AS1522, AS1523

Product Brief

10-Bit, Single-Supply, Low-Power, 400/300ksps, 4-Channel A/D Converters

1 General Description

The AS1522/AS1523 are low-power, 4/2-channel, 400/300ksps, 10-bit analog-to-digital (A/D) converters specifically designed to operate with single-supply devices. Superior AC characteristics, very low power consumption, and highly-reliable packaging make these ultra-small devices perfect for battery-powered remote-sensor and data-acquisition devices.

The successive-approximation register (SAR), high-speed sampling, high-bandwidth track/hold circuitry, and multi-mode operation combine to make these devices highly-flexible and configurable.

Both devices require low supply current (2.8mA @ 400ksps, AS1522; 2.2mA @ 300ksps, AS1523) and feature a reduced-power mode and a power-down mode to lower power consumption at slower throughput rates.

The devices operate from a single supply (+4.5 to +5.5V, AS1522; +2.7 to +3.6V, AS1523). Both devices contain an internal 2.5V reference, an integrated reference buffer, and feature support for an external reference (1V to V_{DD}).

Data accesses are made via the high-speed, 4-wire, SPI, QSPI-, and Microwire-compatible serial interface.

The devices are available in a 16-pin TSSOP package.

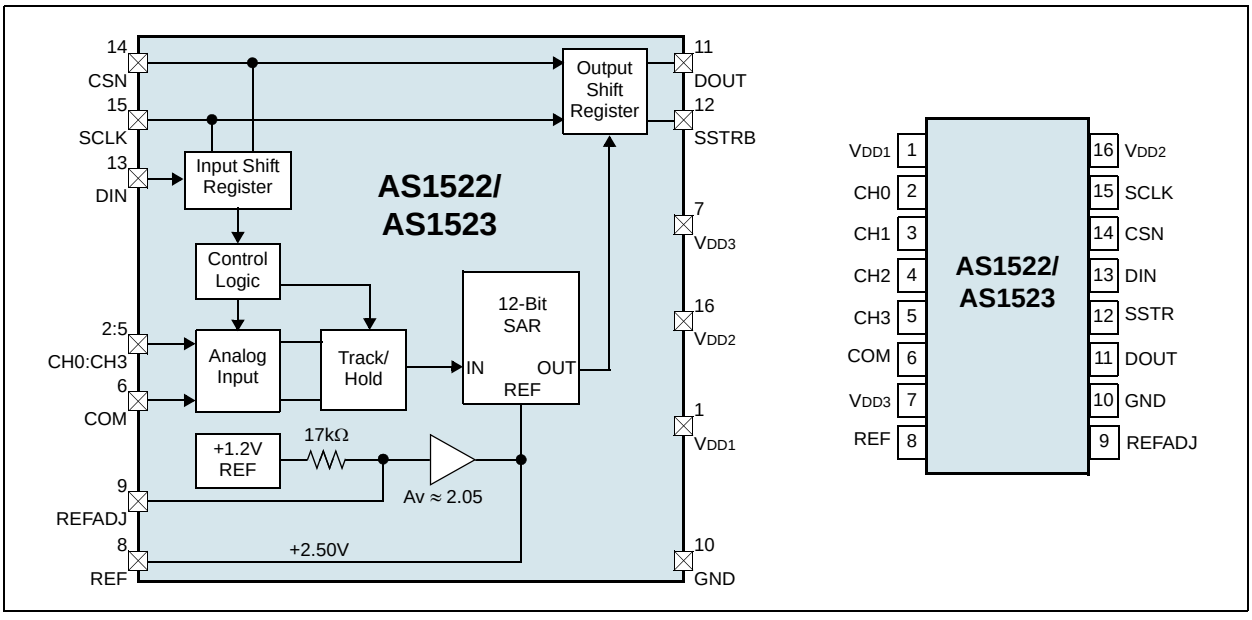
2 Key Features

- Single-Supply Operation:
  - +4.5 to +5.5V (AS1522)
  - +2.7 to +3.6V (AS1523)
- Sampling Rate:
  - 400ksps (AS1522)
  - 300ksps (AS1523)
- Software-Configurable Analog Input Types:
  - 4-Channel Single-Ended
  - 4-Channel Pseudo Differential Referenced to COM
  - 2-Channel Pseudo Differential
  - 2-Channel Fully Differential
- Software-Configurable Input Range
- Internal +2.5V Reference
- Low-Current Operation:
  - 2.8mA @ 400ksps (AS1522)
  - 2.2mA @ 300ksps (AS1523)
  - 0.4mA in Reduced-Power Mode
  - 0.5µA in Full Power-Down Mode
- SPI/QSPI/Microwire/TMS320-Compatible
- 16-pin TSSOP Package

3 Applications

The devices are ideal for remote sensors, data-acquisition and data-logging devices, pen-digitizers, process control, or any other space-limited A/D application with low power-consumption requirements.

Figure 1. Block Diagram and Pin Assignments



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