

1. FEATURES

- Small 3mm × 3mm MSOP package
- Ultra-small QFN package: 2mm × 1.5mm × 0.4mm
- Wide supply range: 2.0V to 5.5V
- Low current consumption: 150μA (continuous-conversion mode)
- Programmable output data rate: 10SPS to 3571SPS
- Optional 50/60Hz rejection filter
- Sensor detect current
- Single-cycle settling
- Internal low-drift voltage reference
- Internal oscillator
- I²C interface: four pin-selectable addresses
- Four single-ended or two differential inputs
- Programmable comparator
- Operating temperature range: -40°C to 125°C

2. APPLICATIONS

- Portable instrumentation
- Battery voltage and current monitoring
- Temperature measurement systems
- Consumer electronics
- Factory automation and process control

3. DESCRIPTION

The ADX121 device is precision, low-power, 20-bit, I²C-compatible, analog-to-digital converter (ADC) offered with MSOP-10 and QFN-10 packages. The ADX121 device incorporates a low-drift voltage reference and an oscillator. It also incorporates a programmable gain amplifier (PGA) and a digital comparator. These features, along with a wide operating supply range, make the ADX121 well suited for power- and space-constrained, sensor measurement applications.

The ADX121 performs conversions at data rates up to 3571 samples per second (SPS). Internal digital filter provides flexible output data rate, from 10SPS to 3571SPS. The PGA offers input ranges from ±256mV to ±6.144V, allowing precise large- and small-signal measurements. The ADX121 features an input multiplexer (MUX) that allows two differential or four single-ended input measurements. Use the digital comparator in the ADX121 for under- and overvoltage detection.

The ADX121 operates in either continuous-conversion mode or single-shot mode. The internal filter is single-cycle settling in both modes. The devices are automatically powered down after one conversion in single-shot mode; therefore, power consumption is significantly reduced during idle periods.

