



High Side Current Sense Amplifier Features Input Range from -0.3V to 44V & $300\mu\text{V}$ Offset

MILPITAS, CA – December 10, 2007 – Linear Technology announces the LT6105, a precision current sense amplifier with an input common mode range that extends from -0.3V below V_- , up to 44V above V_- . The common mode range of the LT6105 is independent of the positive supply voltage, making it ideal for a wide range of applications. As a result, the LT6105 can operate as a high-side or a low-side current sense monitor. The LT6105 can continuously monitor current during a load short or power supply failure, as well as continuously monitor a battery from full charge to depletion. The LT6105 can directly monitor the current on a negative supply voltage and because the inputs of LT6105 can withstand differential voltages up to $\pm 44\text{V}$, it is ideal for monitoring loads connected through a fuse or a MOSFET switch.

The LT6105 offers excellent precision with only $300\mu\text{V}$ of input offset voltage and only $0.5\mu\text{V}/^\circ\text{C}$ of input offset drift. Any gain between 1 to $100\text{V}/\text{V}$ can be designed with external resistors and gain error is limited to less than 1% maximum. The LT6105 operates with an independent supply voltage of 2.85V to 36V and draws only $150\mu\text{A}$. When powered down, the sense pins are biased off, which prevents any loading of the sense resistor, irrespective of the sense voltage.

“The LT6105 is one of the most flexible current sense devices in the market today,” says Mike Kultgen, Design Manager for Linear Technology. “It’s a complete, precision current sense amplifier with a lot of features in a small package.”

The LT6105 is in full production, with prices starting at $\$0.99$ each in 1,000-piece quantities.


Photo Caption: Precision, Extended Input Range Current Sense Amplifier

Summary of Features: LT6105

- Very Wide, Over-the-Top™, Input Common Mode Range
 - Extends 44V above V- (Independent of V+)
 - Extends -0.3V below V-
- Independent Power Supply: 2.85V to 36V
- Input Offset Voltage: 300uV Maximum
- Input Offset Drift: 0.5uV/°C
- Gain Error: 1% Maximum
- Gain Configurable with External Resistors
- Operating Current: 150uA
- Slew Rate: 2V/us
- Sense Input Current when Powered Down: 1nA
- Operating Temperature Range -40°C to 125°C
- Available in 2mm x 3mm DFN & 8-Lead 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™ 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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