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Precision Bidirectional 70V Current Sense Amplifier Offers Unprecedented Flexibility

MILPITAS, CA – February 7, 2007 – Linear Technology Corporation announces the LTC6104, a unique high-side current sense amplifier composed of two complete amplifiers with a combined single bipolar output. The dual amplifier topology is ideal for bidirectional operation and provides exceptional flexibility via gain programmability for each current sense direction. Separate amplifiers allow monitoring of a single current sense resistor, or separate sense resistors. Typical applications for the LTC6104 include battery charging circuitry, H-bridge driver circuits and servo controls.

The LTC6104 has outstanding performance: input bias current is 170nA Max and input offset voltage is $\pm 450\mu\text{V}$ Max. This precision performance allows the part to resolve tiny currents and operate over a wide dynamic range. The LTC6104 can withstand voltages up to 70V, a valuable feature when power supply failures or catastrophic load changes can lead to voltage fly-back conditions. With a response time under 1 μs , the LTC6104 is ideal for automatic power shutdown under fault conditions. Gain is set with three external resistors and since the gain resistors are the primary determinants of accuracy, use of precision resistors provides for accuracy better than 1%.

“The LTC6104 continues Linear Technology’s leadership in high performance current sense amplifiers” says Mike Kultgen, Design Manager for Linear Technology. “The LTC6104 addresses a wide array of applications, both straightforward and unique.”

The LTC6104 is in full production, with prices starting at \$1.38 each in 1,000-piece quantities.

Offers Unprecedented Flexibility


Photo Caption: Dual or Bidirectional Precision Current Sense

Summary of Features: LTC6104

- Ideal for Bi-Directional High-Side Current Sensing
- Operates from 4V to 60V, 70V Max
- Each Direction Is Gain Configurable with External Resistors
- 1 μ s Response Time
- Low Offset Voltage: $\pm 450\mu$ V Max
- Low Input Bias Current: 170nA Max
- 110dB Min PSRR
- 520 μ A Typical Supply Current
- -40°C to 125°C Operating Temperature Range
- MSOP8 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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Press Contacts:

John Hamburger, Director Marketing Communications

jhamburger@linear.com

Tel 408-432-1900 ext 2419

Doug Dickinson, Media Relations Manager

ddickinson@linear.com

408-432-1900 ext 2233