

ADC10065

10-Bit 65 MSPS 3V A/D Converter

General Description

The ADC10065 is a monolithic CMOS analog-to-digital converter capable of converting analog input signals into 10-bit digital words at 65 Megasamples per second (MSPS). This converter uses a differential, pipeline architecture with digital error correction and an on-chip sample-and-hold circuit to provide a complete conversion solution, and to minimize power consumption, while providing excellent dynamic performance. A unique sample-and-hold stage yields a full-power bandwidth of 400 MHz. Operating on a single 3.0V power supply, this device consumes just 68.4 mW at 65 MSPS, including the reference current. The Standby feature reduces power consumption to just 14.1 mW.

The differential inputs provide a full scale selectable input swing of 2.0 V_{P-P}, 1.5 V_{P-P}, 1.0 V_{P-P}, with the possibility of a single-ended input. Full use of the differential input is recommended for optimum performance. An internal +1.2V precision bandgap reference is used to set the ADC full-scale range, and also allows the user to supply a buffered reference voltage for those applications requiring increased accuracy. The output data format is 10-bit offset binary, or two's complement.

This device is available in the 28-lead TSSOP package and will operate over the industrial temperature range of -40°C to +85°C.

Features

- Single +3.0V operation
- Selectable 2.0 V_{P-P}, 1.5 V_{P-P}, or 1.0 V_{P-P} full-scale input swing
- 400 MHz -3 dB input bandwidth
- Low power consumption
- Standby mode
- On-chip reference and sample-and-hold amplifier
- Offset binary or two's complement data format
- Separate adjustable output driver supply to accommodate 2.5V and 3.3V logic families
- 28-pin TSSOP package

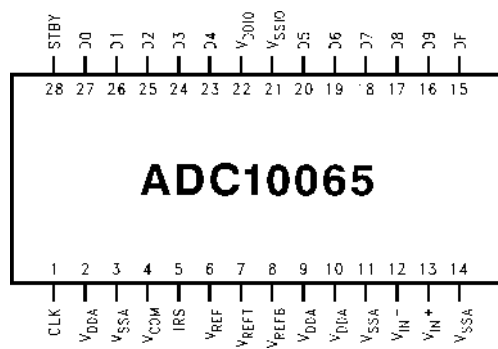
Key Specifications

■ Resolution	10 Bits
■ Conversion Rate	65 MSPS
■ Full Power Bandwidth	400 MHz
■ DNL	±0.3 LSB (typ)
■ SNR (f _{IN} = 11 MHz)	59.6 dB (typ)
■ SFDR (f _{IN} = 11 MHz)	-80 dB (typ)
■ Data Latency	6 Clock Cycles
■ Supply Voltage	+3.0V
■ Power Consumption, 65 MHz	68.4 mW

Applications

- Ultrasound and Imaging
- Instrumentation
- Cellular Based Stations/Communications Receivers
- Sonar/Radar
- xDSL
- Wireless Local Loops
- Data Acquisition Systems
- DSP Front Ends

Connection Diagram



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