



## **Precision 50 $\mu$ V Offset Op Amp Operates with 76V Input Range**

MILPITAS, CA – February 14, 2013 – Linear Technology introduces the [LT6016](#) and [LT6017](#), dual and quad wide input range operational amplifiers. These amplifiers combine high precision with the ruggedness and versatility of LTC's unique Over-the-Top<sup>®</sup> architecture. Input offset voltage is 50 $\mu$ V max, input bias current is 5nA, and low frequency noise is 0.5 $\mu$ V<sub>P-P</sub> making these devices suitable for a wide range of precision industrial, automotive, and instrumentation applications.

Over-the-Top inputs provide true operation well beyond the  $V^+$  rail. The LT6016/LT6017 function normally with inputs up to 76V above  $V^-$  independent of whether  $V^+$  is 3V or 50V. Additional fault tolerant features protect the op amps from reverse supply conditions (up to -50V at  $V^+$ ), negative transients (up to -25V at  $V_{IN}$ ), and forced output voltage with no power supplied (up to 50V at  $V_{OUT}$ ). This robust architecture is especially useful for applications where the amplifier is at the analog interface to another board, and for high-side and low-side current sensing.

The LT6016 and LT6017 are fully specified over -40°C to 85°C, -40°C to 125°C, and -55°C to 150°C temperature ranges. The dual LT6016 is available in an 8-lead MSOP package, starting at \$2.50 each in quantities of 1000. The quad LT6017 is available in a 6mm x 3mm DFN package, starting at \$3.96 each in quantities of 1000. For more information, visit [www.linear.com/product/LT6016](http://www.linear.com/product/LT6016) and [www.linear.com/product/LT6017](http://www.linear.com/product/LT6017).

**Photo Caption:** Op Amp Provides 50 $\mu$ V Precision with 0V to 76V Input Range

### Summary of Features: LT6016/LT6017


- Input Common Mode Range:  $V_-$  to  $V_- + 76V$
- $V_{OS}$ :  $\pm 50\mu V$  (Maximum)
- Low Power: 315 $\mu A$ /Amplifier
- CMRR, PSRR: 126dB
- Gain Bandwidth Product: 3.2MHz
- High Voltage Gain: 1000V/mV
- Reverse Battery Protection to 50V
- No Phase Reversal
- No Supply Sequencing Problems
- Operating Temperature Range:  $-55^\circ C$  to  $150^\circ C$

#### Applications:

- High-Side or Low-Side Current Sensing
- Battery/Power Supply Monitoring
- 4mA to 20mA Transmitters
- High Voltage Data Acquisition
- Battery/Portable Instrumentation

### About Linear Technology

Linear Technology Corporation, a member of the S&P 500, has been designing, manufacturing and marketing a broad line of high performance analog integrated circuits for major companies worldwide for three decades. The Company's products provide an essential bridge between our analog world and the digital electronics in communications, networking, industrial, automotive, computer, medical, instrumentation, consumer, and military and aerospace systems. Linear Technology produces power management, data conversion, signal conditioning, RF and interface ICs,  $\mu$ Module<sup>®</sup> subsystems, and wireless sensor network products. For more information, visit [www.linear.com](http://www.linear.com)

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