



60V Zero-Drift Operational Amplifier with 220nV_{P-P} Noise Achieves Widest Dynamic Range

MILPITAS, CA – August 22, 2013 – Linear Technology introduces the [LTC2057HV](#), a zero-drift amplifier featuring self-calibrating circuitry that provides high DC precision and stability over changes in temperature, time, input range and supply voltage. With 5 μ V input offset voltage, 0.025 μ V/°C offset drift and 220nV_{P-P} low frequency noise with no 1/f noise, the LTC2057HV offers more than 140dB dynamic range while operating on a 60V (\pm 30V) supply. This wide dynamic range enables tiny signals to be amplified in the presence of much larger signals without saturating the amplifier or losing precision. For applications requiring supply voltages up to 36V, a lower supply version of LTC2057 is available.

Specified over a -40°C to 125°C temperature range, the LTC2057 and LTC2057HV offer an optimal combination of low voltage noise, low current noise and low input bias current, while the zero-drift architecture cancels 1/f noise. Spurious artifacts normally associated with zero-drift amplifiers are suppressed, further extending the dynamic range, stability and useful signal bandwidth. The input common-mode range includes the negative rail and the output swings rail-to-rail, making the LTC2057 suitable for single- and dual-supply industrial, instrumentation and automotive applications.

The LTC2057 is specified for 30V supply operation while the LTC2057HV can operate on supplies up to 60V. Both versions also work on 4.75V supplies and are fully specified over -40°C to 85°C and -40°C to 125°C temperature ranges. The LTC2057 is available in 3mm x 3mm DFN, MSOP-8 and SOIC-8 packages, as well as an MSOP-10 package with a pinout that

enables a guard ring to be easily routed around the input to preserve the high precision and low noise performance at high source impedance. Pricing starts at \$1.54 each for the LTC2057 and \$2.19 each for the LTC2057HV in quantities of 1000. For more information, visit

www.linear.com/product/LTC2057

Photo Caption: 60V Supply Zero-Drift Op Amp

Summary of Features: LTC2057HV

- Supply Voltage Range: 4.75V to 60V
- Offset Voltage: 5 μ V (Maximum)
- Offset Voltage Drift: 0.025 μ V/ $^{\circ}$ C (Maximum, -40° C to 125 $^{\circ}$ C)
- Input Noise Voltage
 - 220nV_{P-P}, DC to 10Hz (Typ)
 - 13nV/ $\sqrt{\text{Hz}}$, 1kHz (Typ)
- Input Common Mode Range: $V^- - 0.1\text{V}$ to $V^+ - 1.5\text{V}$
- Rail-to-Rail Output
- A_{VOL} : 150dB (Typ)
- PSRR: 160dB (Typ)
- CMRR: 150dB (Typ)
- Shutdown Mode
- MS10 Package Includes Guard Ring Pins

Applications:

- High Resolution Data Acquisition
- Reference Buffering
- Test & Measurement
- Electronic Scales
- Thermocouple Amplifiers
- Strain Gauges
- Low-Side Current Sense
- Automotive Monitors and Control

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, μ Module[®] subsystems, and wireless sensor network products. For more information, visit www.linear.com

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