



12-Bit, I²C SAR ADC Measures Eight Inputs & Dissipates Only 1.5mW

MILPITAS, CA – February 21, 2008 – Linear Technology Corporation introduces the LTC2309, a 12-bit analog-to-digital converter (ADC) that communicates via an I²C-compatible 2-wire interface with 14ksps throughput rate. This flexible ADC features an 8-channel integrated multiplexer to measure eight single-ended input channels, four differential channels, or combinations of both. The input channels are software selectable for unipolar or bipolar ranges. Operating from a single 5V supply, the LTC2309 draws just 1.5mW at a 1ksps throughput rate and only 35uW in shutdown mode. Packaged in a tiny 4mm x 4mm QFN-24 with internal reference, the LTC2309 is a great fit for portable instrumentation and space-constrained designs using I²C.

The LTC2309 achieves excellent DC specifications when measuring unipolar or bipolar input signals, including $\pm 1\text{LSB}$ INL and DNL, $\pm 6\text{LSB}$ (max) zero-scale error and $\pm 6\text{LSB}$ (max) full-scale error. The LTC2309 also excels when digitizing AC input signals, measuring 73dB SINAD and -88dB THD at 1kHz.

The LTC2309 allows I²C data transfers up to 100kHz in standard mode and 400kHz in fast mode. The ADC includes two address select pins that may be tied low, high or left floating, thus providing nine unique I²C addresses. This is ideal for applications that require measurements of more than eight input channels, as designers can easily communicate with multiple LTC2309 devices.


The LTC2309 is available today in both commercial and industrial temperature grades. Pricing begins at \$2.95 for 1,000-piece quantities.

Photo Caption: 12-Bit, I²C, 8-Channel SAR ADC**Summary of Features: LTC2309**

- 12-Bit Resolution
- I²C-Compatible, 2-Wire Interface
- Fast 1.3 μ s Conversion Time
- 14ksps Throughput Rate
- Low Power Dissipation:
 - 1.5mW at 1ksps
 - 35 μ W Sleep Mode
- 8-Channel Multiplexer (8 Single-Ended Channels, 4 Differential Channels)
- 5V Single Supply Operation
- Tiny QFN-24 (4mm x 4mm) Package
- Internal Reference, Internal Conversion Clock
- 73dB SINAD at 1kHz
- Unipolar or Bipolar Input Ranges
- Two 3-State Address Select Pins Allow Nine Unique Addresses

About Linear Technology

Linear Technology Corporation, a manufacturer of high performance linear integrated circuits, was founded in 1981, became a public company in 1986 and joined the S&P 500 index of major public companies in 2000. Linear Technology products include high performance amplifiers, comparators, voltage references, monolithic filters, linear regulators, DC-DC converters, battery chargers, data converters, communications interface circuits, RF signal conditioning circuits, uModule™ products, and many other analog functions. Applications for Linear Technology's high performance circuits include telecommunications, cellular telephones, networking products such as optical switches, notebook and desktop computers, computer peripherals, video/multimedia, industrial instrumentation, security monitoring devices, high-end consumer products such as digital cameras and MP3 players, complex medical devices, automotive electronics, factory automation, process control, and military and space systems. For more information, visit www.linear.com.

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