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## Four New Amplifiers Serve Many Applications

This issue of *Linear Technology* features a quartet of exciting new amplifiers from LTC: The LT1792/LT1793 low noise JFET op amps, the LT1813 high slew rate op amp, the LT1787 high-side current sense amplifier and the LT1399/LT1399HV triple current feedback amplifiers.


The LT1792/LT1793 single JFET op amps offer both very low voltage noise and low current noise, providing the lowest total noise over a wide range of transducer impedances. These op amps are unconditionally stable for gains of one or more, even with capacitive loads of 1000pF. Their low offset voltage and high DC gain allow the LT1792/LT1793 to fit into precision applications, especially those involving high impedance, capacitive transducers.

The LT1813 is a 100MHz, 750V/ $\mu$ s dual operational amplifier. Requiring only 3mA of supply current, it uses LTC's advanced, low voltage complementary bipolar process and a few design tricks to exceed the performance of its older siblings. A key figure of merit for amplifiers is the ratio of gain bandwidth to supply current (expressed as MHz/mA). The new process employed by the LT1813 forsakes high supply voltage operation for a 3 $\times$ -4 $\times$  increase in MHz/mA. Blazing speed from such a modest amount of supply current (3mA) is extremely attractive for low power applications. The LT1813 extends the frequency response of applications such as filters, instrumentation amplifiers and buffers.

The LT1787 employs precision technology to build a superior high-side current sense amplifier. The LT1787 will find uses in cellular phones, portable instruments and wireless telecom devices for precisely monitoring the current into or out of a battery. The LT1787 monitors bidirectional currents via the voltage across an external sense resistor. It features a minute input offset voltage of 40 $\mu$ V with a full-scale input of up to 500mV. This translates to a dynamic range of over 12 bits. The LT1787HV features a 60V maximum input, which allows it to be used in telecom and industrial applications that require the sensing of higher voltages. The device is self-powered from the supply that it monitors and requires only 60 $\mu$ A supply current.

For video and computer display applications, LTC introduces the LT1399/LT1399HV triple current feedback amplifiers. These devices contain three independent 300MHz CFAs, each with a shutdown pin. Each CFA has 0.1dB gain flatness of 150MHz and a slew rate of 800V/ $\mu$ s. The LT1399 operates on supplies from 4V to  $\pm$ 6V. The LT1399HV operates on supplies ranging from 4V to  $\pm$ 7.5V. Each amplifier can be enabled in 30ns and disabled in 40ns, making them ideal in spread-spectrum and portable equipment applications. With the addition of a small series resistor, the parts can drive large capacitive loads. This feature, combined with the LT1399HV's high voltage operation, makes it ideal for driving LCD displays. 



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