

LTC News for Immediate Release

For more information, tel. 408-432-1900
Doug Dickinson, Media Relations Mgr., ext. 2233
www.linear.com

Tiny Versatile Amplifiers Require no External Components

MILPITAS, CA, – October 25, 2004 – Responding to today's demands for highly flexible design solutions to support a wide variety of applications, Linear Technology introduces the LT1991 precision and LT1995 high-speed gain selectable amplifiers. Unlike traditional amplifier solutions that require external resistors to set the gain, this new amplifier family includes precision resistors on-board. The result is a one-chip solution that can be easily configured into various gain circuits by simply pin-strapping the device. Users can configure the LT1991 and LT1995 as difference, summing, inverting or non-inverting amplifiers with various gain options without using any external components. These highly versatile amplifiers allow designers to reduce the BOM and to use a single chip to perform multiple amplifier tasks.

The LT1991 combines a precision micropower operational amplifier with eight precision resistors to form a single chip solution for accurately amplifying voltages with better than 0.04% gain accuracy. The amplifier has excellent DC characteristics with input offset voltage of less than 50uV and input offset current of 50pA. The low offset voltage drift of 1uV/°C, combined with gain drift below 3ppm/°C, results in stable operation over temperature. The LT1991 has a rail-to-rail output and operates on supplies from 2.7V to 36V. It draws less than 110uA on a single 5V supply, making it suitable for low voltage, low power instrumentation applications.

“The magic of the LT1991 and LT1995 is in the on-board thin film Resistors,” comments design manager Bill Jett. “The matching accuracy and tempcos mean both closed loop gain and CMRR will be solid over time and temperature”

The LT1995 integrates a high-speed amplifier with eight precision resistors in a tiny MSOP-10 package. The amplifier features superb slewing characteristics, 1000V/us, and fast settling time, 100ns to 0.1%, resulting in excellent AC characteristics. The LT1995 operates on supply voltages from $\pm 2.5V$ to $\pm 15V$. It makes an excellent choice in applications such as data acquisition cards in industrial and process control, ATE cards, current tester boards, satellite receiver cards, communications and optical networking equipment, semiconductor fab equipment and medical imaging systems.

(more...)

Offered in the 10-lead MSOP package, the LT1991 and LT1995 are specified for operation over the commercial and industrial temperature ranges. 1000-piece pricing starts at \$1.39 each for the LT1991 precision amplifier and \$1.89 each for the LT1995 high-speed amplifier.

Summary of Features: LT1991

- Pin Configurable as:
 - Difference Amp, G = 1 to 13
 - Non-Inverting Amp, G = 0.07 to 14
 - Inverting Amp, G = -0.08 to -13
- Gain Accuracy: 0.04% Max
- Gain Drift: 3ppm/°C Max
- Offset Voltage: 50uV Max
- Gain Bandwidth: 560kHz
- Rail-to-Rail Output
- Supply Current: 110uA
- Supply Voltage: 2.7V to 36V
- MSOP-10 and DFN Package

Summary of Features: LT1995

- Pin Configurable as:
 - Difference Amp, G = 1 to 7
 - Non-Inverting Amp, G = 1 to 8
 - Inverting Amp, G = -1 to -7
- Gain Accuracy: 0.2% Max
- Offset Voltage: 2.5mV Max
- Gain Bandwidth: 32MHz
- Slew Rate: 1000V/us
- Supply Current: 9mA Max
- Supply Voltage: $\pm 2.5V$ to $\pm 15V$
- MSOP-10 Package

COMPANY BACKGROUND: Linear Technology Corporation was founded in 1981 as a manufacturer of high performance linear integrated circuits. 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, 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, contact:

Doug Dickinson, Media Relations Manager

Linear Technology Corporation

1630 McCarthy Boulevard

Milpitas, CA 95035-7417

408-432-1900

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