



24-Bit, 16-Channel Delta-Sigma ADC with Easy Drive Input Current Cancellation Simplifies Front-End Signal Conditioning

MILPITAS, CA – September 5, 2006 – Linear Technology Corporation introduces the LTC2498 16-channel delta-sigma analog-to-digital converter (ADC), featuring a front-end design that can directly digitize a wide range of sensors. The LTC2498's Easy Drive™ design results in zero average differential input current, allowing measurements of high impedance input sources without the use of an internal buffer. This patented sampling scheme simplifies the design of front-end signal conditioning circuits and allows the ADC to be driven directly from bridges, RTDs, thermocouples and other high impedance sensors. Rail-to-rail input signals can be directly digitized while maintaining excellent DC accuracy (2ppm INL).

The LTC2498 includes a high accuracy internal temperature sensor that offers 1/30°C resolution and 2°C absolute accuracy. The ADC converts the output of the temperature sensor or the input multiplexer, which can be configured for 16 single-ended channels, eight differential channels, or combinations of both. After a new channel is selected, the LTC2498's No Latency Delta-Sigma™ digital filter settles in a single cycle. The LTC2498 communicates via a 4-wire SPI-compatible serial interface and performs conversions at rates up to 7.5Hz or 15Hz while using the internal oscillator. The LTC2498 can be configured to reject line frequencies of 50Hz, 60Hz or simultaneous 50Hz/60Hz, while maintaining 600nV_{RMS} noise across the full input voltage range.

For lower resolution applications, Linear Technology is also introducing the LTC2496, a pin-compatible 16-bit ADC. The LTC2498 and LTC2496 are each available in QFN-38 (5mm x 7mm) packages, offering a pin-compatible and code-compatible family for performance/cost optimization. Both Easy Drive delta-sigma ADCs are available in commercial and industrial temperature ranges. Pricing begins at \$3.45 each for the LTC2498 and \$2.65 each for the LTC2496, in 1,000-piece quantities.

Photo Caption: 24-Bit, 16-Channel Easy Drive Delta-Sigma ADC

Summary of Features: LTC2498

- 8 Differential/16 Single-Ended Input Channels
- Easy Drive Technology Enables Rail-to-Rail Inputs with Zero Differential Input Current
- Directly Digitizes High Impedance Sensors with Full Accuracy
- 600nV RMS Noise
- Integrated High Accuracy Temperature Sensor
- Programmable 50Hz, 60Hz or Simultaneous 50Hz/60Hz Rejection Mode
- 2ppm INL, 24-Bit No Missing Codes
- Single Supply 2.7V to 5.5V Operation (0.8mW)
- SPI-Compatible Serial I/O
- 5mm x 7mm QFN Package

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, 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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