



Femtoamp Bias Current Op Amps Achieve 500MHz Gain Bandwidth for TIA & Buffer Applications

MILPITAS, CA – September 29, 2014 – Linear Technology announces the [LTC6268](#) and [LTC6269](#), FET-input single and dual op amps, which deliver outstanding performance for high speed and high dynamic range transimpedance amplifier (TIA) and buffer applications. With just 3fA bias current at 25°C and 4pA max over the entire –40°C to 125°C temperature range, the LTC6268/LTC6269 can resolve input currents from several femtoamps to amps. Wideband voltage and current noise is 4.3nV/√Hz and 5.5fA/√Hz, respectively, enabling high dynamic range circuits. Built for speed as well as precision, the LTC6268 features 500MHz gain bandwidth product, sub-pF input capacitance and –100dB harmonic distortion at 1MHz. In addition to photodiode and photomultiplier (PMT) circuits, the LTC6268/9 are well suited for other high impedance sensor applications and for driving analog-to-digital converters (ADCs).

The LTC6268 data sheet features circuit and layout techniques to maximize TIA performance, with example circuits ranging from 20kΩ transimpedance gain at 65MHz bandwidth, to 499kΩ transimpedance gain at 11.2MHz bandwidth.

The LTC6268 is available in a 6-lead SOT-23 package, as well as an 8-lead SOIC with guard pins to protect against board leakage currents. The LTC6269 is available in MSOP-8 with exposed pad and 3mm x 3mm DFN-10 packages.

The LTC6268 and LTC6269 are unity-gain stable and fully specified over the industrial

–40°C to 85°C and –40°C to 125°C temperature ranges. Prices start at \$2.90 each for the LTC6268 and \$4.90 for the LTC6269 each in 1000-piece quantities. For more information, visit

www.linear.com/product/LTC6268 and www.linear.com/product/LTC6269

Photo Caption: Fast Ultralow Bias Current Amplifier


Summary of Features: LTC6268

- Gain Bandwidth Product: 500MHz
- –3dB Bandwidth (A = 1): 350MHz
- Low Input Bias Current:
 - o ± 3 fA Typ. Room temperature
 - o 4pA Max at 125°C
- Current Noise (100kHz): 5.5fA/ $\sqrt{\text{Hz}}$
- Voltage Noise (1MHz): 4.3nV/ $\sqrt{\text{Hz}}$
- Extremely Low C_{IN} : 450fF
- Rail-to-Rail Output
- Slew Rate: 400V/ μs
- Supply Range: 3.1V to 5.25V
- Quiescent Current: 16.5mA
- Harmonic Distortion ($2V_{\text{p,p}}$):
 - o –100dB at 1MHz
 - o –80dB at 10MHz
- Operating Temp Range: –40°C to 125°C
- Single in 8-Lead SO-8, 6-Lead TSOP-23 Packages
- Dual 8-Lead MS8, 3mm x 3mm 10-Lead DFN 10 Packages

The USA list pricing shown is for budgetary use only. International prices may differ due to local duties, taxes, fees and exchange rates.

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 over 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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