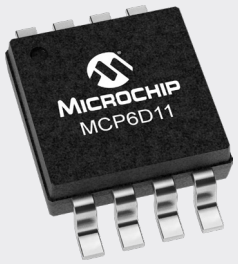
ANALOG SPOTLIGHT

MCP6D11

Low-Noise, Precision, 90 MHz Differential I/O Amplifier

General Information

The MCP6D11 device is a low noise, low-distortion Differential I/O Amplifier optimized for driving high-performance 14- and 16-bit SAR ADCs, such as the MCP331x1D ADC family. Featuring a low 5.0 nV/√Hz input-referred voltage noise and distortion of less than –116 dBc with an input signal of up to 100 kHz (2 VPP), the MCP6D11 consumes only 3.5 mW of quiescent power on a 2.5V supply. For power sensitive applications, a power-down function reduces the power consumption to less than 13 µW.



Features

- Low power
  - IQ: 1.4 mA
  - Supply voltage range: 2.5V to 5.5V
- Gain-bandwidth product: 90 MHz
- Slew rate: 25V/µs
- Low noise: 5.0 nV/√Hz, f = 10 kHz
- Low distortion (2Vp-p, 10 kHz):
  - HD2: -138 dBc
  - HD3: -137 dBc
- Fast settling: 200 ns to 0.01%
- Low offset: 150 µV max
- Rail-to-rail output
- Small packages: MSOP-8, 3 × 3 mm 16-pin QFN
- Extended temperature range: –40°C to +125°C

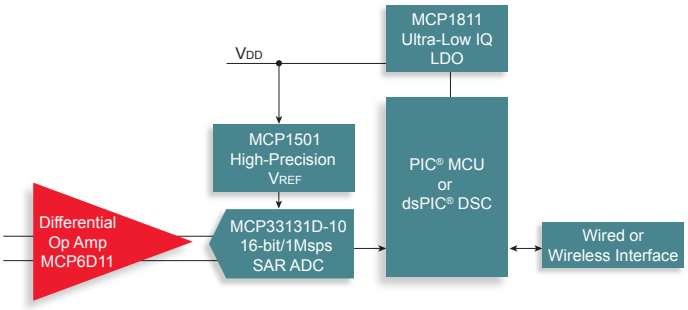
Applications

- Precision ADC driver: 14/16/18-bit SAR ADCs and delta-sigma ADCs
- Single-ended to differential conversion
- Differential active filter
- Line drivers networking/telecom equipment

Benefits

- Low noise, low distortion, low-offset driver enables the full performance of the ADC to be realized, maximizing system performance
- Industry standard pinouts in 8-pin MSOP and 16-pin QFN provides multiple sourcing options

Driver for ADCs



DS20006216A