

Zero Drift Operational Amplifier

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FEATURES

- SOT-23 Package
- Maximum Offset Voltage: 5 μ V
- Maximum Offset Voltage Drift: 50nV/ $^{\circ}$ C
- Noise: 1.5 μ V_{P-P} (0.1Hz to 10Hz Typ)
- Voltage Gain: 130dB (Typ)
- PSRR: 130dB (Typ)
- CMRR: 130dB (Typ)
- Supply Current: 0.8mA (Typ)
- Single Supply Operation: 2.7V to 6V
- Extended Common Mode Input Range
- Output Swings Rail-to-Rail
- Overload Recovery Time: 2ms (Typ)

APPLICATIONS

- Thermocouple Amplifiers
- Electronic Scales
- Medical Instrumentation
- Strain Gauge Amplifiers
- High Resolution Data Acquisition
- DC Accurate RC Active Filters

ABSOLUTE MAXIMUM RATINGS


Total Supply Voltage (V^+ to V^-) 7V
Input Voltage ($V^+ + 0.3V$)($V^- - 0.3V$)
Output Short-Circuit Duration Indefinite
Operating Temperature Range -40° C to 85° C
Storage Temperature Range -65° C to 150° C
Lead Temperature (Soldering, 10 sec) 300° C

DESCRIPTION

The LTC[®]2050 is a low drift operational amplifier available in the 5- or 6-lead SOT-23 and SO-8 packages. It operates from a single 2.7V supply while still supporting 5V applications. The power consumption is 800 μ A and the versions in the 6-lead SOT-23 and SO-8 packages offer power shutdown.

The LTC2050, despite its miniature size, features uncompromising DC performance; the typical input offset voltage and offset drift are 0.5 μ V and 10nV/ $^{\circ}$ C. The almost zero DC offset and drift are supported with a power supply rejection ratio (PSRR) and common mode rejection ratio (CMRR) of more than 130dB.

The input common mode voltage ranges from the negative supply up to 1V from the positive supply. The LTC2050 also has an enhanced output stage capable of driving loads as low as 1k Ω to both supply rails. The open-loop gain, loaded with 1k Ω , is in excess of 130dB. The LTC2050 also features a 1.5 μ V_{P-P} DC to 10Hz noise and a 3MHz gain-bandwidth product.

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PACKAGE INFORMATION

