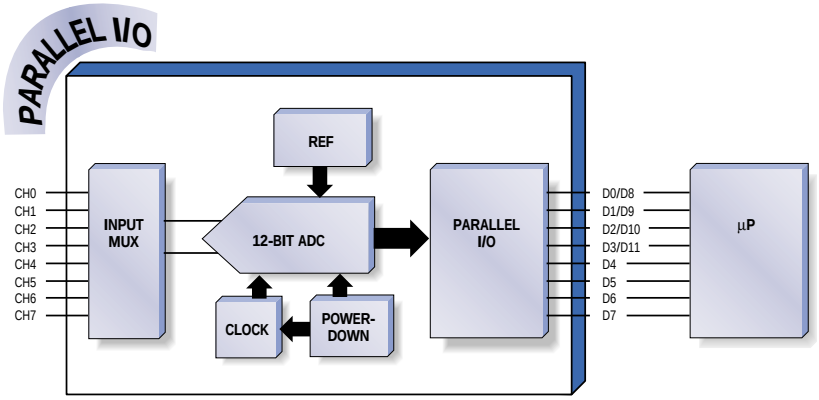
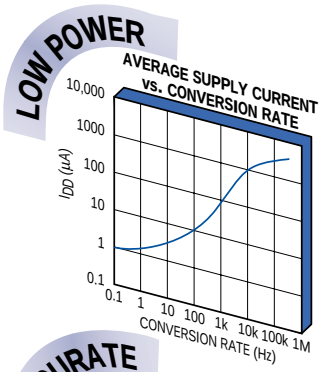
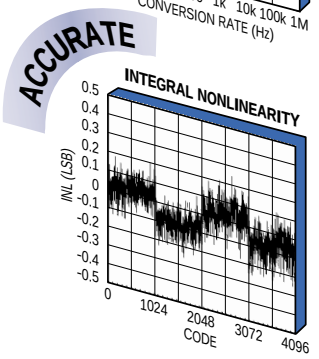
NEW

12-Bit ADCs Have Parallel I/O and 8 Channels

420ksps ADCs in 24-Pin QSOP are Ideal for Portable Instrumentation







- **Single-Supply Operation: +2.7V to +5.25V**
- **+1.8V to +5.25V Digital Interface**
- **Internal or External Reference**
- **Software-Selectable Automatic Power-Down**
- **Software-Configurable Inputs: Single-Ended or Psuedo-Differential**

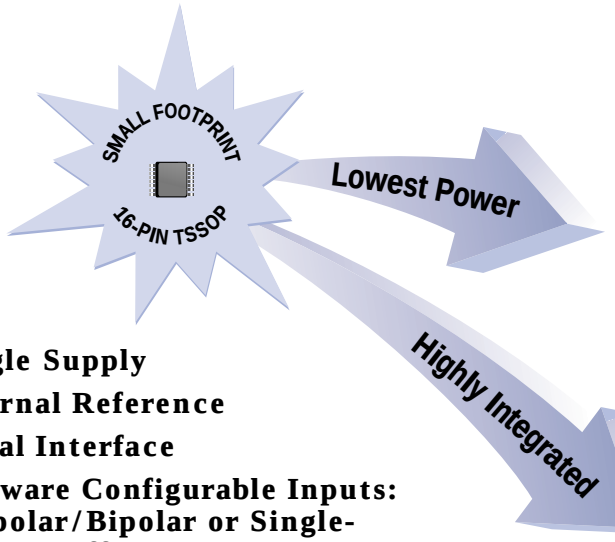
Choose Maxim for Your Low-Power, 12-Bit, Parallel-Output ADC

Interface	No. of Channels	Part	Supply Voltage (V)	Sample Rate (ksps max)	Reference (V)	Pin-Package
Byte Wide µP/8	4	MAX1292	+4.75 to +5.25	400	Internal +2.5 or External	24-Pin QSOP
		MAX1293	+2.7 to +3.6	250		
	8	MAX1290	+4.75 to +5.25	400	Internal +2.5 or External	28-Pin QSOP
		MAX1291	+2.7 to +3.6	250		
Full Wide µP/12	2	MAX1296	+4.75 to +5.25	420	Internal +2.5 or External	24-Pin QSOP
		MAX1297	+2.7 to +3.6	265		
	6	MAX1294	+4.75 to +5.25	420	Internal +2.5 or External	28-Pin QSOP
		MAX1295	+2.7 to +3.6	265		

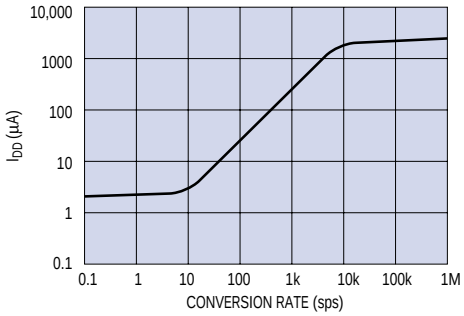
EV KIT AVAILABLE

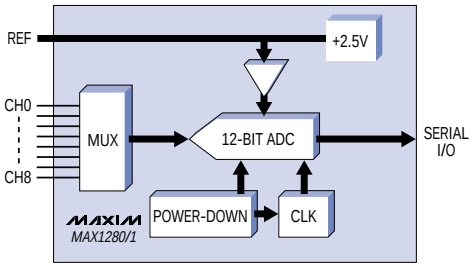
FUTURE PRODUCTS

World's Lowest Power, Serial I/O 4-/8-Channel, 400ksps, 12-Bit ADCs



- **Single Supply**
- **Internal Reference**
- **Serial Interface**
- **Software Configurable Inputs: Unipolar/Bipolar or Single-Ended/Differential**
- **Software and Hardware Shutdown**
- **Pin-Compatible 10-Bit Versions**





EV KIT AVAILABLE

Part	Resolution (Bits)	No. of Channels	Sample Rate (ksps max)	Interface	Supply (V)	Power (mW max)
MAX1280*	12	8	400	Serial	+4.5 to +5.5	20
MAX1281*	12	8	300	Serial	+2.7 to +3.6	10.5
MAX1282*	12	4	400	Serial	+4.5 to +5.5	20
MAX1283*	12	4	300	Serial	+2.7 to +3.6	10.5
MAX1080*	10	8	400	Serial	+4.5 to +5.5	20
MAX1081*	10	8	300	Serial	+2.7 to +3.6	10.5
MAX1082*	10	4	400	Serial	+4.5 to +5.5	20
MAX1083*	10	4	300	Serial	+2.7 to +3.6	10.5

*Future product.

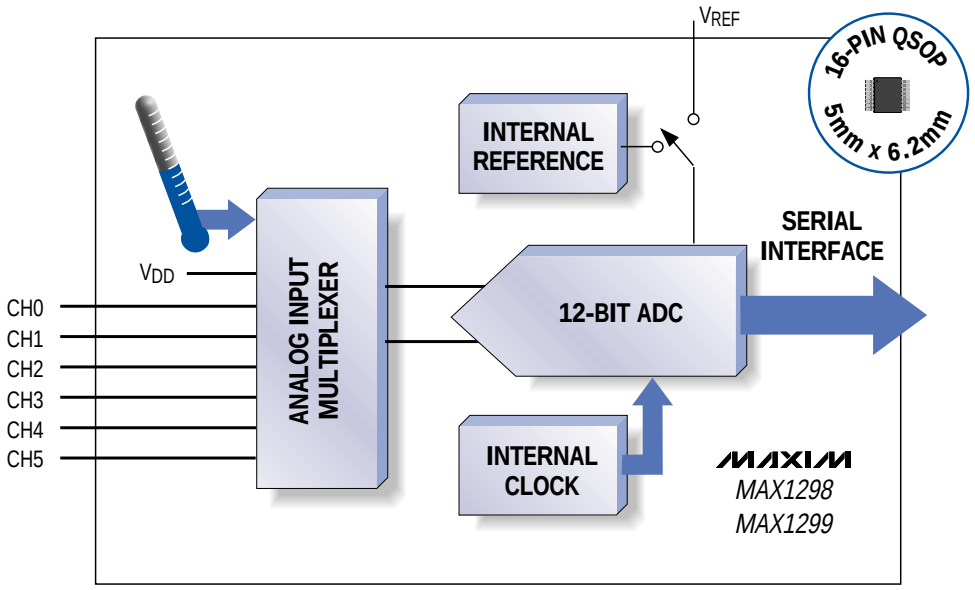
Maxim's High-Speed ADC and DAC Design Guide is Coming Soon!

MAXIM

FUTURE PRODUCTS

12-Bit ADC Includes ±2°C Accurate Temperature Sensor

Ideal for Hand-Held Instruments, Medical Equipment, and Industrial Process Control



- **Internal Temperature Sensor**
  - **±2°C Accuracy from 0°C to +70°C**
  - **±4°C Accuracy from -40°C to +85°C**
- **Internal/External Reference**
- **Single Supply: +2.7V to +5.5V**
- **Software-Configurable Inputs: 6 Single-Ended or 3 Differential**
- **Small Footprint: 16-Pin QSOP**

Part	Resolution (Bits)	Supply Voltage (V)	Supply Current (µA)	Reference (V)
MAX1298*	12	+4.5 to +5.5	250	Internal +4 or External
MAX1299*	12	+2.7 to +3.6	250	Internal +1.2 or External
MAX1098*	10	+4.5 to +5.5	250	Internal +4 or External
MAX1099*	10	+2.7 to +3.6	250	Internal +1.2 or External

*Future product—contact factory for availability.

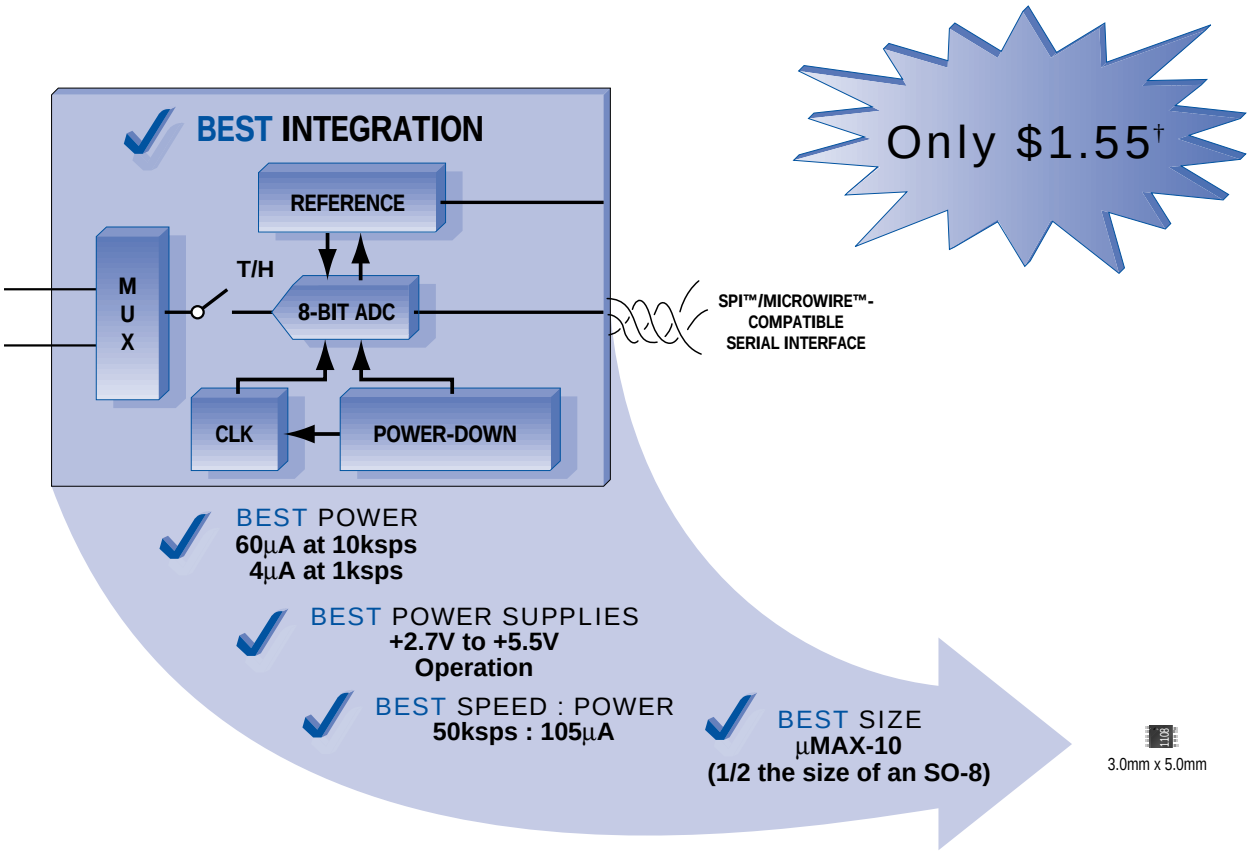
EV KIT AVAILABLE

MAXIM

8-Bit ADCs

Most Complete 8-Bit Serial ADCs

Mux, T/H, Clock, Power-Down, and Voltage Reference . . . All in a Small µMAX-10 Package!



EV KIT AVAILABLE

For system diagnostics, process control, environmental monitoring, and a host of other applications, plan your next design around the smallest, lowest power, most complete 8-bit ADCs available. Free EV boards are available to simplify µMAX evaluation.

Part	Supply Voltage (V)	No. of Channels	Power-Down Current (µA)	Pin-Package	Internal Reference Voltage (V)	Input Configurations	Price†† ($)
MAX1106	+2.7 to +5.5	1	0.5	10-µMAX	+2.048	Differential	1.55
MAX1108	+2.7 to +5.5	2	0.5	10-µMAX	+2.048	Single-Ended, Differential	1.55
MAX1111	+2.7 to +5.5	4	2	16-QSOP/DIP	+2.048	Single-Ended, Differential	1.69
MAX1110	+2.7 to +5.5	8	2	20-SSOP/DIP	+2.048	Single-Ended, Differential	1.86
MAX1107	+4.5 to +5.5	1	0.5	10-µMAX	+4.096	Differential	1.55
MAX1109	+4.5 to +5.5	2	0.5	10-µMAX	+4.096	Single-Ended, Differential	1.55
MAX1113	+4.5 to +5.5	4	2	16-QSOP/DIP	+4.096	Single-Ended, Differential	1.69
MAX1112	+4.5 to +5.5	8	2	20-SSOP/DIP	+4.096	Single-Ended, Differential	1.86

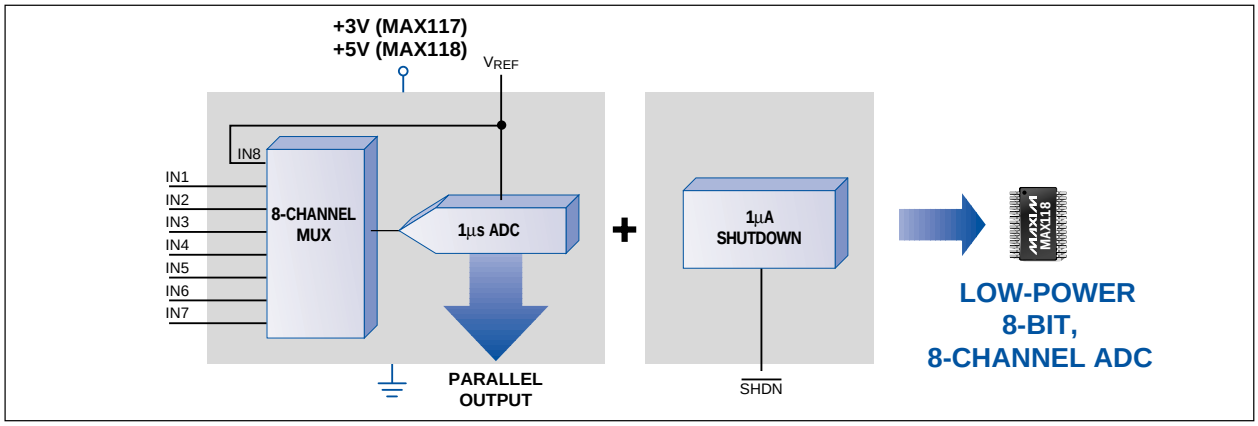
† MAX1106–MAX1109, 1000 pc. resale, FOB USA. †† 1000 pc. resale, FOB USA.

MAXIM

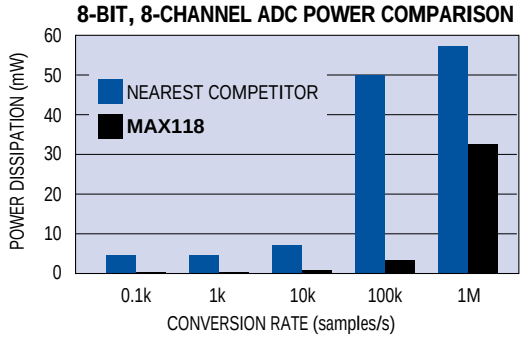
Low-Power 8-Bit, 8-Channel ADCs Have 1µA Shutdown

8-Bit ADCs

Single +3V or +5V Supply—Ideal for Portable Applications



The MAX118 is an 8-bit, 8-channel ADC designed for a wide range of data-acquisition/data-processing applications. It features fully tested DC and dynamic specifications and a total unadjusted error (TUE) of ±1LSB (max). The device operates from +5V and samples at up to 1.2Msps. At the maximum sampling rate, the MAX118 dissipates only 40mW. At slower sampling rates, the 1µA shutdown mode cuts supply current even more. The MAX117 is intended for +3V low-power applications. It samples at up to 400ksps and dissipates 7.5mW. The MAX117/MAX118 are available in 28-pin DIP and SSOP packages. For +5V applications requiring an internal reference, ask for the MAX154/MAX158.



The 8-bit, 8-channel, parallel-output MAX118 uses less power at all sampling rates.

- **±1LSB (max) TUE**
- **Samples to 1.2Msps**
- **1µA Shutdown Current**
- **8-Bit Parallel Interface**
- **+3V Version Available (MAX117)**

EV KIT AVAILABLE

Low-Power, 8-Bit, Parallel-Output ADCs

Part	Number of Channels	Supply Voltage (V)	Conversion Time (µs)	Shutdown Mode	Price* ($)
MAX152	1	+3	1.8	Yes	3.10
MAX153	1	+5	0.66	Yes	2.95
MAX113	4	+3	1.8	Yes	3.45
MAX114	4	+5	0.66	Yes	3.30
MAX117	8	+3	1.8	Yes	3.55
MAX118	8	+5	0.66	Yes	3.40

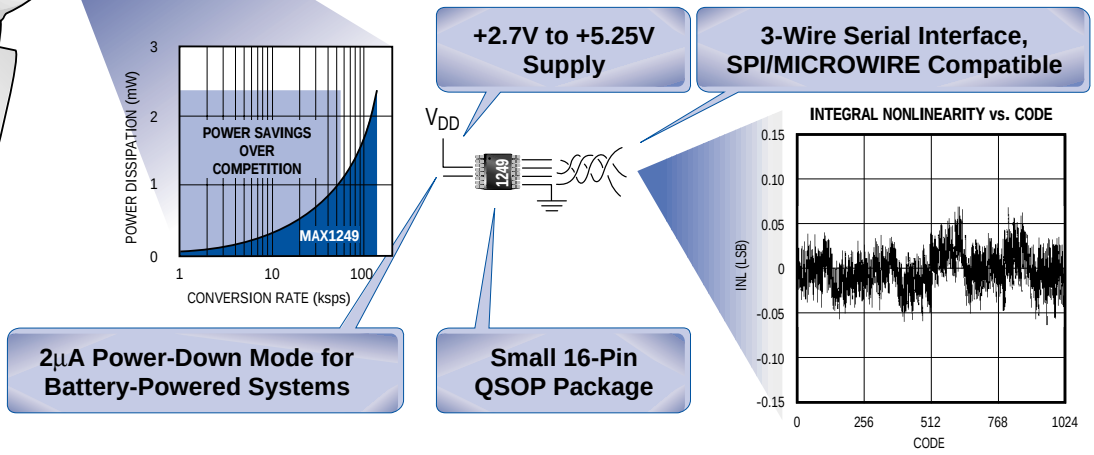
*1000 pc. resale, FOB USA.

8/10/12-Bit ADCs

The Most Complete Selection of +2.7V to +5.25V Serial ADCs for Portable Applications

100µA at 10ksps, 1µA Power-Down—Ideal for Portable Devices

The MAX1243 and the MAX1249/MAX148 reduce power requirements in 3V, 10-bit applications. They are the lowest power 3V ADCs available with a 1µA power-down mode. In addition, these 10-bit ADCs are the first to operate down to +2.7V. Other features include a 3-wire serial interface and space-saving packages. The 4-channel MAX1249 comes in a small 16-pin QSOP (about the same area as an 8-pin SO). For portable applications, look to the MAX1243 and the MAX1249/MAX148 for your low-power, low-voltage, and small-size solutions.



EV KIT AVAILABLE

Part	Resolution (Bits)	No. of Channels	Reference* (V)	Supply Voltage (V)	Sample Rate (kHz)	Pin-Package	Supply Current (mA)
MAX1106	8	1	Ext/Int, +2.048	+2.7 to +5.5	50	10-µMAX	0.25
MAX1108	8	2	Ext/Int, +2.048	+2.7 to +5.5	50	8-µMAX	0.25
MAX1111	8	4	Ext/Int, +2.048	+2.7 to +5.5	50	16-QSOP	0.25
MAX1110	8	8	Ext/Int, +2.048	+2.7 to +5.5	50	20-SSOP	0.25
MAX1243	10	1	Ext	+2.7 to +5.25	73	8-SO	0.9
MAX159	10	1	Ext	+2.7 to +5.5	110	8-µMAX	1
MAX157	10	2	Ext	+2.7 to +5.5	110	8-µMAX	1
MAX1249	10	4	Ext	+2.7 to +5.25	133	16-QSOP	0.9
MAX148	10	8	Ext	+2.7 to +5.25	133	20-SSOP	0.9
MAX1242	10	1	Int, +2.5	+2.7 to +3.6	73	8-SO	1.5
MAX1248	10	4	Int, +2.5	+2.7 to +5.25	133	16-QSOP	1.5
MAX149	10	8	Int, +2.5	+2.7 to +3.6	133	20-SSOP	1.5
MAX1241	12	1	Ext	+2.7 to +5.25	73	8-SO	0.9
MAX145	12	2	Ext	+2.7 to +5.5	110	8-µMAX	1
MAX144	12	1	Ext	+2.7 to +5.5	110	8-µMAX	1
MAX1247	12	4	Ext	+2.7 to +5.25	133	16-QSOP	0.9
MAX147	12	8	Ext	+2.7 to +5.25	133	20-SSOP	0.9
MAX1240	12	1	Int, +2.5	+2.7 to +3.6	73	8-SO	1.5
MAX1246	12	4	Int, +2.5	+2.7 to +3.6	133	16-QSOP	1.5
MAX146	12	8	Int, +2.5	+2.7 to +3.6	133	20-SSOP	1.5

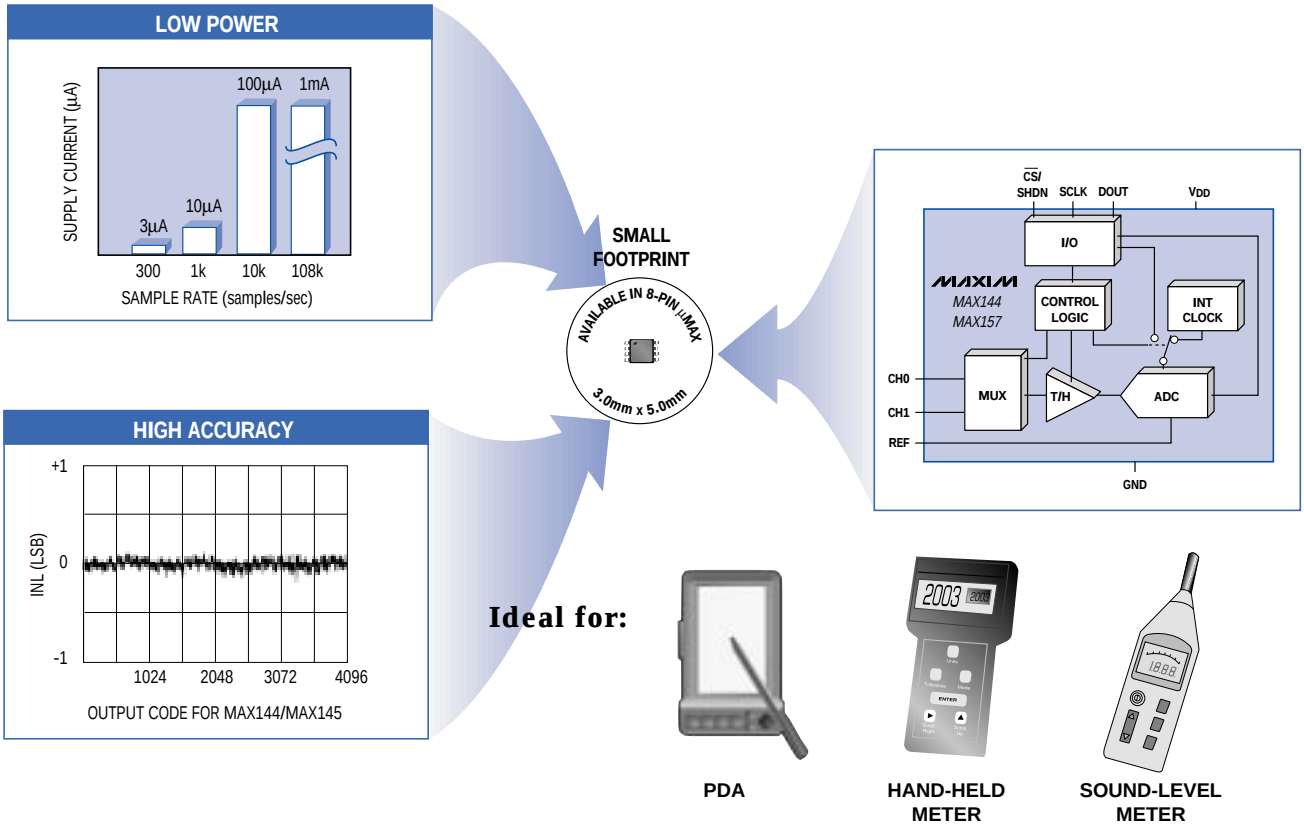
*Ext = External, Int = Internal.

MAXIM

Low-Power, 2-Channel, 12-Bit ADCs Fit in 8-Pin µMAX

10/12-Bit ADCs

Ideal for +3V and +5V Portable Applications



- **Single-Supply Operation: +2.7V to +5.25V**
- **SPI/QSPI™ and MICROWIRE-Compatible 3-Wire Serial Interface**
- **Samples to 108ksps**
- **Wide VREF Input Range: 1V to VDD**
- **Two Single-Ended Channels (MAX144/MAX157)**
- **One Pseudo-Differential Channel (MAX145/MAX159)**
- **Low Power:**
  - **0.9mA Operating (108ksps, +3.6V)**
  - **<10µA Operating (1ksps, +3.6V)**
  - **<0.2µA Power-Down Mode**

Part	No. of Channels	Resolution (Bits)	Reference	Supply Voltage (V)	Supply Current (mA max)	Sample Rate (ksps)	Pin-Package
MAX144	2	12	Ext	+2.7 to +5.25	1	108	8-µMAX
MAX157	2	10	Ext	+2.7 to +5.25	1	108	8-µMAX
MAX145	1	12	Ext	+2.7 to +5.25	1	108	8-µMAX
MAX159	1	10	Ext	+2.7 to +5.25	1	108	8-µMAX

QSPI is a trademark of Motorola, Inc.

MAXIM

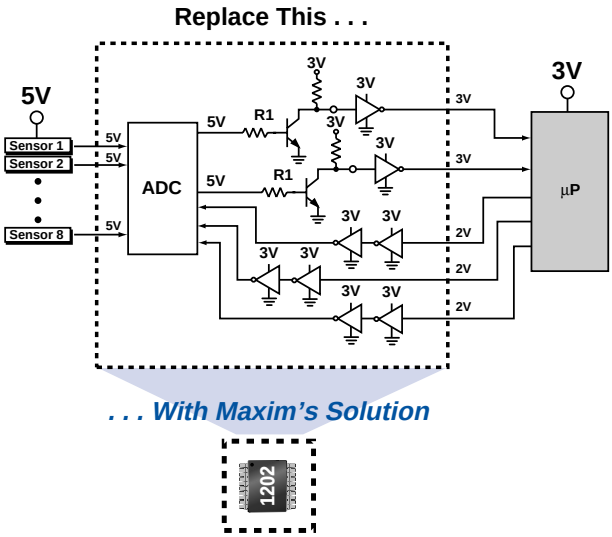
10/12-Bit ADCs

5V ADCs Connect Directly to 3V Systems

EV KIT AVAILABLE

12- and 10-Bit Devices Eliminate External Components, Reduce Board Space

Eliminate the glue logic required when connecting 5V systems to 3V digital microcontrollers by using Maxim's 8-channel serial ADCs. These low-power devices operate from +5V or ±5V supplies and have an adjustable digital output voltage level; simply apply the desired voltage (3V, 3.3V, 5V) to the VL input pin. Guaranteed 2V minimum logic-high input levels ensure compatibility with practically all 3V processors. The 12-bit MAX1202 and 10-bit MAX1204 feature an internal 4.096V reference. All devices can be configured with eight single-ended or four differential inputs. Small 20-pin SSOP or DIP packages minimize board space.



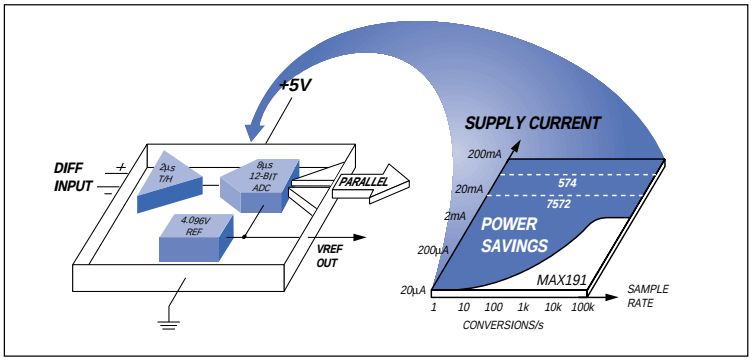
Part	Resolution (Bits)	Internal References	Directly Interfaces to 3V I/O	Unipolar/Bipolar Input Range	Maximum Sampling Rate (ksps)	Power-Down (µA)
MAX1202	12	Yes	Yes	Yes	133	2
MAX1203	12	No	Yes	Yes	133	2
MAX1204	10	Yes	Yes	Yes	133	2

5V, 12-Bit ADCs Run on 50µA

EV KIT AVAILABLE

8µs Parallel-Output ADC + T/H + Reference

Save milliamps of supply current by using the MAX191. Total supply current, including the voltage reference, ranges from a mere 50µA at 100 conversions per second to only 3mA at 100k conversions per second.



Part	Resolution (Bits)	Output Format	Input Channels	Reference	Sample Rate (ksps)	Power-Down (µA max)	Pins	Evaluation Kit
MAX191	12	Parallel	1	Internal	100	50	24	MAX191EVSYS
MAX186	12	Serial	8	Internal	133	10	20*	MAX186EVSYS
MAX187	12	Serial	1	Internal	75	10	8	MAX187EVSYS
MAX188	12	Serial	8	External	133	10	20*	MAX186EVSYS
MAX189	12	Serial	1	External	75	10	8	MAX187EVSYS
MAX192	10	Serial	8	Internal	133	10	20*	MAX186EVSYS

* Package options include DIP, SO, and SSOP.

MAXIM

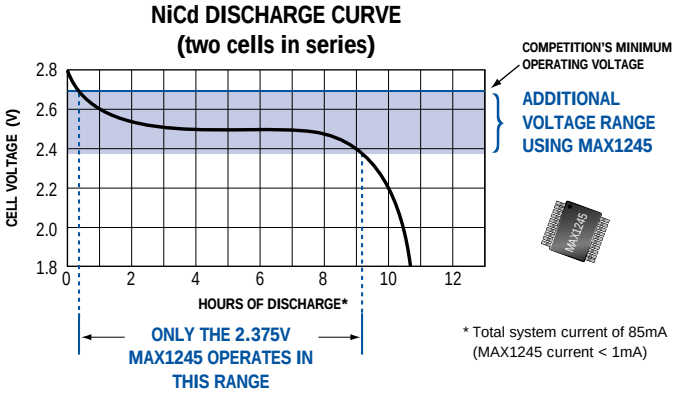
Lowest Voltage 12-Bit ADC

12-Bit ADCs

Guaranteed Operation Down to +2.375V

Operating at the lowest voltage saves power, since ICs typically dissipate less power as the voltage decreases. The 8-channel, serial 12-bit MAX1245 ADC has guaranteed performance down to +2.375V, making it the lowest voltage 12-bit ADC available.

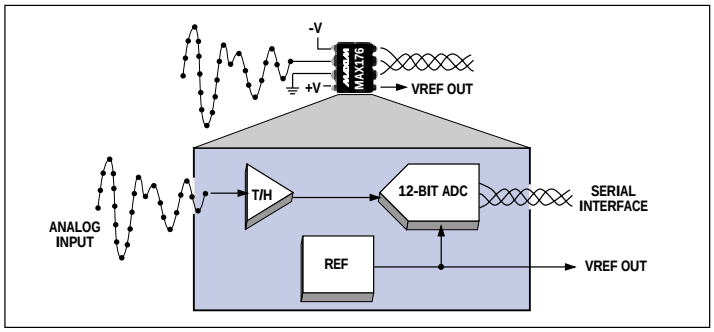
- **3-Wire Serial Interface Compatible with SPI/QSPI and MICROWIRE**
- **8 Single-Ended or 4 Differential Inputs**
- **1µA Power-Down Mode**
- **Small 20-Pin SSOP Package**
- **Samples to 100ksps**



Complete, Serial, 3.5µs, 12-Bit ADC in 8-Pin Package

Save space, ease signal routing, and simplify opto-isolation with the MAX176 ADC. It converts in 3.5µs and generates 250ksps, making it ideal for applications ranging from high-speed DSP to the digitizing of hundreds of multiplexed transducer signals. INL is ±1/2LSB max, THD is -80dB max, and SINAD is 70dB min.

Choose from 8-pin DIP or CERDIP and 16-pin SO packages.



The MAX176 includes a 12-bit ADC, T/H, voltage reference, and serial interface (compatible with SPI/QSPI and MICROWIRE) in an 8-pin DIP.

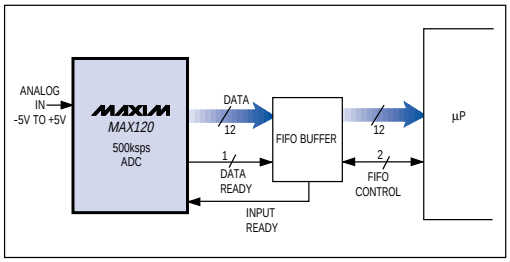
EV KIT AVAILABLE

Fast 12-Bit ADC Samples at 500ksps

- **25ppm/°C Voltage Ref On-Chip**
- **Space-Saving 24-Pin SSOP**

The MAX120/MAX122 12-bit sampling ADCs are ideal for digitizing and processing high-frequency analog signals. The MAX120 delivers 350ns acquisition and 1.6µs conversion times, resulting in a 500ksps sampling rate. For an even lower cost solution, the 2.6µs MAX122 delivers 333ksps. Both include an internal track/hold and 25ppm/°C voltage reference, while consuming only 210mW.

Maxim guarantees low noise (SINAD is 70dB min), low distortion (-77dB max THD for MAX120; -78dB max for MAX122), and integral nonlinearity (INL) accuracies of 1LSB (MAX120) or 3/4LSB (MAX122). Packages include 24-pin DIPs, SOs, and SSOPs in the commercial and extended-industrial temperature ranges.

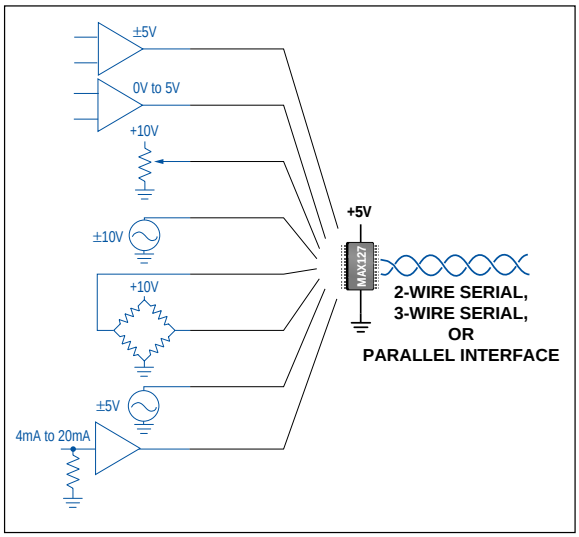


EV KIT AVAILABLE

12-Bit ADCs

2-Wire and SPI-Interfaced, 5V, 12-Bit, 8-Channel ADCs Have Software-Selectable Input Ranges

Eliminate PGAs and Level-Shifting Components



It's hard to beat Maxim's ADCs when it comes to saving precious board space! The MAX127/MAX128/MAX1270/MAX1271 are complete ADCs that incorporate a track/hold, a voltage reference, an 8-channel analog multiplexer, software-programmable input ranges, an on-chip clock, and two power-down modes—all in a small 28-pin SSOP package.

In addition, a built-in active clamping circuit on each analog input provides ±16.5V overvoltage fault protection for "off" channels, and limits fault currents to 1mA for the "on" channel. This means no diodes, no resistors, no zeners. The MAX127/MAX128 serial interface works in 2-wire mode to save additional board space, while the MAX1270/MAX1271 support QSPI.

The MAX127/MAX1270 have bipolar ±10V and ±5V, or unipolar +10V and +5V ranges. The MAX128/MAX1271 have bipolar $\pm V_{REF}$ and $\pm V_{REF}/2$, or unipolar $+V_{REF}$ and $+V_{REF}/2$ ranges.

EV KIT AVAILABLE

Part	No. of Channels	Input Ranges (V)	Data-Bus Interface	Throughput (ksps)
MAX127	8	±10, ±5, +10, +5	2-Wire	8
MAX128	8	$\pm V_{REF}$, $\pm V_{REF}/2$, $+V_{REF}$, $+V_{REF}/2$	2-Wire	8
MAX1270	8	±10, ±5, +10, +5	SPI/QSPI	100
MAX1271	8	$\pm V_{REF}$, $\pm V_{REF}/2$, $+V_{REF}$, $+V_{REF}/2$	SPI/QSPI	100
MAX197	8	±10, ±5, +10, +5	µP / 8 + 4	100
MAX199	8	±4, ±2, +4, +2	µP / 8 + 4	100
MAX196	6	±10, ±5, +10, +5	µP / 12	100
MAX198	6	±4, ±2, +4, +2	µP / 12	100

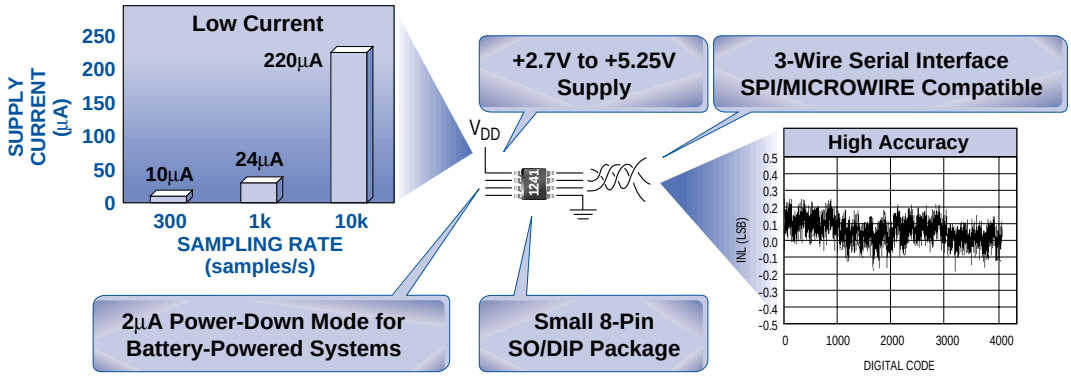
- **14 Bits of Effective Dynamic Range**
- **+5V Supply with Input Signals up to ±10V**
- **Small 28-Pin SSOP Package Saves Space**
- **100ksps Throughput**
- **Two Power-Down Modes**
- **5MHz Track/Hold**
- **±16.5V Overvoltage Protection**
- **Choice of Parallel, SPI, or 2-Wire Serial Interface**

Active clamping circuitry provides ±16.5V (15V ±10%) fault protection for "off" channels. For the selected channel, the active clamping circuit is disabled, but the level-shifting network at the input limits the input current to less than 1mA. This provides an added layer of protection when momentary overvoltages occur at the "on" channel input, and when a negative signal is applied at the input even though the device may be configured for unipolar mode.

MAXIM

+2.7V, 12-Bit Serial ADCs in SO-8 Draw Only 10µA

12-Bit ADCs



The MAX1241 (1 channel), MAX1247 (4 channels), and MAX147 (8 channels) are 12-bit ADCs designed for 3V, 3.3V, and 5V applications. Requiring only 0.9mA at 73ksps and 10µA at 300sps, the MAX1241/MAX1247/MAX147 help keep you well within your power budget in portable and battery-powered applications.

For applications requiring an on-chip voltage reference, use the pin- and software-compatible MAX1240/MAX1246 or the MAX146, which have 1, 4, and 8 channels, respectively.

Fast 16- & 14-Bit Serial ADCs Have 10µA Shutdown

14/16-Bit ADCs

Up to 85ksps Throughput with +5V or ±5V Input

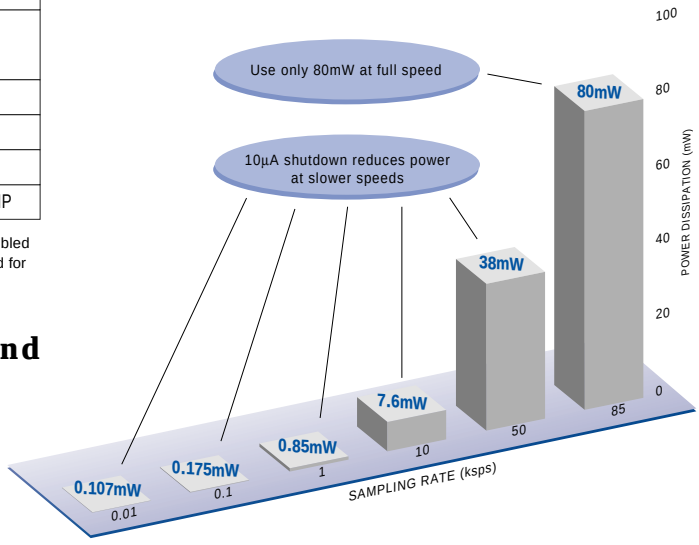
Ideal for portable and battery-powered applications, the MAX194/MAX195 combine an 85ksps sampling rate with very low (80mW max) power dissipation. A 10µA shutdown mode reduces power dissipation even further as the sampling rate decreases.

Features	MAX194	MAX195
Resolution (bits)	14	16
Pinout	16-pin packages, plug-in compatible for easy upgrade	
Sampling Rate (ksps)	85	85
Dynamic Range	16,384:1	65,556:1
SINAD (dB min)	82	87
Evaluation System*	MAX194EVC16-DIP	MAX195EVC16-DIP

* The Evaluation System provides a proven PC board layout and comes fully assembled to speed prototyping and design. A 68HC16 µP module and software are included for easy evaluation using your personal computer.

The MAX194/MAX195 Are Pin and Software Compatible for Design Flexibility and Easy Plug-In Upgrade Potential

USE SHUTDOWN TO OPTIMIZE POWER AND SPEED IN YOUR APPLICATION



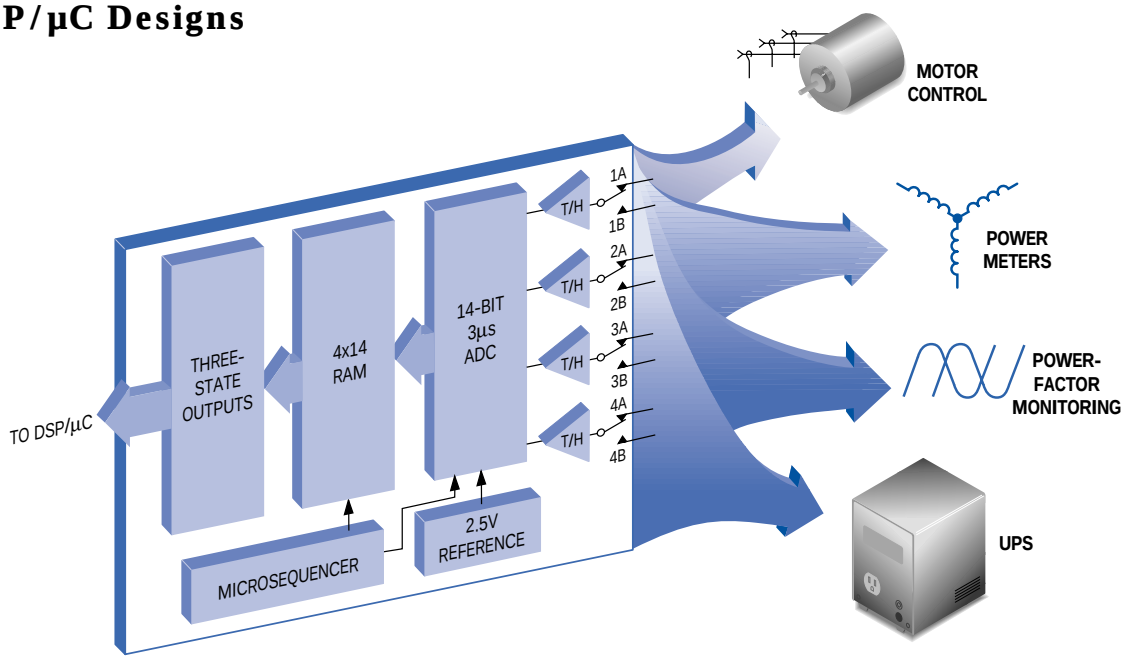
EV KIT AVAILABLE

MAXIM

14-Bit ADCs

First 14-Bit, 8-Channel, Simultaneous-Sampling ADCs

Digitize 8 Signals for Phase-Delay-Sensitive DSP/µC Designs



EV KIT AVAILABLE

- **14-Bit, 3µs ADC**
- **Analog Input Ranges**
  ±5V (MAX125)
  ±2.5V (MAX126)
- **4 Simultaneous T/Hs with 2:1 Multiplexed Inputs**
- **±16.5V Input Fault Protection**
- **Programmable On-Chip Microsequencer**
- **Internal 2.5V Voltage Reference**
- **High-Speed, 14-Bit Parallel Interface**
- **Small 36-Pin SSOP Footprint**

Evaluation Systems Speed Designs

The MAX125 and MAX126 evaluation systems provide a proven design and layout for fast, easy evaluation of the devices using your personal computer. The user-friendly software includes FFT capability for frequency spectrum analysis.

12-Bit, 8-Channel, Simultaneous-Sampling ADCs Also Available

For applications that don't require 14 bits of resolution, Maxim will soon be introducing two new simultaneous-sampling ADCs: the **MAX115*** and **MAX116***. These upcoming devices will be 12-bit, pin-compatible versions of the MAX125 and MAX126, respectively. Contact Maxim for more information.

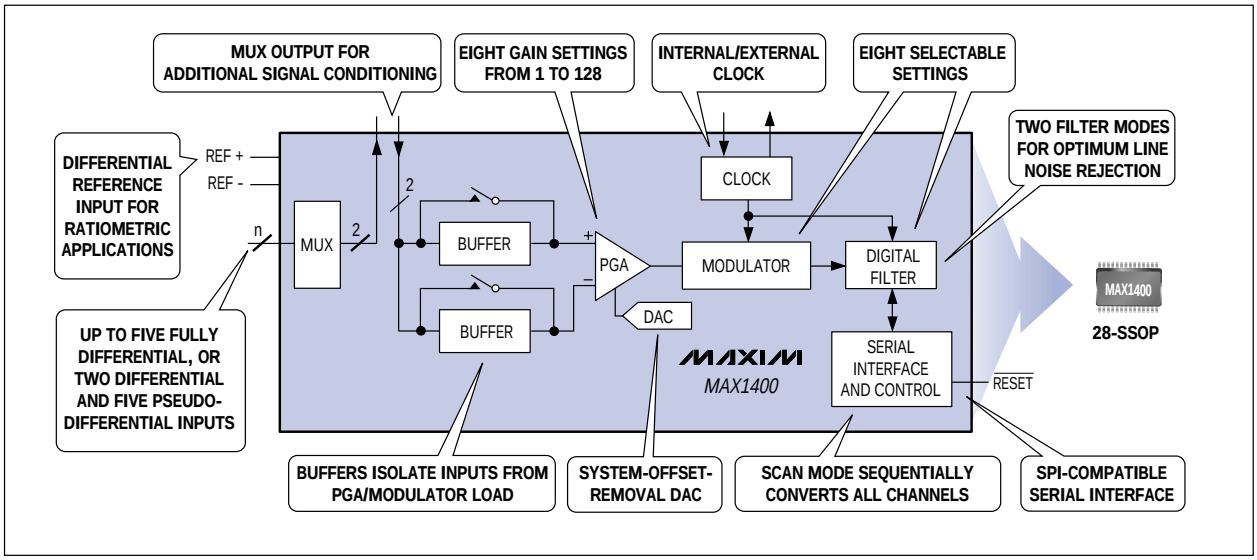
*Future product—contact factory for availability.

MAXIM

3V and 5V, 18-Bit Sigma-Delta ADCs Offer the Best INL Performance!

18-Bit ADCs

Ideal for Industrial and Instrumentation Applications!



- **±0.0015% max INL at 480sps**
- **High-Speed Modes (up to 4800sps)**
- **Automatic Channel Scanning and Continuous Data Output Mode**
- **Low Power: 250µA (Operating Mode) <10µA (Power-Down Mode)**
- **Converts Continuously or On Command**
- **Small 28-Pin SSOP Package**

Maxim's new MAX1400 18-bit sigma-delta ADC family provides the highest available accuracy at the lowest power. These devices achieve 16-bit accuracy (0.0015% INL) at 480sps. Coarse measurements can be performed 10 times more quickly at conversion rates as high as 4800sps while still maintaining "12-bit performance." The high accuracy these parts provide is ideal for applications requiring a wide dynamic range, such as industrial process control and pressure transducers.

On-chip signal conditioning allows direct connections to low-level signals. Power consumption is a low 1.5mW for the 3V devices in this family and only 2.9mW for the 5V devices. In shutdown, the total power dissipation drops below 50µW.

These devices save significant board space and design time by combining a switching network, a PGA, two buffers, a system-offset-correction DAC, an internal oscillator, an on-chip digital filter, a modulator, and a bidirectional serial interface in a 28-pin SSOP package.

Select the Ideal Sigma-Delta ADC for Your Next Design

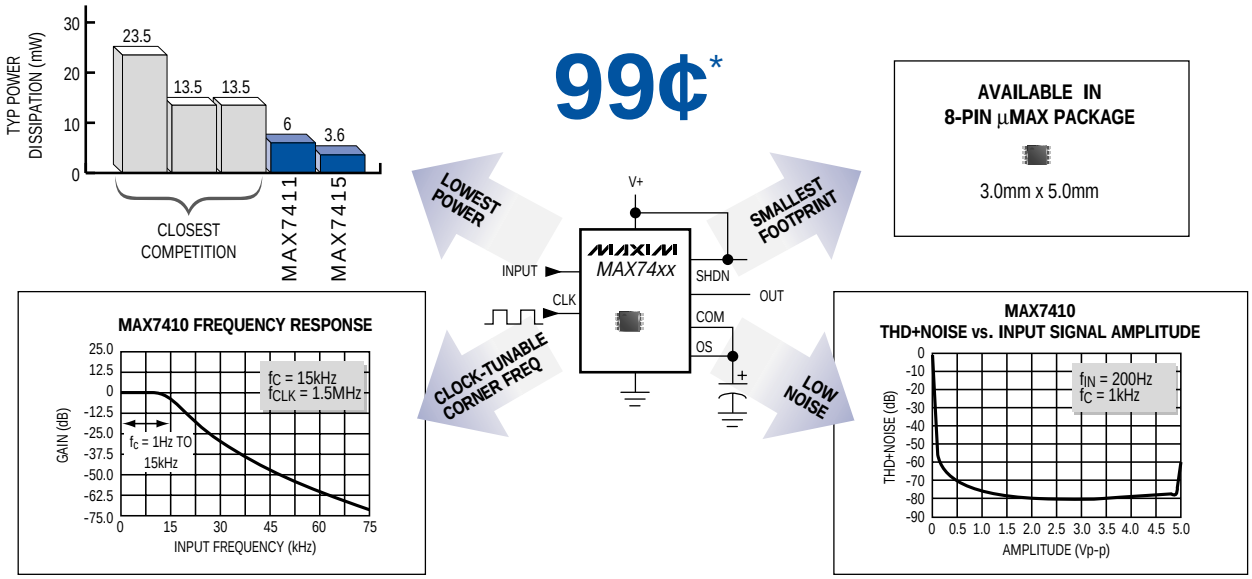
Part	Speed Performance (Hz)		Offset DAC	Maximum External Crystal (MHz)	Sensor Excitation Current Sources	Mux Output for External Signal Conditioning	Linearity (%)	V_{CC} (V)
	At 16 Bits	At 12 Bits						
MAX1400	480	4800	Yes	4.9152	No	Yes	0.0015	5
MAX1401	480	4800	Yes	4.9152	No	Yes	0.0015	3
MAX1402	480	4800	Yes	4.9152	Yes	No	0.0015	5
MAX1403	480	4800	Yes	4.9152	Yes	No	0.0015	3

EV KIT AVAILABLE

MAXIM

World's Lowest Power 5th-Order Lowpass Filters in µMAX

+3V and +5V Versions Consume Under 1.2mA



Ideal for low-power post-DAC filtering and anti-aliasing applications, Maxim's 5th-order, lowpass, switched-capacitor filters consume only 1.2mA (or 0.2µA in shutdown) and are available in 8-pin µMAX and DIP packages. Corner frequencies are clock tunable from 1Hz to 15kHz, with two clocking options available: self-clocking or external clocking.

Maxim's Family of Low-Power 5th-Order Filters

Part	Supply Voltage (V)	Filter Type	Filter Characteristics	Price* ($)
MAX7411	+5	Elliptic	Steepest rolloff, 37dB of stopband rejection	0.99
MAX7415	+3	Elliptic	Steepest rolloff, 37dB of stopband rejection	0.99
MAX7408	+5	Elliptic	Steep rolloff, 53dB of stopband rejection	0.99
MAX7412	+3	Elliptic	Steep rolloff, 53dB of stopband rejection	0.99
MAX7409	+5	Bessel	Linear phase response	0.99
MAX7413	+3	Bessel	Linear phase response	0.99
MAX7410	+5	Butterworth	Maximally flat passband and stopband response	0.99
MAX7414	+3	Butterworth	Maximally flat passband and stopband response	0.99

*100,000 pc., FOB USA.

For additional anti-aliasing filters, see Maxim's Filter Design Guide

MAXIM

Evaluation Kits Speed Prototyping and Design

Maxim's evaluation (EV) kits are developed to provide a fast, simple means of evaluating the features and performance of Maxim's A/D converters. They come fully assembled and provide a proven design and PC board layout. Most are available with a microcontroller module that includes memory, software, and an RS-232 link for easy interface and evaluation using your PC. The software is menu driven, and source code is provided to facilitate the development of software for your end product.

Part Number	EV Kit	Order Free Sample*	EV Kit Price† ($)
A/D CONVERTERS (<1Msps)			
MAX110/MAX111	MAX110EVKIT-DIP	MAX111CPE	55.00
	MAX110EVC32-DIP**		150.00
MAX115‡/MAX116‡	MAX115EVKIT-DIP	MAX116BCAX	††
MAX117/MAX118	MAX117EVKIT-DIP	MAX118CPI	48.00
MAX120/MAX122	MAX120EVKIT-DIP	MAX122BCNG	82.00
MAX121	MAX121EVKIT-DIP		85.00
MAX125	MAX125EVKIT		55.00
	MAX125EVB16		135.00
MAX126	MAX126EVKIT		55.00
	MAX126EVB16		135.00
MAX127/MAX128/	MAX1270EVKIT	MAX127/MAX128/MAX1271BCPI	95.00
MAX1270/MAX1271	MAX1270EVC16		195.00
MAX132	MAX132EVKIT-DIP**		95.00
MAX134	MAX134EVSYS1-DIP		†††
MAX146/MAX147	MAX147EVKIT-DIP	MAX146BCPP	55.00
	MAX147EVC32-DIP**		150.00
	MAX147EVC16-DIP***		150.00
MAX152/MAX153	MAX152EVKIT-DIP	MAX153CPP	65.00
MAX155	MAX155EVKIT-DIP**		95.00
MAX176	MAX176EVKIT-DIP		82.00
MAX180/MAX181	MAX180EVKIT-DIP**	MAX181CCPL	95.00
MAX186/MAX188	MAX186EVKIT-DIP	MAX188DCPP	55.00
	MAX186EVSYS-DIP**		150.00
MAX187/MAX189	MAX187EVKIT-DIP	MAX189BCPA	55.00
	MAX187EVC16-DIP***		150.00
MAX190	MAX190EVKIT-DIP**		95.00
MAX191	MAX191EVKIT-DIP		55.00
	MAX191EVSYS-DIP**		150.00

Part Number	EV Kit	Order Free Sample*	EV Kit Price† ($)
MAX194	MAX194EVKIT-DIP		55.00
	MAX194EVC16-DIP***		150.00
MAX195	MAX195EVKIT-DIP		55.00
	MAX195EVC16-DIP***		150.00
MAX197/MAX199	MAX197EVKIT-DIP	MAX199BCNI	55.00
	MAX197EVC16-DIP***		150.00
	MAX197EVC32-DIP**		150.00
MAX196/MAX198	MAX196EVKIT-DIP	MAX198BCNI	55.00
MAX1110/MAX1112	MAX1110EVKIT-DIP	MAX1112CPP	39.00
	MAX1110EVL11-DIP***		95.00
MAX1202/MAX1203	MAX1202EVKIT-DIP	MAX1203BCPP	39.00
	MAX1202EVL11-DIP***		95.00
MAX1240/MAX1241	MAX1241EVKIT-DIP	MAX1240BCPA	39.00
	MAX1241EVL11-DIP***		95.00
MAX1246	MAX1246EVKIT-QSOP		39.00
	MAX1246EVL11-QSOP***		95.00
MAX1247	MAX1247EVKIT-QSOP		39.00
	MAX1247EVL11-QSOP***		95.00
MAX1292/MAX1293	MAX1292EVKIT-QSOP	MAX1293BCEG	††
MAX1294/MAX1295	MAX1294EVKIT-QSOP	MAX1295BCEI	††
MAX1280	MAX1280EVKIT-TSSOP		††
MAX1282	MAX1282EVKIT-QSOP		††
MAX1284	MAX1284EVKIT-SOIC		††
MAX1400/MAX1402	MAX1402EVKIT	MAX1400CAI	95.00
	MAX1402EVC16		195.00
MAX1401/MAX1403	MAX1403EVKIT	MAX1401CAI	95.00
	MAX1403EVC16		195.00

* Some kits are used to evaluate more than one device. If the IC desired differs from the EV kit name, order the indicated EV kit and a free sample of the device you wish to evaluate.

** Includes 80C32 microcontroller and software for evaluation using your personal computer.

*** Includes 68HC16 or 68L11D microcontroller and software for evaluation using your personal computer.

† Prices provided are for design guidance and are FOB USA. International prices will differ due to local duties, taxes, and exchange rates.

†† Future EV kit—contact factory for pricing and availability.

††† Contact factory for pricing.

‡ Future product—contact factory for pricing and availability.

Integrating A/D Converters

Part Number	Resolution (digits)	Resolution (counts)	Output Type	Supply Voltage (V)	Supply Current (mA), max(typ)	Reference	EV Kit	Features	Price† 1000-up ($)
DUAL-SLOPE ADCs									
MAX130	3 1/2	±2000	LCD	+4.5 to +14	0.25(0.1)	Bandgap	–	Replacement for ICL7106	4.86
MAX131	3 1/2	±2000	LCD	+4.5 to +14	0.1(0.06)	Bandgap	–	Replacement for ICL7136	4.86
MAX136	3 1/2	±2000	LCD	+9	0.15(0.06)	Bandgap	–	Hold function, low power	4.32
MAX138	3 1/2	±2000	LCD	+2.25 to +7	0.8(0.2)	Bandgap	–	± inputs with single supply	4.40
ICL7106	3 1/2	±2000	LCD	+9	1.8(0.6)	Zener	–	For digital multimeters	4.32
ICL7116	3 1/2	±2000	LCD	+9	1.8(0.8)	Zener	–	ICL7106 with display hold	4.32
ICL7126	3 1/2	±2000	LCD	+9	0.1(0.06)	Zener	–	Use ICL7136 for new designs	4.32
ICL7136	3 1/2	±2000	LCD	+9	0.1(0.06)	Zener	–	Low power/noise ICL7106	4.32
MAX139	3 1/2	±2000	LED	+5	0.8(0.2)	Bandgap	–	± inputs with single supply	4.40
MAX140	3 1/2	±2000	LED	+5	0.8(0.2)	Bandgap	–	Low segment current (2mA)	4.40
ICL7107	3 1/2	±2000	LED	+9	1.8(0.6)	Zener	–	For digital panel meters	4.32
ICL7117	3 1/2	±2000	LED	±5	1.8(0.8)	Zener	–	ICL7107 with display hold	4.32
ICL7137	3 1/2	±2000	LED	±5	0.2(0.06)	Zener	–	Low power when LEDs off	4.32
MAX133	3 3/4	±40,000	µP	+9	0.2(0.09)	External	–	20 conv/s, ±10µV resolution	9.75
MAX134	3 3/4	±40,000	µP	±5	0.2(0.09)	External	–	20 conv/s, ±10µV resolution	9.75
ICL7129A	4 1/2	±20,000	Triplexed LCD	+9	1.4(1)	External	–	Lowest noise ±3µV	5.48
ICL7135	4 1/2	±20,000	Multiplexed BCD	±5	2(1)	External	–	For DMM, DPM, data loggers	5.48
MAX110	14 bits + sign	–	Serial	±5	0.95(0.55)	External	Yes	First-order sigma-delta ADC, no external components	4.80
MAX111	14 bits + sign	–	Serial	+5	1.2(0.64)	External	Yes	First-order sigma-delta ADC, no external components	4.80
ICL7109	12 bits + sign	±4096	8-/16-bit µP/UART	±5	1.5(0.7)	Zener	–	Three-state binary outputs	5.10
MAX135	15 bits + sign	±20,000	µP/8	±5	0.125(0.06)	External	–	Three-state two's complement outputs	8.00
MAX132	18 bits + sign	±260,000	Serial µP	±5	0.125(0.06)	External	Yes	Serial high-resolution ADC, <1mW	8.00

Standard A/D Converters

Part Number	Input Channels	Data-Bus Interface (Bits)	Supply Voltage (V)	Supply Current (mA)	Power-Down Current (µA)	Sample Rate (kHz max)	Conversion Time (µs max)	Voltage Reference* (V)	Input Ranges (V)	EV Kit	Features	Price† 1000-up ($)
8-BIT RESOLUTION												
ADC0820	1	µP/8	+5	5	–	400	1.38	E	+5	–	Complete ADC with T/H	3.73
MAX150	1	µP/8	+5	5	–	500	1.34	I/+2.5 or E	+5	–	Complete ADC with T/H and reference	5.85
✧MAX152	1	µP/8	+3 or ±3	1.5	1	400	1.8	E	$\pm V_{REF}$	Yes	3V ADC with 1µA power-down	3.10
✧MAX153	1	µP/8	+5 or ±5	8	1	1000	0.66	E	$\pm V_{REF}$	Yes	High-speed ADC with 1µA power-down	2.95
MAX165	1	µP/8	+5	3	–	200	5	I/+1.23 or E	+5	–	Low-cost sampling ADC with reference	3.95
MAX166	1	µP/8	+5	3	–	200	5	I/+1.23 or E	+5	–	Differential-input complete ADC	4.20
✧MAX1106	1	Serial	+2.7 to +5.5	0.25	2	50	16	I/+2.048 or E	$\pm V_{REF}/2$	–	2.7V, 1-ch, 250µA ADC with power-down	1.55
✧MAX1107	1	Serial	+5	0.25	2	50	16	I/+4.096 or E	$\pm V_{REF}/2$	–	2.7V, 1-ch, 250µA ADC with power-down	1.55
MX7575	1	µP/8	+5	3	–	200	5	E	+5	–	Plug-in replacement for AD7575	3.74
MX7576	1	µP/8	+5	3	–	100	10	E	+5	–	Plug-in replacement for AD7576	3.52
MX7820	1	µP/8	+5	5	–	500	1.34	E	+5	–	Plug-in replacement for AD7820	2.95
MX7821	1	µP/8	+5 or ±5	15	–	500	0.66	E	+5 or ±5	–	Complete ADC with T/H	5.80
✧MAX1108	2	Serial	+2.7 to +5.5	0.25	2	50	16	I/+2.048 or E	$+V_{REF}$	Yes	2.7V, 2-ch, 250µA ADC with power-down	1.51
✧MAX1109	2	Serial	+5	0.25	2	50	16	I/+4.096 or E	$+V_{REF}$	Yes	2.7V, 2-ch, 250µA ADC with power-down	1.51

✧ Low-Power A/D Converter

* E = external reference, I = internal reference

† Prices provided are for design guidance and are for the lowest grade, commercial temperature parts (FOB USA). International prices will differ due to local duties, taxes, and exchange rates. Prices are subject to change. Not all packages are offered in 1k increments, and some may require minimum order quantities.

Standard A/D Converters (continued)

Part Number	Input Channels	Data-Bus Interface (Bits)	Supply Voltage (V)	Supply Current (mA)	Power-Down Current (µA)	Sample Rate (kHz max)	Conversion Time (µs max)	Voltage Reference* (V)	Input Ranges (V)	EV Kit	Features	Price† 1000-up ($)
8-BIT RESOLUTION (continued)												
✧MAX113	4	µP/8	+3 to +3.6	1.5	1	400	1.8	E	+3 or ±1.5	–	3V, 8-bit, 4-ch ADC with power-down	3.45
✧MAX114	4	µP/8	+5	8	1	1000	0.66	E	+5 or ±2.5	–	5V, 8-bit, 4-ch ADC with power-down	3.30
MAX154	4	µP/8	+5	5	–	400	2	I/+2.5 or E	+5	–	4-channel ADC with T/H and reference	5.65
MAX156	4	µP/8	+5 or ±5	9	–	250	3.6	I/+2.5 or E	+2.5 or ±2.5	–	4-channel ADC with simultaneous T/Hs and reference	7.19
✧MAX1111	4	Serial	+2.7 to +5.5	0.25	2	50	16	I/+2.048 or E	$+V_{REF}$ or $\pm V_{REF}/2$	–	2.7V, 4-ch, 250µA ADC with power-down	1.69
✧MAX1113	4	Serial	+5	0.25	2	50	16	I/+4.096 or E	$+V_{REF}$ or $\pm V_{REF}/2$	–	5V, 4-ch, 250µA ADC with power-down	1.69
MX7824	4	µP/8	+5	5	–	400	2	E	+5	–	Plug-in replacement for AD7824	5.30
✧MAX117	8	µP/8	+3 to +3.6	1.5	1	400	1.8	E	+3 or ±1.5	Yes	3V, 8-bit, 8-ch ADC with power-down	3.55
✧MAX118	8	µP/8	+5	8	1	1000	0.66	E	+5 or ±2.5	Yes	5V, 8-bit, 8-ch ADC with power-down	3.40
MAX155	8	µP/8	+5 or ±5	18	–	250	3.6	I/+2.5 or E	+2.5 or ±2.5	Yes	8-channel ADC with simultaneous T/Hs	9.50
MAX158	8	µP/8	+5	5	–	400	2	I/+2.5 or E	+5	–	8-channel ADC with T/H and reference	6.00
MAX161	8	µP/8	+5	3	–	–	20	E	+10	–	8-channel ADC with RAM buffer	11.12
✧MAX1110	8	Serial	+2.7 to +5.5	0.25	2	50	16	I/+2.048 or E	$+V_{REF}$ or $\pm V_{REF}/2$	Yes	2.7V, 8-ch, 250µA ADC with power-down	1.86
✧MAX1112	8	Serial	+5	0.25	2	50	16	I/+4.096 or E	$+V_{REF}$ or $\pm V_{REF}/2$	Yes	5V, 8-ch, 250µA ADC with power-down	1.86
MX7581	8	µP/8	+5	3	–	–	66.6	E	+10	–	Plug-in replacement for AD7581	11.08
MX7828	8	µP/8	+5	5	–	400	2	E	+5	–	Plug-in replacement for AD7828	5.70
10-BIT RESOLUTION												
MAX151	1	µP/10	±5	30	–	300	2.5	I/+4.0 or E	+5	–	Sampling ADC with reference	7.95
✧MAX159	1	Serial	+2.7 to +5.25	1	0.01	108	5	E	$\pm V_{REF}/2$	–	2.7V, 1-ch, pseudo-differential, serial ADC with T/H	2.79
✧MAX1084	1	Serial	+5	2.5	1	400	2.5	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	–	5V, 10-bit serial ADC in 8-pin package	††
✧MAX1085	1	Serial	+2.7 to +5.25	2.5	1	250	3.3	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	–	2.7V, 10-bit serial ADC in 8-pin package	††
✧MAX1242	1	Serial	+2.7 to +3.6	1.5	1	73	7.5	I/+2.5	+2.5	–	MAX1243 with internal reference	2.75
✧MAX1243	1	Serial	+2.7 to +5.25	0.9	1	73	7.5	E	$+V_{REF}$	–	2.7V, 10-bit serial ADC in 8-pin package	2.45
✧MAX157	2	Serial	+2.7 to +5.25	1	0.01	108	5	E	0 to V_{REF}	–	2.7V, 2-ch, single-ended, serial ADC with T/H	2.79
✧MAX1082	4	Serial	+5	2.5	1	400	2.5	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	–	5V, 4-ch, serial ADC with reference in QSOP-16	††
✧MAX1083	4	Serial	+2.7 to +5.25	2.5	1	250	3.3	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	–	2.7V, 4-ch, serial ADC with reference in QSOP-16	††
✧MAX1092	4	µP/8	+2.7 to +5.25	2.5	1	250	3.3	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	–	2.7V, 4-ch, parallel with reference	††
✧MAX1248	4	Serial	+2.7 to +3.6	1.5	1	133	7.5	I/+2.5	+2.5 or ±1.25	–	MAX1249 with internal reference	3.15
✧MAX1249	4	Serial	+2.7 to +5.25	0.9	1	133	7.5	E	$+V_{REF}$ or $\pm V_{REF}/2$	–	2.7V, serial, 4-ch ADC, QSOP-16	3.05
✧MAX1098	6	Serial	+5	0.25	1	1	1000	1/+4 or E	$+V_{REF}$ or $\pm V_{REF}/2$	Yes	Internal temp sensor	††
✧MAX1099	6	Serial	+2.7 to +3.6	0.25	1	1	1000	1/+1.2 or E	$+V_{REF}$ or $\pm V_{REF}/2$	Yes	Internal temp sensor	††
✧MAX148	8	Serial	+2.7 to +5.25	0.9	1	133	7.5	E	$+V_{REF}$ or $\pm V_{REF}/2$	–	2.7V, 8-ch serial ADC	3.10
✧MAX149	8	Serial	+2.7 to +3.6	1.5	1	133	7.5	I/+2.5	+2.5 or ±1.25	–	MAX148 with internal reference	3.20
✧MAX192	8	Serial	+5	1.5	2	133	7.5	I/+4.096 or E	+5 or ±2.5	–	Low cost, small package	2.95**
✧MAX1080	8	Serial	+5	2.5	1	400	2.5	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	–	5V, 8-ch, serial ADC with reference	††
✧MAX1081	8	Serial	+2.7 to +5.25	2.5	1	250	3.3	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	–	2.7V, 8-ch, serial ADC with reference	††
✧MAX1090	8	µP/8	+2.7 to +5.25	2.5	1	250	3.3	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	–	2.7V, 8-ch, parallel ADC with reference	††
✧MAX1204	8	Serial	+5 or ±5	1.5	2	133	7.5	I/+4.096 or E	$+V_{REF}$ or $\pm V_{REF}/2$	–	5V, 10-bit, 8-ch ADC with 3V logic interface	4.25
10-/12-BIT RESOLUTION												
MAX177	1	µP/8 or 12	+5 & -12 to -15	6	–	100	8.33	I/-5.25	±2.5	–	MAX167 with 10-bit accuracy	7.96

✧ Low-Power A/D Converter

* E = external reference, I = internal reference

** 25,000 pc. factory-direct price, FOB USA.

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†† Future product—contact factory for availability. Specifications are preliminary.

Standard A/D Converters (continued)

Part Number	Input Channels	Data-Bus Interface (Bits)	Supply Voltage (V)	Supply Current (mA)	Power-Down Current (µA)	Sample Rate (kHz max)	Conversion Time (µs max)	Voltage Reference* (V)	Input Ranges (V)	EV Kit	Features	Price† 1000-up ($)
12-BIT RESOLUTION												
MAX120	1	µP/12	+5 & -12 to -15	14	–	500	1.6	I/-5.0	±5	Yes	High-speed, complete sampling ADC	10.80
MAX122	1	µP/12	+5 & -12 to -15	14	–	333	2.6	I/-5.0	±5	Yes	High-speed, complete sampling ADC	8.95
✧MAX145	1	Serial	+2.7 to +5.25	1	0.01	108	5	E	$\pm V_{REF}/2$	–	2.7V, 1-ch, pseudo-differential, serial ADC with T/H	4.24
MAX163	1	µP/8 or 12	+5 & -12 to -15	7	–	100	8.33	I/-5.0	+5	–	Complete sampling ADC with reference	14.40
MAX164	1	µP/8 or 12	+5 & -12 to -15	7	–	100	8.33	I/-5.0	±5	–	Complete sampling ADC with reference	14.40
MAX167	1	µP/8 or 12	+5 & -12 to -15	7	–	100	8.33	I/-5.0	±2.5	–	Complete sampling ADC with reference	14.40
MAX170	1	Serial	+5 & -12 to -15	6	–	125***	5	I/-5.25	+5	–	Serial ADC, 8-pin DIP with external T/H	11.96
MAX176	1	Serial	+5 & -12 to -15	8	–	250	3.5	I/-5.0	±5	Yes	Serial ADC, 8-pin miniDIP with T/H	9.85
MAX178	1	µP/8 or 12	±5 & +15	6	–	20	60	I/+5.0 or E	+5	–	1LSB TUE, has T/H and reference	15.24
✧MAX187	1	Serial	+5	1.5	2	75	8.5	I/+4.096	+4.096	Yes	7mW, 8-pin package	6.45
✧MAX189	1	Serial	+5	1	2	75	8.5	E	$+V_{REF}$	Yes	MAX187 without reference	5.95
✧MAX191	1	Serial and µP/8	+5 or ±5	2.5	2	100	7.5	I/+4.096 or E	$\pm V_{REF}$	Yes	15mW, 20µA power-down	9.60
MAX1176	1	Serial	+5 & -12 to -15	37	–	100	3.5	I/-5.0	±5	Yes	2500V isolated, serial ADC with T/H	††
MAX1187	1	Serial	+5	44	–	75	8.5	I/+4.096	+4.096	Yes	2500V isolated, single supply, serial ADC with T/H	††
✧MAX1240	1	Serial	+2.7 to +3.6	1.5	1	73	7.5	I/+2.5	+2.5	Yes	MAX1241 with internal reference	3.85
✧MAX1241	1	Serial	+2.7 to +5.25	0.9	1	73	7.5	E	$+V_{REF}$	Yes	2.7V, 12-bit serial ADC in 8-pin package	3.10
✧MAX1284	1	Serial	+5	2.5	1	400	2.5	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	Yes	5V, 12-bit serial ADC in 8-pin package	††
✧MAX1285	1	Serial	+2.7 to +5.25	2.5	1	250	3.3	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	Yes	2.7V, 12-bit serial ADC in 8-pin package	††
MX574A	1	µP/8 or 12	+5 & -12 to -15	6	–	–	25	E or I/+10	±5, ±10, +10 or +20	–	Plug-in replacement for AD574A	11.97
MX674A	1	µP/8 or 12	+5 & -12 to -15	6	–	–	15	E or I/+10	±5, ±10, +10 or +20	–	Plug-in replacement for AD674A	23.44
✧MAX144	2	Serial	+2.7 to +5.25	1	0.01	108	5	E	0 to V_{REF}	–	2.7V, 2-ch, single-ended, serial ADC with T/H	4.24
✧MAX1296	2	µP/12	+5	2.5	1	400	2.5	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	–	5V, 2-ch, parallel ADC with 1.8V to 5V logic and reference	5.60
✧MAX1297	2	µP/12	+2.7 to +5.25	2.5	1	250	3.3	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	–	2.7V, 2-ch, parallel ADC with 1.8V to 3V logic and reference	5.60
MAX182	4	µP/8 or 12	±5 & +15	6	–	20	60	I/+5.0 or E	+5	–	1LSB TUE, has T/H and reference	17.55
✧MAX1246	4	Serial	+2.7 to +3.6	1.5	1	133	7.5	I/+2.5	+2.5 or ±1.25	Yes	MAX1247 with internal reference	4.60
✧MAX1247	4	Serial	+2.7 to +5.25	0.9	1	133	7.5	E	$+V_{REF}$ or $\pm V_{REF}/2$	Yes	2.7V, serial, 4-ch ADC, QSOP-16	4.45
✧MAX1282	4	Serial	+5	2.5	1	400	2.5	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	Yes	5V, 4-ch, serial ADC with reference in QSOP-16	††
✧MAX1283	4	Serial	+2.7 to +5.25	2.5	1	250	3.3	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	Yes	2.7V, 4-ch, serial ADC with reference in QSOP-16	††
✧MAX1292	4	µP/8	+5	2.5	1	400	2.5	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	–	5V, 4-ch, parallel ADC with 1.8V to 5V logic and reference	5.74
✧MAX1293	4	µP/8	+2.7 to +5.25	2.5	1	250	3.3	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	–	2.7V, 4-ch, parallel ADC with reference	5.74
MX7582	4	µP/8 or 12	±5 & +15	5	–	–	100	E	+5	–	Plug-in replacement for AD7582	19.50
MAX181	6	µP/8 or 12	+5 & -12 to -15	7	–	100	8.33	I/-5.0 or E	+5 or ±2.5	Yes	Data-acquisition system	12.75
MAX196	6	µP/12	+5	6	60	100	6	I/+4.096 or E	±10, +10, ±5, +5	Yes	Multirange, fault protected	9.90
MAX198	6	µP/12	+5	6	60	100	6	I/+4.096 or E	±4, +4, ±2, +2	Yes	Multirange, fault protected	9.90
✧MAX1294	6	µP/12	+5	2.5	1	400	2.5	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	Yes	5V, 6-ch, parallel ADC with reference	5.87
✧MAX1295	6	µP/12	+2.7 to +5.25	2.5	1	250	3.3	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	Yes	2.7V, 6-ch, parallel ADC with reference	5.87
✧MAX1298	6	Serial	+5	0.25	1	1	1000	I/+4 or E	$+V_{REF}$ or $\pm V_{REF}/2$	Yes	Internal temp sensor	††
✧MAX1299	6	Serial	+2.7 to +3.6	0.25	1	1	1000	I/+1.2 or E	$+V_{REF}$ or $\pm V_{REF}/2$	Yes	Internal temp sensor	††
MAX115	8	µP/14	±5	17	3	250	3	I/+2.5 or E	±5	Yes	2x4 channels, four simultaneous T/Hs	††
MAX116	8	µP/14	±5	17	3	250	3	I/+2.5 or E	±2.5	Yes	2x4 channels, four simultaneous T/Hs	††
MAX127	8	Serial	+5	5.5	60	8	6	I/+4.096 or E	±10, +10, ±5, +5	Yes	Multirange, fault protected, 2-wire interface	9.25

✧ Low-Power A/D Converter

* E = external reference, I = internal reference

*** With external track/hold.

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Standard A/D Converters (continued)

Part Number	Input Channels	Data-Bus Interface (Bits)	Supply Voltage (V)	Supply Current (mA)	Power-Down Current (µA)	Sample Rate (kHz max)	Conversion Time (µs max)	Voltage Reference* (V)	Input Ranges (V)	EV Kit	Features	Price† 1000-up ($)
12-BIT RESOLUTION (continued)												
MAX128	8	Serial	+5	5.5	60	8	6	I/+4.096 or E	±4, +4, ±2, +2	Yes	Multirange, fault protected, 2-wire interface	9.25
✧MAX146	8	Serial	+2.7 to +3.6	1.5	1	133	7.5	I/+2.5	+2.5 or ±1.25	Yes	2.7V, 8-ch serial ADC with reference	6.25
✧MAX147	8	Serial	+2.7 to +5.25	0.9	1	133	7.5	E	$+V_{REF}$ or $\pm V_{REF}/2$	Yes	2.7V, 8-ch serial ADC	5.95
MAX180	8	µP/8 or 12	+5 & -12 to -15	7	–	100	8.33	I/-5.0 or E	+5 or ±2.5	Yes	Data-acquisition system	12.75
✧MAX186	8	Serial	+5 or ±5	1.5	2	133	7.5	I/+4.096	+5 or ±2.5	Yes	7mW, 10µA power-down	6.75
✧MAX188	8	Serial	+5 or ±5	1	2	133	7.5	E	+5 or ±2.5	Yes	MAX186 without reference	6.25
MAX197	8	µP/8	+5	6	60	100	6	I/+4.096 or E	±10, +10, ±5, +5	Yes	Multirange, fault protected	9.90
MAX199	8	µP/8	+5	6	60	100	6	I/+4.096 or E	±4, +4, ±2, +2	Yes	Multirange, fault protected	9.90
✧MAX1202	8	Serial	+5 or ±5	1.5	2	133	7.5	I/+4.096	$+V_{REF}$ or $\pm V_{REF}$	Yes	5V, 12-bit, 8-ch ADC with 3V logic interface	6.50
✧MAX1203	8	Serial	+5 or ±5	0.9	1	133	7.5	E	$+V_{REF}$ or $\pm V_{REF}$	Yes	MAX1202 without reference	5.45
✧MAX1245	8	Serial	+2.375 to +3.6	0.8	1	100	7.5	E	$+V_{REF}$ or $\pm V_{REF}/2$	–	2.375V, 12-bit, 8-ch serial ADC	6.25
MAX1270	8	Serial	+5	5.5	60	100	6	I/+4.096 or E	±10, +10, ±5, +5	Yes	Multirange, fault protected, 3-wire serial	8.95
MAX1271	8	Serial	+5	5.5	60	100	6	I/+4.096 or E	±4, +4, ±2, +2	Yes	Multirange, fault protected, 3-wire serial	8.95
✧MAX1280	8	Serial	+5	2.5	1	400	2.5	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	Yes	5V, 8-ch, serial ADC with reference	††
✧MAX1281	8	Serial	+2.7 to +5.25	2.5	1	250	3.3	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	Yes	2.7V, 8-ch, serial ADC with reference	††
✧MAX1290	8	µP/8	+5	2.5	1	400	2.5	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	Yes	5V, 8-ch, parallel ADC with 1.8V to 5V logic and reference	5.99
✧MAX1291	8	µP/8	+2.7 to +5.25	2.5	1	250	3.3	I/+2.5 or E	$+V_{REF}$ or $\pm V_{REF}/2$	Yes	2.7V, 8-ch, parallel ADC with 1.8V to 3V logic and reference	5.99
14-BIT RESOLUTION												
MAX121	1	Serial	+5 & -12 to -15	14	–	308	2.9	I/-5.0	±5	Yes	High-speed, complete sampling ADC with DSP interface, 16-pin package	12.00
✧MAX135	1	µP/8	±5	60µA	1	100Hz	10ms	E	±300mV	–	High-resolution ADC, <1mW	8.00
✧MAX194	1	Serial	±5	5.5	2	85	9.4	E	$+V_{REF}$ or $\pm V_{REF}$	Yes	14-bit, high-speed serial ADC	14.00
✧MAX110	2	Serial	±5	550µA	1	100Hz	20ms	E	±3	Yes	Shutdown mode, dual supplies	4.80
✧MAX111	2	Serial	+5	640µA	1	100Hz	20ms	E	±2	Yes	Shutdown mode, single supply	4.80
MAX125	8	µP/14	±5	17	3	250	3	I/+2.5 or E	±5	Yes	2x4 channels, four simultaneous T/Hs	13.42
MAX126	8	µP/14	±5	17	3	250	3	I/+2.5 or E	±2.5	Yes	2x4 channels, four simultaneous T/Hs	13.42
16-BIT RESOLUTION												
✧MAX195	1	Serial	±5	5.5	2	85	10	E	$+V_{REF}$ or $\pm V_{REF}$	Yes	High-speed, serial 16-pin ADC	22.50
✧MAX132	1	Serial	±5	60µA	1	100Hz	10ms	E	±512mV	Yes	Serial high-resolution ADC, <1mW	8.00
✧MAX1400	5 diff	Serial	+5	0.6	10	4.8	–	E	$+V_{REF}$/gain or $\pm V_{REF}$/gain	Yes	Sigma-delta, 3-bit PGA	8.95
✧MAX1401	5 diff	Serial	+2.7 to +3.6	0.5	10	4.8	–	E	$+V_{REF}$/gain or $\pm V_{REF}$/gain	Yes	Sigma-delta, 3-bit PGA	8.95
✧MAX1402	5 diff	Serial	+5	0.6	10	4.8	–	E	$+V_{REF}$/gain or $\pm V_{REF}$/gain	Yes	Sigma-delta, 3-bit PGA, current source	8.95
✧MAX1403	5 diff	Serial	+2.7 to +3.6	0.5	10	4.8	–	E	$+V_{REF}$/gain or $\pm V_{REF}$/gain	Yes	Sigma-delta, 3-bit PGA, current source	8.95

CCD Digitizer

Part Number	Resolution (Bits)	Sample Rate (kHz max)	Conversion Time (µs max)	Input Channels	Voltage Reference* (V)	Data-Bus Interface (Bits)	Supply Voltage (V)	Input Range (V)	Features	Price† 1000-up ($)
MAX1101	8	1000	1.5	1	E	Serial	+5	$\pm V_{REF}$	CCD digitizer with 6-bit PGA	2.95‡

✧ Low-Power A/D Converter

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‡ 100,000 pc. factory-direct price, FOB USA.

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