplifies multichannel design challenges with its 8-channel, 16-bit, true bipolar, simultaneously sampling ADC.

Integrating multiple channels onto a single chip enables the measurement of three phases; current, voltage, and neutral lines in substation automation equipment. The simultaneous sampling capability allows for the preservation of phase information while sampling bipolar voltages and currents over a wide dynamic range. The AD7606 offers bipolar inputs from a single 5 V supply, high impedance analog inputs and an on-board reference allowing for single-supply systems and eliminating the need for external components.

The AD7606 family is capable of achieving a sampling rate of up to 200 kSPS for all eight channels. The part contains low noise, high impedance inputs and signal scaling amplifiers that can handle input frequencies of up to 22 kHz.

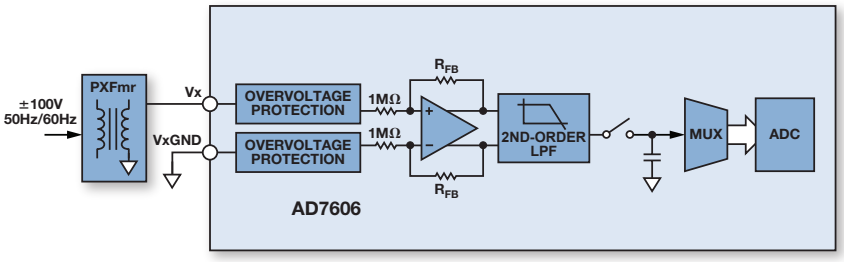
The combination of the analog input antialiasing filter and the on-chip digital filter will eliminate the need for complex filtering circuitry before AD7606 and allow direct connection to sensors.

The AD7606 SNR performance is 90 dB with the option to use the on-chip digital filter to further improve SNR performance, reduce code spread, and enhance antialias rejection. The conversion process and data acquisition are controlled using CONVST signals and an internal oscillator. Two CONVST pins allow the simultaneous sampling of all eight analog inputs or two groups of four analog input channels to allow for phase differences between transformers. Both high speed parallel and serial interface modes are available.

The 16-bit AD7606 is available in 8-/6-/4-channel versions; a 14-bit version with the same options is found in AD7607.

AD7606 Features

- 8-/6-/4-channel simultaneously sampled inputs
- True bipolar analog input ranges: ±10 V, ±5 V
- Single 5 V analog supply, 1.8 V to 5 V V_{DRIVE}
- 1 MΩ analog input impedance
- Analog input clamp protection
- Fast throughput rate: up to 200 kSPS
- Low power: 100 mW typical at 200 kSPS
- 0.1% gain and 0.01% offset error



24-Bit, Wide Bandwidth Analog-to-Digital Converters

The AD776x family showcases Analog Devices' 24-bit ADC technology for wide bandwidth applications. The AD776x family is suitable for a broad range of applications where 24-bit resolution is paramount and where both ac and dc performance are desired. Frequency domain applications are serviced for input bandwidths up to 1 MHz with low ripple, linear phase on-board digital filters.

The 2.5 MSPS AD7760 features an on-board differential amplifier, an on-board reference buffer, several decimation rate options, programmable gain and offset registers, and programmable FIR filter response. On the other end of the family is the low power, ultra-accurate AD7767 with different speed options and a dynamic range of 115 dB for just 8 mW of power.

All AD776x devices include SYNC functionality, which enables multi-channel simultaneous sampling.

Features

- Highest input bandwidth, AD7760, 1 MHz input bandwidth, 100 dB dynamic range
- Lowest power, AD7767-2, 8.5 mW, 32 kSPS, 115 dB dynamic range
- Filter programmability, AD7760/AD7762/AD7763, customize digital filter response
- Selectable filter decimation, AD7760/AD7762/AD7763/AD7764/AD7765, flexible trade-off between speed with noise
- Antialias protection, AD7764/AD7765, full alias protection, 120 dB attenuationof aliases at Nyquist
- Highest accuracy, AD7767, 18-bit linearity, 3 ppm INL
- Lowest zero error drift, AD7767, 15 nV/°C

Isolated Σ-Δ Modulators

The AD7400A/AD7401A family is based on ADI's award winning *i*Coupler technology, which employs magnetic coupling via signal transformers.

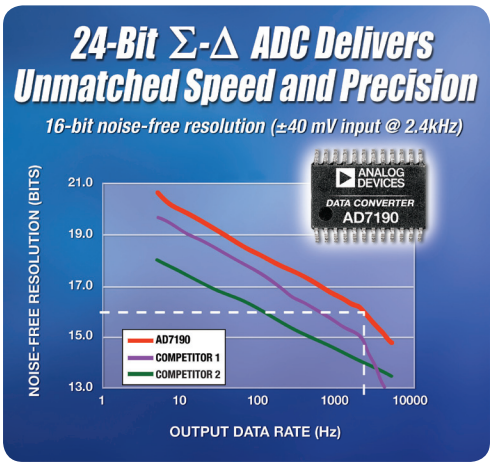
The AD7400/AD7401 family operates from a 5 V power supply and accepts a differential input signal of up to ±250 mV (±320 mV full scale). The analog input is continuously sampled by the analog modulator, eliminating the need for external sample-and-hold circuitry. The input information is contained in the output stream as a density of ones with a data rate up to 20 MHz, and the original information is reconstructed with an appropriate digital filter. The serial interface is digitally isolated. In applications where a digital filter is not available, the AD7400 family can be configured as an analog isolation amplifier. Combining the AD7400/AD7401 with some simple analog filtering will enable the generation of an output waveform representative of the analog input.

High speed CMOS, combined with monolithic air core transformer technology, means the on-chip isolation provides outstanding performance characteristics, superior to alternatives. The AD7400/AD7401 are offered in a 16-lead SOIC or 8-pin gull wing package and have an operating temperature range of –40°C to +125°C. The AD7400 family of parts may be deployed in designs where isolation is required, such as current feedback loops for motor control, or any application where isolated monitoring is required, for example, in power module applications.

Σ-Δ ADCs

AD7190: 4.8 kHz, Ultralow Noise, 24-Bit Σ-Δ ADC with PGA Enables Faster Precision Measurement

The AD7190 is the first device of a new family of industry-leading Σ-Δ ADCs aimed at enabling industrial equipment manufacturers to expand the operating speed and precision of their high performance measurement products. The AD7190 ADC achieves greater than 16-bit noise-free resolution up to 2.4 kHz for an input voltage range from 40 mV to 5 V. This level of performance allows designers to measure smaller signals faster and with greater accuracy, which can significantly improve the performance of precision industrial measurement and control systems, such as weigh scales, PLC/DCS analog input modules, and process controllers. Additionally, designers can achieve an industry-leading 20.5-bit noise-free resolution for their high precision dc systems given the device's noise performance of only 8.5 nV rms for an input signal of 40 mV at a 4.7 Hz data rate. At this same data rate, the AD7190 delivers 22.5-bit noise-free resolution for a 5 V input signal. Delivering superior noise-free resolution across the widest data rate and input signal range of any Σ-Δ ADC, the AD7190 offers manufacturers the flexibility to use the same data converter solution in multiple lines of end equipment.



Features

- Ultralow noise (8.5 nV rms)
- Up to 22.5 bits noise-free resolution
- Programmable data rates from 4.7 Hz to 4.8 kHz
- Integrated PGA and clock
- Zero latency mode available
- Simultaneous 50 Hz/60 Hz rejection
- Temperature specified up to +105°C
- 24-lead TSSOP

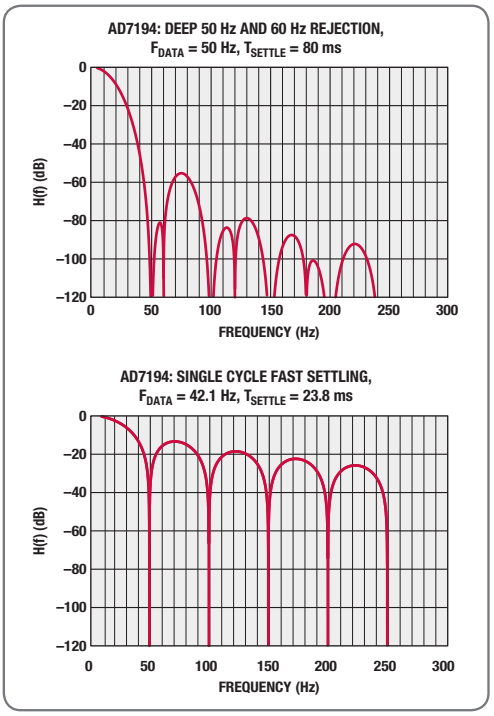
Applications

- Weigh scales
- Distributed control systems
- Programmable logic controllers

AD7194: Precision Σ-Δ ADC with Configurable Filtering Adds Flexibility to Industrial Measurement System Designs

Engineers designing industrial measurement systems must take into account the need to reject 50 Hz and 60 Hz power line frequencies in sensitive signal chains. Some system modules need a high level of power line rejection and must sacrifice conversion speed to meet these requirements, while other system modules must provide faster conversion speeds but still maintain some reduced level of power line rejection. Until now, the design engineer had to select and qualify two separate Σ-Δ ADCs to meet requirements in these two types of data measurement systems.

The AD7194 8-/16-channel, 4.8 kHz, ultralow noise, 24-bit Σ-Δ ADC with integrated PGA and fast settling filter is the first ADC to offer design engineers a flexible approach to solving the power line rejection problem. The AD7194 contains a regular sinc filter, which gives excellent rejection of 50 Hz and 60 Hz line frequencies. However, the device also offers a fast settling filter option, which allows customers to achieve nearly four times the conversion speed, while maintaining around 40 dB of line frequency rejection. With this flexibility in application, system designers can utilize one Σ-Δ ADC IC for multiple industrial measurement system requirements, saving time to market and R&D costs.



Features

- Fast settling filter option
- Ultralow noise
- On-chip PGA
- 16 channels in 32-lead, 5 mm × 5 mm LFCSP

Precision Resolution, 14 Bits to 18 Bits

AD7682/AD7689/AD7699/AD7949

The latest 14-bit and 16-bit multichannel ADCs from Analog Devices offer customers the specifications they've been looking for in monitoring applications such as optical modules for telecommunications. The 4-channel and 8-channel versions of these ADCs allow monitoring of all key module measurements such as laser bias current, received optical power, transceiver input voltage, and temperature monitoring. The pin-for-pin compatibility provides users with the ability to increase sampling rates to 500 kSPS or upgrade from 14-bit to 16-bit accuracy.

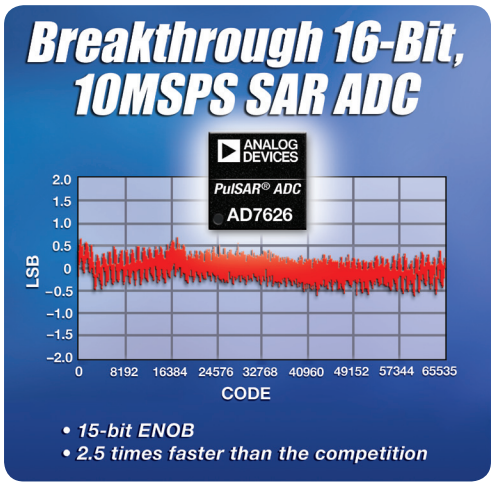
Other Applications

Portable and battery-operated equipment require small packages and low power, and the AD7682/AD7689/AD7699/AD7949 all fit in the 4 mm × 4 mm, 20-lead LFCSP, dissipating just 3.5 mW when operating at 2.5 V and 250 kSPS.

Part Number	Channel Count	Resolution (Bits)	Throughput (kSPS)	Power (mW)
AD7682	4	16	250	18
AD7689	8	16	250	18
AD7699	8	16	500	36
AD7949	8	14	250	18

High Speed SAR ADCs

The AD7626 is a breakthrough in data conversion that delivers an unequaled combination of speed and power. This 16-bit PulSAR ADC features best-in-class 15-bit ENOB and 10 MSPS throughput, which is 2.5 times faster than the closest competition. The ability of the AD7626 to process information at high speed, while preserving data integrity, is a key requirement of medical imaging and data acquisition systems. Available in a compact 5 mm × 5 mm LFCSP, it is 70% smaller than competing offerings and consumes just 130 mW of power.



"For high end X-ray imaging devices, accuracy and throughput are key performance vectors that enable higher image quality and improved frame rates," said Stephane Rossignol, Electronics and ASIC group manager, Trixell, a leading developer of flat panel digital detectors for radiological imaging and a joint venture company of Thales Electron Devices, Philips Medical Systems, and Siemens Healthcare. "Trixell, a long time partner of Analog Devices, chose the AD7626 PulSAR ADC because it meets the speed, precision, power, package size, and price requirements of our end-system designs."

Part Number	Sampling Rate (MSPS)	Resolution (Bits)	INL (ppm)	SNR Typ (dB)	Power (mW)
AD7626	10	16	30	92	140
AD7625	6	16	30	92	120
AD7621	3	16	30	90	86
AD7985	2.5	16	22	91.5	11
AD7944	2.5	14	60	84	15.5
AD7986	2	18	9.4	97	15
AD7641	2	18	13	93.5	85
AD7622	2	16	23	92	80
AD7984	1.33	18	8.4	98.5	10.5
AD7983	1.33	16	15	92	10.5
AD7623	1.33	16	30	89.5	53
AD7643	1.25	18	13	93.5	62
AD7982	1	18	7.5	95.5	7
AD7980A/AD7980B	1	16	18.75/37.5	90	7

Programmable, 14-Bit to 18-Bit Resolution, Bipolar ADCs

Featuring software selectable analog input ranges across multiple selections of unipolar and bipolar ranges, these 14-,16-, and 18-bit bipolar ADCs eliminate the need for expensive level shifting and gain stages in front-end analog circuitry, resulting in a dramatic reduction in component costs and board space requirements. Using the ADCs' internal registers, designers have the flexibility of switching from four different input voltage ranges on-the-fly with zero data latency. With clocking speeds up to 1 MSPS, these ADCs offer up to a sixfold improvement in sampling rate performance over existing programmable ADCs. The combination of functionality, performance, and a 50% smaller footprint—at half the price of competing products—is unprecedented for SAR ADCs.

Part Number	Resolution (Bits)	Sample Rate	Max Operating Power (mW)	Analog Input Range (V)
AD7951	14	1 MSPS	100	0 to +5, 0 to +10, ±5, ±10
AD7952	14	1 MSPS	100	0 to +5, 0 to +10, ±5, ±10 diff
AD7610	16	250 kSPS	38	0 to +5, 0 to +10, ±5, ±10
AD7612	16	750 kSPS	85	0 to +5, 0 to +10, ±5, ±10
AD7631	18	250 kSPS	38	±10 diff
AD7634	18	670 kSPS	80	±10 diff

ADCs for Automotive Applications

ADI offers a selection of ADCs with separate manufacturing flows targeted at automotive applications.

Function	Part Number	Resolution (Bits)	Speed (kSPS)	Channels
ADC	AD7887	12	125	2
	AD7476A	12	1000	1
	AD7477A	10	1000	1
	AD7478A	8	1000	1
	AD7812	10	350	8
	AD7928	12	1000	8
	AD7927	12	200	8
	AD7923	12	200	4
	AD7924	12	1000	4
	AD7918	10	1000	8
	AD7914	10	1000	4
	AD7908	8	1000	8
	AD7904	8	1000	4
Function	**Part Number**	**Resolution (Bits)**	**Speed (rps)**	**Channels**
RDC	AD2S1205	12	1250	2
	AD2S1210	16	2500	2

Contact Analog Devices for further information.

Precision Σ-Δ ADCs

Part Number	Resolution (Bits)	AIN Channels	Min Input Range (V)	Max Input Range (V)	Peak-to-Peak (p-p) Resolution @ Max Input Range		Power Supply Current Typ (mA)	On-Chip PGA	On-Chip AIN Buffer	On-Chip Current Source	Features	Price @ 1k ($U.S.)
					Resolution (p-p) (Bits)	@ Data Rate (Hz)						
AD7170 ***New***	12	1		$\pm V_{REF}$	12	125	0.11				Low power	0.95
AD7171 ***New***	16	1		$\pm V_{REF}$	16	125	0.11				Low power	1.15
AD7701	16	1		$\pm V_{REF}$	16	4000	5				Update rate is 4 kHz, bandwidth is 10 Hz	14.59
AD7715	16	1	$\pm V_{REF}/128$	$\pm V_{REF}$	16	60	0.55	•	•			5.65
AD7788	16	1		$\pm V_{REF}$	16	16.6	0.07				Low power	1.99
AD7790	16	1	$\pm V_{REF}/8$	$\pm V_{REF}$	16	16.6	0.13		•		Low power	2.95
AD7796	16	1		$\pm V_{REF}/128$	15.5	16.6	0.25	•	•		Low power and low noise	2.75
AD7705	16	2	$\pm V_{REF}/128$	$\pm V_{REF}$	16	60	0.5	•	•			4.12
AD7706	16	3	$\pm V_{REF}/128$	$\pm V_{REF}$	16	60	0.5	•	•			4.12
AD7707	16	3	$\pm V_{REF}/128$	$\pm 4V_{REF}$	16	60	0.5	•	•			4.46
AD7792	16	3	$\pm V_{REF}/128$	$\pm V_{REF}$	16	16.6	0.4	•	•	•	Low power and low noise	3.99
AD7798	16	3	$\pm V_{REF}/128$	$\pm V_{REF}$	16	16.6	0.3	•	•		Low power and low noise	3.80
AD7709	16	4	$\pm 1.024\ V_{REF}/128$	$\pm 1.024\ V_{REF}$	16	20	1.25	•	•	•		3.89
AD7795	16	6	$\pm V_{REF}/128$	$\pm V_{REF}$	16	16.6	0.4	•	•	•	Low power and low noise	4.40
AD7708	16	10	$\pm 1.024\ V_{REF}/128$	$\pm 1.024\ V_{REF}$	16	20	1.3	•	•			3.98
AD7703	20	1		$\pm V_{REF}$	17	4000	5				Update rate is 4 kHz, bandwidth is 10 Hz	17.33
AD7785	20	3	$\pm V_{REF}/128$	$\pm V_{REF}$	18.6	16.6	0.4	•	•	•	Low power and low noise	4.20
AD7783	24	1	$\pm 1.024\ V_{REF}/16$	$\pm 1.024\ V_{REF}$	18.5	20	1.3	•	•	•	Read only	4.25
AD7789	24	1		$\pm V_{REF}$	19	16.6	0.07				Low power	2.95
AD7791	24	1		$\pm V_{REF}$	19	16.6	0.13		•		Low power	3.83
AD7797	24	1		$\pm V_{REF}/128$	15.5	16.6	0.25	•	•		Low power and low noise	3.35
AD7710	24	2	$\pm V_{REF}/128$	$\pm V_{REF}$	17.5	60	5	•		•		16.69
AD7711	24	2	$\pm V_{REF}/128$	$\pm V_{REF}$	17.5	60	5	•		•	2 current sources	17.68
AD7711A	24	2	$\pm V_{REF}/128$	$\pm V_{REF}$	17.5	60	5	•		•	1 current source	17.68
AD7712	24	2	$\pm V_{REF}/128$	$\pm V_{REF}$	17.5	60	5	•				15.25
AD7730	24	2	$\pm 1.024\ V_{REF}/256$	$\pm 1.024\ V_{REF}/32$	17	200	13	•	•		Weigh scale	9.86
AD7730L	24	2	$\pm 1.024\ V_{REF}/256$	$\pm 1.024\ V_{REF}/32$	17	200	13	•	•		Weigh scale	8.12
AD7732	24	2	$\pm 2V_{REF}$	$\pm 4V_{REF}$	16	2000	14.5		•		Fast channel switching	8.50
AD7780 ***New***	24	1	$\pm V_{REF}/128$	$\pm V_{REF}$	18.7	16.7	0.33	•	•		Weigh scale	2.70
AD7781 ***New***	20	1	$\pm V_{REF}/128$	$\pm V_{REF}$	18.7	16.7	0.33	•	•		Weigh scale	1.95
AD7782	24	2	$\pm 1.024\ V_{REF}/16$	$\pm 1.024\ V_{REF}$	18.5	20	1.3	•	•		Read only	4.25
AD7787	24	2		$\pm V_{REF}$	19	16.6	0.13		•		Low power	3.95
AD7191 ***New***	24	2	$\pm V_{REF}/128$	$\pm V_{REF}$	21.5	10	4.35	•	•		Pin Programmable	3.80
AD7192 ***New***	24	2	$\pm V_{REF}/128$	$\pm V_{REF}$	22	4.7	4.35	•	•		Low noise/4 kHz max update rate	4.90
AD7190 ***New***	24	2	$\pm V_{REF}/128$	$\pm V_{REF}$	22.5	4.7	6	•	•		Low noise/4 kHz max update rate	5.90
AD7195	24	2	$\pm V_{REF}/128$	$\pm V_{REF}$	22.5	4.7	6	•	•		AC excitation	7.50
AD7713	24	3	$\pm V_{REF}/128$	$\pm V_{REF}$	16	20	1.1	•		•		18.66
AD7793	24	3	$\pm V_{REF}/128$	$\pm V_{REF}$	18.6	16.6	0.4	•	•	•	Low power and low noise	5.10
AD7799	24	3	$\pm V_{REF}/128$	$\pm V_{REF}$	18.6	16.6	0.38	•	•		Low power and low noise	4.35
AD7734	24	4	$\pm 2V_{REF}$	$\pm 4V_{REF}$	16	2000	14.5		•		Fast channel switching	8.50
AD7714	24	5	$\pm V_{REF}/128$	$\pm V_{REF}$	17.5	60	0.55	•	•			8.28
AD7719	24	5	$\pm 1.024\ V_{REF}/128$	$\pm 1.024\ V_{REF}$	18.5	20	1.5	•	•	•	Dual ADC	8.76
AD7731	24	5	$\pm 1.024\ V_{REF}/128$	$\pm 1.024\ V_{REF}/2$	17	800	13.5	•	•			9.86
AD7193 ***New***	24	4	$\pm V_{REF}/128$	$\pm V_{REF}$	22	4.7	4.65	•	•		Low noise/4 kHz max update rate	5.4
AD7794	24	6	$\pm V_{REF}/128$	$\pm V_{REF}$	18.6	16.6	0.4	•	•	•	Low power and low noise	5.80
AD7738	24	8	$\pm V_{REF}/4$	$\pm V_{REF}$	16	8500	14.5		•		Fast channel switching	7.77
AD7739	24	8	$\pm V_{REF}/4$	$\pm V_{REF}$	16	4000	14.5		•		Fast channel switching	7.65
AD7194	24	8	$\pm V_{REF}/128$	$\pm V_{REF}$	22	4.7	4.65	•	•		Low noise/4 kHz max update rate	6.95
AD7718	24	10	$\pm 1.024\ V_{REF}/128$	$\pm 1.024\ V_{REF}$	18.5	20	1.3	•	•			5.24
Isolated Σ-Δ ADCs												
AD7400	16	1	±0.2	±0.32	16	10,000	6	•	•	•	Isolated Σ-Δ	4.00
AD7401	16	1	±0.2	±0.32	16	20,000	6	•	•	•	Isolated Σ-Δ, external clock	4.00
AD7400A	16	1	±0.25	±0.32	16	10,000	15.5	•	•	•	Isolated Σ-Δ	4.00
AD7401A	16	1	±0.25	±0.32	16	20,000	17	•	•	•	Isolated Σ-Δ, external clock	4.00

8-Bit to 14-Bit Precision ADCs

Part Number	Resolution (Bits)	Data Bus Interface	Sample Rate (kSPS)	Number of Channels	Supply Range (V)	Power (mW)	Power-Down Mode	Analog Input Range (V)	Reference (V)	Package	Features	Price @ 1k ($U.S.)
Single-Channel, True Differential, and Pseudo Differential ADCs												
AD7946	14	Serial	500	1	5 (1.8 to 5 logic)	3.3	•	0 to V_{REF}	0.5 to 5 (external)	10-lead MSOP, 10-lead LFCSP	14-bit, no missing codes, ±1 LSB INL, 85 dB SNR	7.37
AD7942	14	Serial	250	1	2.7 to 5 (1.8 to 5 logic)	1.5	•	0 to V_{REF}	0.5 to 5 (external)	10-lead MSOP, 10-lead LFCSP	14-bit, no missing codes, ±1 LSB INL, 85 dB SNR	4.75
AD7949	14	Serial	250	8	2.7 to 5 (1.8 to 5 logic)	15	•	0 to V_{REF}	2.5/4.1	20-lead LFCSP	14-bit, no missing codes, ±1 LSB INL, 83 dB SNR	3.99
AD7450A	12	Serial	1000	1	2.7 to 5.25	4 max	•	2 × V_{REF}	2.5 (external)	8-lead SOT-23, 8-lead MSOP	Differential input, 1 MSPS, 12-bit ADC	4.30
AD7451	12	Serial	1000	1	2.7 to 5.25	4 max	•	V_{REF}	2.5 (external)	8-lead SOT-23, 8-lead MSOP	Pseudo differential, 1 MSPS, 12-bit ADC	4.25
AD7452	12	Serial	555	1	2.7 to 5.25	3.3 max	•	2 × V_{REF}	2.5 (external)	8-lead SOT-23	Differential input, 555 kSPS, 12-bit ADC	2.95
AD7453	12	Serial	555	1	2.7 to 5.25	3.3 max	•	V_{REF}	2.5 (external)	8-lead SOT-23	Pseudo differential input, 555 kSPS, 12-bit ADC	2.95
AD7457	12	Serial	100	1	2.7 to 5.25	0.9 max	•	V_{REF}	2.5 (external)	8-lead SOT-23	Pseudo differential, 100 kSPS, 12-bit ADC	2.05
AD7440	10	Serial	1000	1	2.7 to 5.25	4 max	•	2 × V_{REF}	2.5 (external)	8-lead SOT-23, 8-lead MSOP	Differential input, 1 MSPS, 10-bit ADC	2.50
Single-Ended SARs												
AD7944 ***New***	14	Serial	2500	1	2.3 to 2.6	17 max	•	0 to V_{REF}	4.096	20-lead LFCSP	Turbo mode, 2.5 V and 5 V supplies	9.99
AD7485	14	Serial	1000	1	4.75 to 5.25	80 max	•	0 to 2.5	2.5 (external/internal)	48-lead LQFP	12-bit, 1 MSPS, serial ADC	9.00
AD7940	14	Serial	100	1	2.5 to 5.5	5.2 max	•	0 to V_{DD}	V_{DD}	6-lead SOT-23, 8-lead MSOP	14-bit, serial, 100 kSPS SAR ADC	4.10
AD7274	12	Serial	3000	1	2.35 to 3.6	11.4	•	0 to V_{REF}	1.2 V to V_{DD} (external)	8-lead TSOT, 8-lead MSOP	12-bit, 3 MSPS SAR ADC with external V_{REF}	6.50
AD7276	12	Serial	3000	1	2.35 to 3.6	12.6	•	0 to V_{DD}	V_{DD}	6-lead TSOT, 8-lead MSOP	12-bit, 3 MSPS SAR ADC	6.25
AD7472	12	Parallel	1500	1	2.7 to 5.25	4.5 max	•	0 to V_{REFIN}	2.5 (external)	24-lead SOIC, 24-lead TSSOP	1.5 MSPS, 4.5 mW, 12-bit parallel ADC	6.25
AD7492	12	Parallel	1250	1	2.7 to 5.25	13.75	•	0 to 2.5	2.5 (internal)	24-lead TSSOP, 24-lead SOIC	1.25 MSPS, 16 mW, internal REF and CLK, 12-bit parallel ADC	6.89
AD7475	12	Serial	1000	1	2.7 to 5.25	4.5 max	•	0 to V_{REFIN}	2.5 (external)	8-lead MSOP, 8-lead SOIC	Low power, 1 MSPS, 12-bit ADC	4.25
AD7476A	12	Serial	1000	1	2.35 to 5.25	3.6	•	0 to V_{DD}	V_{DD}	6-lead SC70, 8-lead MSOP	2.35 V to 5.25 V, 1 MSPS, 12-bit ADC	4.00
AD7495	12	Serial	1000	1	2.7 to 5.25	6 max	•	0 to 2.5	2.5 (internal)	8-lead MSOP, 8-lead SOIC	Low power, 1 MSPS, 12-bit ADC with internal V_{REF}	5.19
AD7920	12	Serial	250	1	2.35 to 5.25	3.6	•	0 to V_{DD}	V_{DD}	6-lead SC70, 8-lead MSOP	Low power, 250 kSPS, 12-bit ADC	2.05
AD7466	12	Serial	200	1	1.6 to 3.6	0.3 max	•	0 to V_{DD}	V_{DD}	6-lead SOT-23, 8-lead MSOP	1.6 V, micropower, 12-bit ADC	2.35
AD7273	10	Serial	3000	1	2.35 to 3.6	9.6	•	0 to V_{REF}	1.2 to V_{DD} (external)	8-lead TSOT, 8-lead MSOP	10-bit, 3 MSPS SAR ADC with external V_{REF}	3.75
AD7277	10	Serial	3000	1	2.35 to 3.6	10.5	•	0 to V_{DD}	V_{DD}	6-lead TSOT, 8-lead MSOP	10-bit, 3 MSPS SAR ADC	3.60
AD7470	10	Parallel	1750	1	2.7 to 5.25	4.5 max	•	0 to V_{REFIN}	2.5 (external)	24-lead SOIC, 24-lead TSSOP	1.75 MSPS, 4.5 mW, 10-bit parallel ADC	3.00
AD7477A	10	Serial	1000	1	2.35 to 5.25	3.6	•	0 to V_{DD}	V_{DD}	6-lead SC70, 8-lead MSOP	2.35 V to 5.25 V, 1 MSPS, 10-bit ADC	2.50
AD7910	10	Serial	250	1	2.35 to 5.25	3.6	•	0 to V_{DD}	V_{DD}	6-lead SC70, 8-lead MSOP	Low power, 250 kSPS, 10-bit ADC	1.75
AD7467	10	Serial	275	1	1.6 to 3.6	0.25 max	•	0 to V_{DD}	V_{DD}	6-lead SOT-23, 8-lead MSOP	1.6 V, micropower, 10-bit ADC	1.90
AD7278	8	Serial	3000	1	2.35 to 3.6	10.5	•	0 to V_{DD}	V_{DD}	6-lead TSOT, 8-lead MSOP	8-bit, 3 MSPS SAR ADC	1.85
AD7478A	8	Serial	1200	1	2.35 to 5.25	3.6	•	0 to V_{DD}	V_{DD}	6-lead SC70, 8-lead MSOP	2.35 V to 5.25 V, 1.2 MSPS, 8-bit ADC	0.95
AD7468	8	Serial	320	1	1.6 to 3.6	0.2 max	•	0 to V_{DD}	V_{DD}	6-lead SOT-23, 8-lead MSOP	1.6 V, micropower, 8-bit ADC	1.15
Parallel ADCs												
AD7484	14	Parallel	3000	1	4.75 to 5.25	90 max	•	0 to 2.5	2.5 (external/internal)	48-lead LQFP	14-bit, 3 MSPS parallel ADC	12.00
AD7482	12	Parallel	3000	1	4.75 to 5.25	90 max	•	0 to 2.5	2.5 (external/internal)	48-lead LQFP	12-bit, 3 MSPS parallel ADC	6.95
AD7934	12	Parallel	1500	4	2.7 to 5.25	6 max	•	0 to V_{REF}, 0 to 2 × V_{REF}	2.5 (external/internal)	28-lead TSSOP	4-channel, 1.5 MSPS, 12-bit parallel ADC with a sequencer	7.10
AD7938	12	Parallel	1500	8	2.7 to 5.25	6 max	•	0 to V_{REF}, 0 to 2 × V_{REF}	2.5 (external/internal)	32-lead TQFP, 32-lead LFCSP	8-channel, 1.5 MSPS, 12-bit parallel ADC with a sequencer	7.35
AD7934-6	12	Parallel	625	4	2.7 to 5.25	3.6 max	•	0 to V_{REF}, 0 to 2 × V_{REF}	2.5 (external/internal)	28-lead TSSOP	4-channel, 625 kSPS, 12-bit parallel ADC with a sequencer	4.60
AD7938-6	12	Parallel	625	8	2.7 to 5.25	3.6 max	•	0 to V_{REF}, 0 to 2 × V_{REF}	2.5 (external/internal)	32-lead TQFP, 32-lead LFCSP	8-channel, 625 kSPS, 12-bit parallel ADC with a sequencer	4.85
AD7933	10	Parallel	1500	4	2.7 to 5.25	6 max	•	0 to V_{REF}, 0 to 2 × V_{REF}	2.5 (external/internal)	28-lead TSSOP	4-channel, 1.5 MSPS, 10-bit parallel ADC with a sequencer	3.50
AD7939	10	Parallel	1500	8	2.7 to 5.25	6 max	•	0 to V_{REF}, 0 to 2 × V_{REF}	2.5 (external/internal)	32-lead TQFP, 32-lead LFCSP	8-channel, 1.5 MSPS, 10-bit parallel ADC with a sequencer	3.75
I²C ADCs												
AD7991	12	I²C	140	4	2.7 to 5.5	0.3 max	•	0 to V_{DD}, 0 to V_{REFIN}	1.2 to V_{DD} (external)	8-lead SOT	4-channel, 12-bit I²C ADC	3.18
AD7992	12	I²C	188	2	2.7 to 5.5	0.495 max	•	0 to V_{DD}, 0 to V_{REFIN}	1.2 to V_{DD} (external)	10-lead MSOP	2-channel, 12-bit ADC with I²C-compatible interface	3.00
AD7994	12	I²C	188	4	2.7 to 5.5	0.495 max	•	0 to V_{DD}, 0 to V_{REFIN}	1.2 to V_{DD} (external)	16-lead TSSOP	4-channel, 12-bit ADC with I²C-compatible interface	3.50
AD7998	12	I²C	188	8	2.7 to 5.5	0.495 max	•	0 to V_{DD}, 0 to V_{REFIN}	1.2 to V_{DD} (external)	20-lead TSSOP	8-channel, 12-bit ADC with I²C-compatible interface	3.75
AD7993	10	I²C	188	4	2.7 to 5.5	0.495 max	•	0 to V_{DD}, 0 to V_{REFIN}	1.2 to V_{DD} (external)	16-lead TSSOP	4-channel, 10-bit ADC with I²C-compatible interface	1.99
AD7995	10	I²C	140	4	2.7 to 5.5	0.3 max	•	0 to V_{DD}, 0 to V_{REFIN}	1.2 to V_{DD} (external)	8-lead SOT	4-channel, 10-bit I²C ADC	2.25
AD7997	10	I²C	188	8	2.7 to 5.5	0.495 max	•	0 to V_{DD}, 0 to V_{REFIN}	1.2 to V_{DD} (external)	20-lead TSSOP	8-channel, 10-bit ADC with I²C-compatible interface	2.25
AD7999	8	I²C	140	4	2.7 to 5.5	0.3 max	•	0 to V_{DD}, 0 to V_{REFIN}	1.2 to V_{DD} (external)	8-lead SOT	4-channel, 8-bit I²C ADC	1.55
AD7294	12	I²C	22	9	4.5 to 5.5	70	•	0 to V_{REF}, 0 to 2 × V_{REF}	2.5 (internal), 1 to V_{DD} – 2 (external)	64-lead TQFP, 56-lead LFCSP	Multichannel ADC, DAC, 2 current sensors, and 3 temperature sensors	9.71

8-Bit to 14-Bit Precision ADCs *(continued)*

Part Number	Resolution (Bits)	Data Bus Interface	Sample Rate (kSPS)	Number of Channels	Supply Range (V)	Power (mW)	Power-Down Mode	Analog Input Range (V)	Reference (V)	Package	Features	Price @ 1k ($U.S.)
Multichannel Serial ADCs												
AD7490	12	Serial	1000	16	2.7 to 5.25	5.4 max	•	0 to REF	2.5 (external)	28-lead TSSOP, 32-lead LFCSP	16-channel, 1 MSPS, 12-bit ADC with sequencer	5.95
AD7922	12	Serial	1000	2	2.35 to 5.25	4.8	•	0 to V_{DD}	V_{DD}	8-lead TSOT, 8-lead MSOP	12-bit, 2-channel, 1 MSPS ADC	4.25
AD7924	12	Serial	1000	4	2.7 to 5.25	6 max	•	0 to REF_{IN}	2.5 (external)	16-lead TSSOP	4-channel, 1 MSPS, 12-bit ADC with sequencer	4.50
AD7928	12	Serial	1000	8	2.7 to 5.25	6 max	•	0 to REF_{IN}	2.5 (external)	20-lead TSSOP	8-channel, 1 MSPS, 12-bit ADC with sequencer	4.75
AD7921	12	Serial	250	2	2.35 to 5.25	4	•	0 to V_{DD}	V_{DD}	8-lead TSOT, 8-lead MSOP	12-bit, 2-channel, 250 kSPS ADC	2.30
AD7923	12	Serial	200	4	2.7 to 5.25	3.6 max	•	0 to REF_{IN}	2.5 (external)	16-lead TSSOP	4-channel, 200 kSPS, 12-bit ADC with sequencer	2.55
AD7927	12	Serial	200	8	2.7 to 5.25	3.6 max	•	0 to REF_{IN}	2.5 (external)	20-lead TSSOP	8-channel, 200 kSPS, 12-bit ADC with sequencer	2.80
AD7912	10	Serial	1000	2	2.35 to 5.25	4.8	•	0 to V_{DD}	V_{DD}	8-lead TSOT, 8-lead MSOP	10-bit, 2 channel, 1 MSPS ADC	2.75
AD7914	10	Serial	1000	4	2.7 to 5.25	6 max	•	0 to REF_{IN}	2.5 (external)	16-lead TSSOP	4-channel, 1 MSPS, 10-bit ADC with sequencer	3.00
AD7918	10	Serial	1000	8	2.7 to 5.25	6 max	•	0 to REF_{IN}	2.5 (external)	20-lead TSSOP	8-channel, 1 MSPS, 10-bit ADC with sequencer	3.25
AD7911	10	Serial	250	2	2.35 to 5.25	4	•	0 to V_{DD}	V_{DD}	8-lead TSOT, 8-lead MSOP	10-bit, 2 channel, 250 kSPS ADC	2.00
AD7904	8	Serial	1000	4	2.7 to 5.25	6 max	•	0 to REF_{IN}	2.5 (external)	16-lead TSSOP	4-channel, 1 MSPS, 8-bit ADC with sequencer	1.55
AD7908	8	Serial	1000	8	2.7 to 5.25	6 max	•	0 to REF_{IN}	2.5 (external)	20-lead TSSOP	8-channel, 1 MSPS, 8-bit ADC with sequencer	1.85
Bipolar, Serial/Parallel, and Parallel ADCs												
AD7367	14	Serial	1000	4	±12 (3, 5 logic)*	50	•	±10, ±5, 0 to 10	2.5 (external/internal)	24-lead TSSOP	*i*CMOS, dual, 1 µs, 2-channel, simultaneous sampling ADC	7.55
AD7951	14	Parallel/serial	1000	1	±15 (3, 5 logic)*	215	•	±10, ±5, 5, 10	5	48-lead LQFP, 48-lead LFCSP	14-bit, no missing codes, ±1 LSB INL, 84.5 dB SNR	10.99
AD7952	14	Parallel/serial	1000	1	±15 (3, 5 logic)*	215	•	Differential, ±5, ±10, ±20	5	48-lead LQFP, 48-lead LFCSP	14-bit, no missing codes, ±1 LSB INL, 84.5 dB SNR	10.99
AD7367-5	14	Serial	500	4	±12 (3, 5 logic)*	46	•	±10, ±5, 0 to 10	2.5 (external/internal)	24-lead TSSOP	*i*CMOS, dual, 1 µs, 2-channel, simultaneous sampling ADC	6.55
AD7322	13	Serial	1000	2	±12 (3, 5 logic)*	21	•	±10, ±5, ±2.5, 0 to 10	2.5 (external/internal)	14-lead TSSOP	*i*CMOS, 12-bit plus sign, 1 MSPS, bipolar, 8-channel ADC	4.75
AD7324	13	Serial	1000	4	±12 (3, 5 logic)*	21	•	±10, ±5, ±2.5, 0 to 10	2.5 (external/internal)	16-lead TSSOP	*i*CMOS, 12-bit plus sign, 1 MSPS, bipolar, 4-channel ADC	5.75
AD7328	13	Serial	1000	8	±12 (3, 5 logic)*	21	•	±10, ±5, ±2.5, 0 to 10	2.5 (external/internal)	20-lead TSSOP	*i*CMOS, 12-bit plus sign, 1 MSPS, bipolar, 2-channel ADC	6.25
AD7329	13	Serial	1000	8	±12 (3, 5 logic)*	21	•	±10, ±5, ±2.5, 0 to 10	2.5 (external/internal)	24-lead TSSOP	*i*CMOS, 12-bit plus sign, 1 MSPS, bipolar, ADC with mux out	6.25
AD7321	13	Serial	500	2	±12 (3, 5 logic)*	17 max	•	±10, ±5, ±2.5, 0 to 10	2.5 (external/internal)	14-lead TSSOP	*i*CMOS, 12-bit plus sign, 500 kSPS, bipolar, 8-channel ADC	3.00
AD7323	13	Serial	500	4	±12 (3, 5 logic)*	17 max	•	±10, ±5, ±2.5, 0 to 10	2.5 (external/internal)	16-lead TSSOP	*i*CMOS, 12-bit plus sign, 500 kSPS, bipolar, 4-channel ADC	3.62
AD7327	13	Serial	500	8	±12 (3, 5 logic)*	17 max	•	±10, ±5, ±2.5, 0 to 10	2.5 (external/internal)	20-lead TSSOP	*i*CMOS, 12-bit plus sign, 500 kSPS, bipolar, 2-channel ADC	3.94
AD7366	12	Serial	1000	4	±12 (3, 5 logic)*	50	•	±10, ±5, 0 to 10	2.5 (external/internal)	24-lead TSSOP	*i*CMOS, dual, 800 ns, 2-channel, simultaneous sampling ADC	6.55
AD7366-5	12	Serial	500	4	±12 (3, 5 logic)*	46	•	±10, ±5, 0 to 10	2.5 (external/internal)	24-lead TSSOP	*i*CMOS, dual, 800 ns, 2-channel, simultaneous sampling ADC	5.55
Simultaneous Sampling ADCs												
AD7357 ***New***	14	Serial	4250	2	2.5	35	•	$\pm V_{REF}/2$	2.5 (external)/2.048 (internal)	16-lead TSSOP	14-bit, simultaneous sampling, differential ADC	10.81
AD7264	14	Serial	1000	2	4.75 to 5.25	120	•	$V_{CM} \pm V_{REF}/(2 \times \text{gain})$	2.5 (external/internal)	48-lead TQFP, 48-lead LFCSP	Integrated PGA	7.50
AD7657	14	Parallel/serial	250	6	±12 (3, 5 logic)	140 max	•	$\pm 4 \times V_{REF}, \pm 2 \times V_{REF}$	2.5 (external/internal)	64-lead LQFP	*i*CMOS, simultaneous sampling, bipolar ADC	12.36
AD7866	12	Serial	1000/666	Dual, 2-channel	2.7 to 5.5	11.4 max	•	0 to V_{REF}, 0 to $2 \times V_{REF}$	2.5 (external/internal)	16-lead TSSOP	Dual, 1 MSPS, 12-bit, 2-channel, SAR ADC, serial interface	6.80
AD7356	12	Serial	5000	2	2.5	35	•	$\pm V_{REF}/2$	2.5 (external)/2.048 (internal)	16-lead TSSOP	12-bit, simultaneous sampling, 5 MSPS differential ADC	7.89
AD7352	12	Serial	3000	2	2.5	24	•	$\pm V_{REF}/2$	2.5 (external)/2.048 (internal)	16-lead TSSOP	12-bit, simultaneous sampling, 3 MSPS differential ADC	5.50
AD7266	12	Serial	2000	Dual, 3-channel	2.7 to 5.25	30	•	0 to V_{REF}, 0 to $2 \times V_{REF}$	2.5 (external/internal)	32-lead TQFP, 32-lead LFCSP	Differential input, dual, 2 MSPS,12-bit, 3-channel SAR ADC	7.55
AD7262	12	Serial	1000	2	4.75 to 5.25	120	•	$V_{CM} \pm V_{REF}/(2 \times \text{gain})$	2.5 (external/internal)	48-lead TQFP, 48-lead LFCSP	Integrated PGA	6.50
AD7265	12	Serial	1000	Dual, 3-channel	2.7 to 5.25	10	•	0 to V_{REF}, 0 to $2 \times V_{REF}$	2.5 (external/internal)	32-lead TQFP, 32-lead LFCSP	Differential input, dual, 1 MSPS,12-bit, 3-channel SAR ADC	5.75
AD7658	12	Parallel/serial	250	6	±12 (3, 5 logic)	140 max	•	$\pm 4 \times V_{REF}, \pm 2 \times V_{REF}$	2.5 (external/internal)	64-lead LQFP	*i*CMOS, simultaneous sampling, bipolar ADC	10.60

*Analog input range dependent.

Oversampling 24-Bit ADCs

Part Number	Resolution (Bits)	Dynamic Range (dB)	Max Data Rate/SNR Typ	Min Data Rate/SNR Typ	Programmable Oversampling Rate	INL Error Typ (ppm)	Interface	Package	Low Power Mode (mW)	Price @ 1k ($U.S.)
AD7760	24	120	2.5 MHz/100 dB	78 kHz/112 dB	8× to 256×	8	Parallel	64-lead TQFP	661	34.95
AD7762	24	120	625 kHz/107 dB	78 kHz/112 dB	32× to 256×	8	Parallel	64-lead TQFP	661	17.95
AD7763	24	120	625 kHz/107 dB	78 kHz/112 dB	32× to 256×	8	Serial	64-lead TQFP	651	17.95
AD7764	24	115	312 kHz/104 dB	78 kHz/109 dB	64×, 128×, 256×	14	Serial	28-lead TSSOP	160	13.95
AD7765	24	115	156 kHz/107 dB	78 kHz/109 dB	128×, 256×	14	Serial	28-lead TSSOP	160	8.95
AD7766	24	109.5	128 kHz/108.5 dB		8×	6	Serial	16-lead TSSOP	15	5.95
AD7766-1	24	112.5	64 kHz/111.5 dB		16×	6	Serial	16-lead TSSOP	10.5	5.95
AD7766-2	24	115.5	32 kHz/113.5 dB		32×	6	Serial	16-lead TSSOP	8.5	5.95
AD7767	24	109.5	128 kHz/108.5 dB		8×	3	Serial	16-lead TSSOP	15	8.50
AD7767-1	24	112.5	64 kHz/111.5 dB		16×	3	Serial	16-lead TSSOP	10.5	8.50
AD7767-2	24	115.5	32 kHz/113.5 dB		32×	3	Serial	16-lead TSSOP	8.5	8.50

16-Bit to 18-Bit Precision ADCs

Part Number	Resolution (Bits)	Data Bus Interface	Sample Rate (kSPS)	Number of Channels	Supply Range (V)	Power (mW)	No Missing Codes (Bits)	Analog Input Range (V)	Reference (V)	DNL (LSB)	INL (LSB)	SNR (dB)	THD (dB)	Package	Price @ 1k ($U.S.)
AD7641	18	Parallel/serial	2000	1	2.5 (2.5 to 5 logic)	68	18	Differential, ±2.5	2.5	–1/+2	±3	93	–116	48-lead LQFP, 48-lead LFCSP	32.95
AD7986 ***New***	18	Serial	2000	1	2.5, 5	16.5	18	Differential, $\pm V_{REF}$	4.096	–0.95/+1.5	±2.5	95.5	–113	20-lead LFCSP	29.95
AD7984	18	Serial	1333	1	2.5 to 5 (1.8 to 5 logic)	10.5	18	Differential, $\pm V_{REF}$	2.5 to 5 (external)	–1/+1.5	±2.25	98.5	–110.5	10-lead MSOP, 10-lead LFCSP	27.95
AD7643	18	Parallel/serial	1250	1	2.5 (2.5 to 5 logic)	52	18	Differential, ±2.5	2.5	–1/+2	±3	93	–116	48-lead LQFP, 48-lead LFCSP	29.95
AD7982	18	Serial	1000	1	2.5 to 5 (1.8 to 5 logic)	7	18	Differential, $\pm V_{REF}$	2.5 to 5 (external)	–0.85/+1.5	±2	95.5	–120	10-lead MSOP, 10-lead LFCSP	23.00
AD7674	18	Parallel/serial	800	1	5 (3, 5 logic)	114	18	Differential, ±5	5 (external)	–1/+1.75	±2.5	101	–115	48-lead LQFP, 48-lead LFCSP	27.95
AD7634	18	Parallel/serial	670	1	±15, (3, 5 logic)	175	18	Differential, ±5, ±10, ±20	5	–1/+2.5	±2.5	101	–112	48-lead LQFP, 48-lead LFCSP	31.45
AD7679	18	Parallel/serial	570	1	5 (3, 5 logic)	89	18	Differential, ±5	5 (external)	–1/+1.75	±2.5	101	–115	48-lead LQFP, 48-lead LFCSP	25.60
AD7690	18	Serial	400	1	5 (1.8 to 5 logic)	17	18	Differential, $\pm V_{REF}$	0.5 to 5 (external)	–1/+1.25	±1.5	101	–125	10-lead MSOP, 10-lead LFCSP	19.50
AD7631	18	Parallel/serial	250	1	±15 (3, 5 logic)	73	18	Differential, ±5, ±10, ±20	5	–1/+2.5	±2.5	101	–112	48-lead LQFP, 48-lead LFCSP	29.45
AD7691	18	Serial	250	1	2.7 to 5 (1.8 to 5 logic)	5	18	Differential, $\pm V_{REF}$	0.5 to 5 (external)	–1/+1.25	±1.5	101	–118	10-lead MSOP, 10-lead LFCSP	14.50
AD7678	18	Parallel/serial	100	1	5 (3, 5 logic)	18	18	Differential, ±5	5 (external)	–1/+1.75	±2.5	101	–115	48-lead LQFP, 48-lead LFCSP	19.20
AD7626 ***New***	16	Serial	10,000	1	2.5, 5	170	16	Differential, $\pm V_{REF}$	4.096	±0.5	±1.5	90	–105.5	32-lead LFCSP	34.95
AD7625 ***New***	16	Serial	6000	1	2.5, 5	150	16	Differential, $\pm V_{REF}$	4.096	±0.5	±1	92	–105.5	32-lead LFCSP	29.95
AD7621	16	Parallel/serial	3000	1	2.5 (2.5 to 5 logic)	65	16	Differential, ±2.5	2.5	–1/+2	±2	90	–102	48-lead LQFP, 48-lead LFCSP	29.95
AD7985 ***New***	16	Serial	2500	1	2.5, 5	17	16	0 to V_{REF}	4.096	±0.99	±1.5	88.5	–100	20-lead LFCSP	26.40
AD7622	16	Parallel/serial	2000	1	2.5 (2.5 to 5 logic)	65	16	Differential, ±2.5	2.5	–1/+1.25	±1.5	88	–100	48-lead LQFP, 48-lead LFCSP	26.95
AD7983	16	Serial	1333	1	2.5 to 5 (1.8 to 5 logic)	10.5	16	Differential, $\pm V_{REF}$	2.5 to 5 (external)	±0.9	±1.0	92	–115	10-lead MSOP, 10-lead LFCSP	24.95
AD7623	16	Parallel/serial	1333	1	2.5 (2.5 to 5 logic)	45	16	Differential, ±2.5	2.5	–1/+2	±2	90	–97	48-lead LQFP, 48-lead LFCSP	24.95
AD7980	16	Serial	1000	1	2.5 to 5 (1.8 to 5 logic)	7	16	Differential, $\pm V_{REF}$	2.5 to 5 (external)	–1/+2, ±0.9	±2.5, ±1.25	90	–114	10-lead MSOP, 10-lead LFCSP	11.95/15.95
AD7653	16	Parallel/serial	1000	1	5 (3, 5 logic)	128	15	2.5	2.5		±6	86	–98	48-lead LQFP, 48-lead LFCSP	11.50
AD7667	16	Parallel/serial	1000	1	5 (3, 5 logic)	130	16	2.5	2.5		±2.5	89	–104	48-lead LQFP, 48-lead LFCSP	23.50
AD7671	16	Parallel/serial	1000	1	5 (3, 5 logic)	112	16	2.5, 5, 10, ±2.5, ±5, ±10	2.5 (external)		±2.5	90	–100	48-lead LQFP, 48-lead LFCSP	21.95
AD7677	16	Parallel/serial	1000	1	5 (3, 5 logic)	115	16	Differential, ±2.5	2.5 (external)	±1	±1	94	–110	48-lead LQFP, 48-lead LFCSP	32.95
AD7612	16	Parallel/serial	750	1	±15 (3, 5 logic)	190	16	5, 10, ±5, ±10	5	–1/+1.5	±1.5	94	–107	48-lead LQFP, 48-lead LFCSP	29.45
AD7650	16	Parallel/serial	570	1	5 (3, 5 logic)	115	15	2.5	2.5 (external)		±6	86	–98	48-lead LQFP, 48-lead LFCSP	7.50
AD7664	16	Parallel/serial	570	1	5 (3, 5 logic)	115	16	2.5	2.5 (external)	–1/+1.5	±2.5	90	–100	48-lead LQFP, 48-lead LFCSP	18.65
AD7665	16	Parallel/serial	570	1	5 (3, 5 logic)	107	16	2.5, 5, 10, ±2.5, ±5, ±10	2.5 (external)		±2.5	90	–100	48-lead LQFP, 48-lead LFCSP	19.00
AD7654	16	Parallel/serial	500	4 (2 sim. samp.)	5 (3, 5 logic)	120	16	5	2.5 (external)		±3.5	90	–100	48-lead LQFP, 48-lead LFCSP	15.42
AD7655	16	Parallel/serial	500	4 (2 sim. samp.)	5 (3, 5 logic)	120	15	5	2.5 (external)		±6	86	–96	48-lead LQFP, 48-lead LFCSP	9.45
AD7652	16	Parallel/serial	500	1	5 (3, 5 logic)	65	15	2.5	2.5		±6	86	–98	48-lead LQFP, 48-lead LFCSP	9.45
AD7666	16	Parallel/serial	500	1	5 (3, 5 logic)	66	16	2.5	2.5		±2.5	89	–104	48-lead LQFP, 48-lead LFCSP	18.00
AD7676	16	Parallel/serial	500	1	5 (3, 5 logic)	67	16	Differential, ±2.5	2.5 (external)		±1	94	–110	48-lead LQFP, 48-lead LFCSP	24.95
AD7686	16	Serial	500	1	5 (1.8 to 5 logic)	15	16	V_{REF}	0.5 to 5 (external)	–1/+1.5	±2	92	–110	10-lead MSOP, 10-lead LFCSP	12.00
AD7688	16	Serial	500	1	5 (1.8 to 5 logic)	12.5	16	Differential, $\pm V_{REF}$	0.5 to 5 (external)	±1	±1.5	95	–118	10-lead MSOP, 10-lead LFCSP	14.95
AD7693	16	Serial	500	1	5 (1.8 to 5 logic)	18	16	Differential, $\pm V_{REF}$	0.5 to 5 (external)	±0.5	±0.5	96	–120	10-lead MSOP, 10-lead LFCSP	18.00
AD7699	16	Serial	500	8	5 (1.8 to 5 logic)	30	16	V_{REF}	2.5/4.1	–1/+1.5	±3	93	–105	20-lead LFCSP	7.99
AD7610	16	Parallel/serial	250	1	±15 (3, 5 logic)	70	16	5, 10, ±5, ±10	5	–1/+1.5	±1.5	94	–107	48-lead LQFP, 48-lead LFCSP	12.90
AD7656	16	Parallel/serial	250	6 (6 sim. samp.)	±12 (3, 5 logic)	140 max	15	±5, ±10	2.5		±3	86.5	–100	64-lead LQFP	14.25
AD7606 ***New***	16	Parallel/serial	200	8 sim. sampling	5 (2.3, 5 logic)	100	16	±5, ±10	2.5	±0.99	±2	88.5	–95	64-lead LQFP	16.70
AD7606-6 ***New***	16	Parallel/serial	200	6 sim. sampling	5 (2.3 , 5 logic)	90	16	±5, ±10	2.5	±0.99	±2	88.5	–95	64-lead LQFP	14.60
AD7606-4 ***New***	16	Parallel/serial	200	4 sim. sampling	5 (2.3,5 logic)	80	16	±5, ±10	2.5	±0.99	±2	88.5	–95	64-lead LQFP	11.50
AD7682	16	Serial	250	4	2.7 to 5 (1.8 to 5 logic)	15	16	V_{REF}	2.5/4.1	–1/+1.5	±3	93	–105	20-lead LFCSP	4.80
AD7689	16	Serial	250	8	2.7 to 5 (1.8 to 5 logic)	15	16	V_{REF}	2.5/4.1	–1/+1.5	±3	93	–105	20-lead LFCSP	6.99
AD7663	16	Parallel/serial	250	1	5 (3, 5 logic)	35	16	2.5, 5, 10, ±2.5, ±5, ±10	2.5 (external)		±3	90	–100	48-lead LQFP, 48-lead LFCSP	12.00
AD7685	16	Serial	250	1	2.7 to 5 (1.8 to 5 logic)	10	16	V_{REF}	0.5 to 5 (external)	–1/+1.5	±2	93	–110	10-lead MSOP, 10-lead LFCSP	8.00
AD7687	16	Serial	250	1	2.7 to 5 (1.8 to 5 logic)	12.5	16	Differential, $\pm V_{REF}$	0.5 to 5 (external)	±1	±1.5	95	–118	10-lead MSOP, 10-lead LFCSP	8.95
AD7694	16	Serial	250	1	2.7 to 5	1.5	16	V_{REF}	0.5 to 5 (external)		±4	92	–106	8-lead MSOP	6.00
AD974	16	Serial	200	4	5	120	15, 16	4, 5, ±10	2.5	–2/+3, –1/+1.5	±3, ±2	83, 85	–90/–96	28-lead SSOP	30.99
AD976A	16	Parallel	200	1	5	200	15, 16	±10	2.5	–2/+3, –1/+1.5, 2 typ	±3, ±2, 3 typ	83, 85	–90/–96	28-lead SSOP, 28-lead PDIP	30.59
AD977A	16	Serial	200	1	5	200	15, 16	4, 5, 10, ±3.3, ±5, ±10	2.5	–2/+3, –1/+1.5, 2 typ	±3, ±2, 3 typ	83, 85	–90/–96	28-lead SSOP	30.59
AD7651	16	Parallel/serial	100	1	5 (3, 5 logic)	16	15	2.5	2.5		±6	86	–98	48-lead LQFP, 48-lead LFCSP	7.45
AD7660	16	Parallel/serial	100	1	5 (3, 5 logic)	21	16	2.5	2.5 (external)	–1/+1.75	±3	90	–100	48-lead LQFP, 48-lead LFCSP	7.91
AD7661	16	Parallel/serial	100	1	5 (3, 5 logic)	15	16	2.5	2.5		±2.5	89	–104	48-lead LQFP, 48-lead LFCSP	8.95
AD7675	16	Parallel/serial	100	1	5 (3, 5 logic)	15	16	Differential, ±2.5	2.5 (external)		±1.5	94	–110	48-lead LQFP, 48-lead LFCSP	12.00
AD7680	16	Serial	100	1	3 to 5	9	15 @ 5 V, 16 @ 3 V	5	5 (external)	–0.9, +2.5 @ 3 V, ±2.5 @ 5 V	±4	85 @ 3 V, 84 @ 5 V	–95	6-lead SOT-23	6.00
AD7683	16	Serial	100	1	2.7 to 5	1.5	16	V_{REF}	0.5 to 5 (external)		±3	91	–106	8-lead MSOP	6.50
AD7684	16	Serial	100	1	2.7 to 5	1.5	16	Differential, $\pm V_{REF}$	0.5 to 5 (external)		±3	91	–106	8-lead MSOP	6.50

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Printed in the U.S.A. BR08696-0-6/11(A)

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