MAX44290

1.8V, 15MHz, Low-Offset, Low-Power, Rail-to-Rail I/O Op-Amp

Unique Combination of High Precision, High Bandwidth, and Low-Voltage Operation

NDA Required. Request Full Data Sheet

Overview

Description

The MAX44290 offers a unique combination of high speed, precision, low noise, and low-voltage operation making them ideally suited for a large number of signal processing functions such as filtering and amplification of signals in portable and medical applications.

This amplifier features an input offset of less than 50µV and a high gain bandwidth product of 15MHz while maintaining a low 1.8V supply rail. The devices' rail-to-rail input/outputs and low noise guarantee maximum dynamic range in demanding applications such as 12-to-14-bit SAR ADC drivers. Unlike traditional rail-to-rail input structures, input crossover distortion is absent due to an optimized input stage with an ultra-quiet charge pump.

The MAX44290 includes a fast-power-on shutdown mode for further power savings. The operational amplifier operates from a supply range of 1.8V to 5.5V over the -40°C to +125°C temperature range and can operate down to 1.7V over the 0°C to +70°C temperature range. It is available in a tiny 6-bump wafer level package (WLP).

Key Features

- Low 1.8V Supply Rail Over the -40°C to +125°C Range
- 1.7V Supply Rail Over 0°C to 70°C Range
- 15MHz Unity-Gain Bandwidth
- Low 12.7nV/√Hz Input Voltage-Noise Density

- Low 50µV (max) Input Offset Voltage at +25°C
- 500µA Low Input Bias Current
- 750µA Quiescent Current
- < 1µA Supply Current in Shutdown
- Low 105dB Total Harmonic Distortion

Applications/Uses

- 3G/4G Handsets
- Analog-to-Digital Converter Buffers
- Battery-Operated Devices
- General-Purpose Signal Processing
- Notebooks
- Portable Medical Instruments
- Transimpedance Amplifiers