



## **16-Bit I<sup>2</sup>C ADC Integrates 2ppm/°C Reference in 3mm x 3mm Package**

MILPITAS, CA – June 24, 2009 – Linear Technology Corporation introduces the LTC2463, a 16-bit delta sigma ADC that integrates a precision reference in tiny 12-lead 3mm x 3mm DFN and 4mm x 5mm MSOP packages. With the device's integrated reference (2ppm/°C typical, 10ppm/°C maximum), the LTC2463 allows precise measurements with no need for an external reference. The LTC2463 communicates via a 2-wire I<sup>2</sup>C interface and is a complete analog solution for portable sensors, compact systems or power supply monitoring.

Operating from a single 2.7V to 5.5V supply, the LTC2463 measures a  $\pm 1.25\text{V}$  differential input range at output rates up to 60Hz, making it easy to measure temperature, pressure, voltage or other low frequency sensor signals. The LTC2463 achieves 16-bit DC performance of 1LSB (typical) integral nonlinearity error,  $2.2\mu\text{V}_{\text{RMS}}$  transition noise and 0.01% gain error (typical). This ADC has an internal oscillator, another space-saving feature.

The LTC2463 draws 2.5mA (max) supply current at the 60Hz maximum sample rate with the internal reference active. After each conversion, the ADC enters nap mode, reducing supply current to less than 1.5mA. Supply current can be further reduced to less than 2uA (max) in sleep mode. The LTC2463 incorporates a proprietary input sampling network that reduces the dynamic input current to less than 50nA, enabling a wide range of external input protection and filter circuits.

The LTC2463 is offered alongside the LTC2461, a 16-bit I<sup>2</sup>C ADC that measures single-ended inputs between 0V and 1.25V. The LTC2463 and LTC2461 join the previously released LTC2453 (differential input,  $\pm 5\text{V}$ ) and LTC2451 (single-ended input, 0V to 5V). Pricing for the LTC2461 and LTC2463 begins at \$1.65, each in 1,000-piece quantities. For more information, visit [www.linear.com](http://www.linear.com).

## Ultra-Tiny ADC Family

Part Number	Input	Input Range	Output Rate	I/O	V <sub>REF</sub>
LTC2450	Single-Ended	0V to 5V	30Hz	SPI	V <sub>CC</sub> = V <sub>REF</sub>
LTC2450-1	Single-Ended	0V to 5V	60Hz	SPI	V <sub>CC</sub> = V <sub>REF</sub>
LTC2451	Single-Ended	0V to 5V	60Hz	I <sup>2</sup> C	External
LTC2452	Differential	±5V	60Hz	SPI	External
LTC2453	Differential	±5V	60Hz	I <sup>2</sup> C	External
LTC2460	Single-Ended	0V to 1.25V	60Hz	SPI	Internal
LTC2461	Single-Ended	0V to 1.25V	60Hz	I <sup>2</sup> C	Internal
LTC2462	Differential	±1.25V	60Hz	SPI	Internal
LTC2463	Differential	±1.25V	60Hz	I <sup>2</sup> C	Internal

**Photo Caption:** 16-Bit I<sup>2</sup>C ADC with 2ppm/°C Internal Reference


### Summary of Features: LTC2461/LTC2463

- 16-Bit Resolution, No Missing Codes
- Internal 1.25V Reference: (10ppm/°C max)
- Single-Ended (LTC2461) or Differential (LTC2463) Input
- 2LSB Offset Error
- 0.01% Gain Error
- 60 Conversions Per Second
- Single Conversion Settling Time for Multiplexed Applications
- Single-Cycle Operation with Auto Shutdown:
  - 1.5mA (typical) Supply Current
  - 2uA (max) Sleep Current
- Internal Oscillator—No External Components Required
- 2-Wire I<sup>2</sup>C Interface
- Tiny 12-Lead 3mm x 3mm DFN & MSOP Packages

### 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<sup>®</sup> 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.

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