12-Bit, 3Msps SAR ADC Dissipates Only 7.2mW in Tiny Thin SOT23 Package

MILPITAS, CA – April 30, 2008 – Linear Technology Corporation introduces the LTC2366, a 12-bit successive approximation register (SAR) ADC that outputs data at up to 3Msps in tiny 6- and 8-lead TSOT-23 packages. Operating from a single 2.35V to 3.6V supply, the LTC2366 consumes only 7.2mW at the maximum output rate, a 20% power savings over the nearest competitor. With its tiny footprint and very low power dissipation, the LTC2366 is ideal for a wide variety of portable and space-constrained applications, including medical devices, communication systems, and industrial monitors.

The LTC2366 is Linear's fastest offering in a family of five TSOT-23 pin- and software-compatible ADCs. The LTC2365 output data rate is guaranteed up to 1Msps and the LTC2362 up to 500ksps. For lower speeds, the LTC2361 is guaranteed up to 250ksps and the LTC2360 up to 100ksps. Power is optimized for each sample rate, as the LTC2360 draws just 1.5mW at 100ksps. Power dissipation can be further decreased with a shutdown mode that reduces the supply current to 2uA (max), saving battery life. All five ADCs are offered in industry standard 6-pin TSOT-23 packages, as well as 8-pin TSOT-23 packages that include an external reference pin and a digital output supply pin (OV_{DD}) that can range between 1V and V_{DD}. With guaranteed specifications across the -40°C to +125°C temperature range, the LTC2366, LTC2365, LTC2362, LTC2361, and LTC2360 can be used for monitoring precision DC or AC signals in a variety of applications, including automotive.

Communicating via a serial SPI/QSPI/Microwire-compatible interface, these ADCs offer no data latency and achieve excellent DC specifications of +/-1LSB INL and +/-1LSB DNL. These converters also excel when digitizing AC signals. The LTC2366 measures 72dB SNR, -80dB THD, and 82dB SFDR at a 1MHz input frequency.

The LTC2360-LTC2362 and LTC2365/LTC2366 are all available today in commercial, industrial, and automotive temperature grades. Pricing begins at $1.25 for 1,000-piece quantities.

Photo Caption: 12-Bit, 3Msps No-Latency SAR ADC in Tiny 6-/8-Lead ThinSOT-23

Summary of Features: LTC2360, LTC2361, LTC2362, LTC2365, LTC2366

- Fast Data Output Rates:
  - 3Msps (LTC2366)
  - 1Msps (LTC2365)
  - 500ksps (LTC2362)
  - 250ksps (LTC2361)
  - 100ksps (LTC2360)
- No Data Latency
- Low Power Dissipation:
  7.2mW at 3Msps, 1.5mW at 100ksps
  0.3uW Sleep Mode
- 2.35V to 3.6V Single Supply Operation
- Dedicated External Reference (TSOT23-8)
- 1V to 3.6V Digital Output Supply (TSOT23-8)
- Tiny 6- and 8-Lead Thin SOT-23 Packages
- 71dB SINAD, -80dB THD at 1MHz
- Guaranteed Operation From -40°C to +125°C
- 3-Wire SPI/QSPI/Microwire-Compatible Serial Interface

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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