

# ±15V Chopper Stabilized Operational Amplifier with Internal Capacitors

## FEATURES

- High Voltage Operation, ±18V
- No External Components Required
- Maximum Offset Voltage 5μV
- Maximum Offset Voltage Drift 0.05μV/°C
- Low Noise 1.8μVp-p (0.1Hz to 10Hz)
- Minimum Voltage Gain 140dB
- Minimum PSRR 120dB
- Minimum CMRR 120dB
- Low Supply Current 0.8mA
- Single Supply Operation 4.75V to 36V
- Input Common Mode Range Includes Ground
- 200μA Supply Current with Pin 1 Grounded
- Typical Overload Recovery Time 20ms

## APPLICATIONS

- Strain Gauge Amplifiers
- Electronic Scales
- Medical Instrumentation
- Thermocouple Amplifiers
- High Resolution Data Acquisition

## DESCRIPTION

The LTC1150 is a high-voltage, high-performance chopper stabilized operational amplifier. The two sample-and-hold capacitors usually required externally by other chopper amplifiers are integrated on-chip. Further, LTC's proprietary high-voltage CMOS structures allow the LTC1150 to operate at up to 36V total supply voltage.

The LTC1150 has an offset voltage of 0.5μV, drift of 0.01μV/°C, 0.1Hz to 10Hz input noise voltage of 1.8μVp-p and a typical voltage gain of 180dB. The slew rate of 3V/μs and a gain bandwidth product of 2.5MHz are achieved with 0.8mA of supply current. Overload recovery times from positive and negative saturation conditions are 3ms and 20ms, respectively.

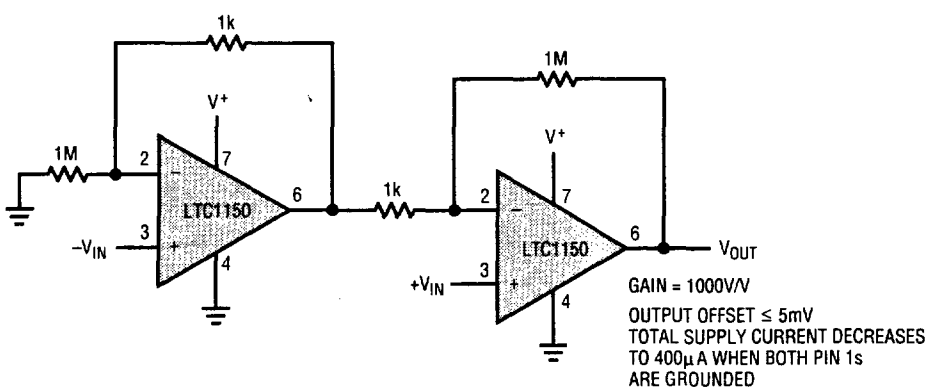
For applications demanding low power consumption, pin 1 can be used to program the supply current. Pin 5 is an optional AC-coupled clock input, useful for synchronization.

The LTC1150 is available in a standard 8-lead metal can, plastic and ceramic dual in line packages, as well as an 8-lead SO8 package. The LTC1150 can be a plug-in replacement for most standard bipolar op amps with significant improvement in DC performance.

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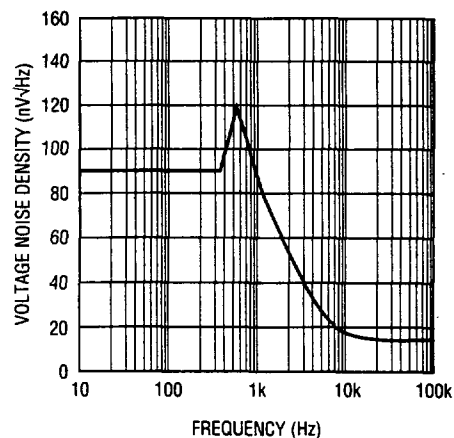
## TYPICAL APPLICATION

Single Supply Instrumentation Amplifier



LTC1150 - TA01

Noise Spectrum



LTC1150 - TPC28

