

**16, 14 & 12-Bit, Self-Calibrating A/D Converters**

**Features**

- Monolithic CMOS A/D Converters  
Microprocessor Compatible  
Parallel and Serial Output  
Inherent Track/Hold Input
- True 12, 14 and 16-Bit Precision
- Conversion Times:  
CS5016 16.25  $\mu$ s  
CS5014 14.25  $\mu$ s  
CS5012A 7.2  $\mu$ s
- Self Calibration Maintains Accuracy  
Over Time and Temperature
- Low Power Dissipation: 150 mW
- Low Distortion

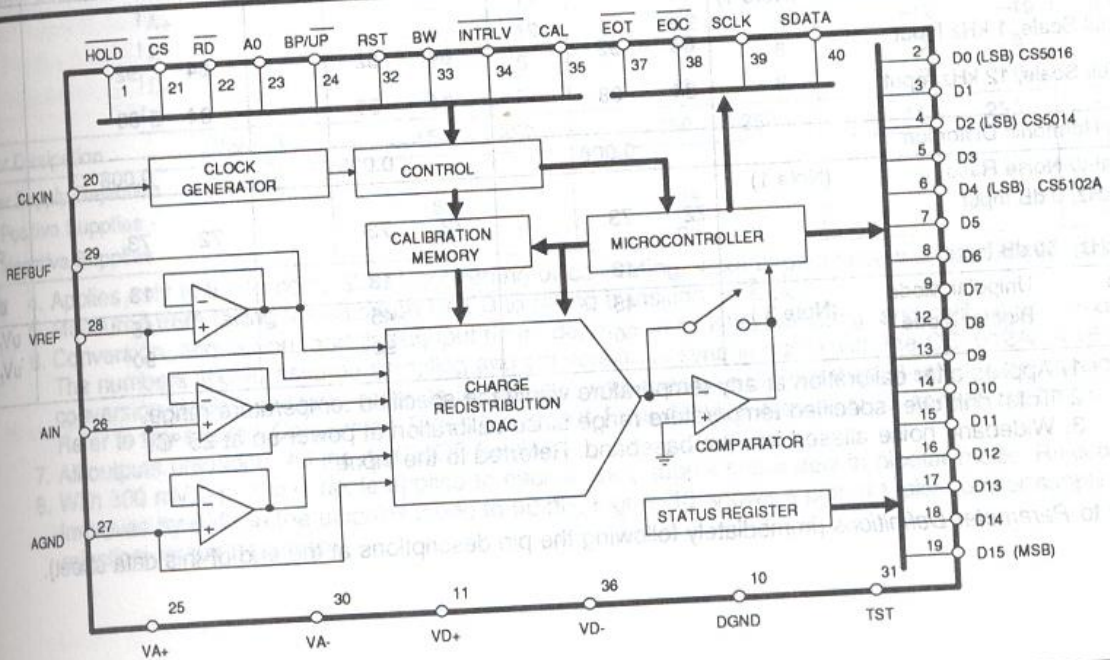
**General Description**

The CS5012A/14/16 are 12, 14 and 16-bit monolithic analog to digital converters with conversion times of 7.2 $\mu$ s, 14.25 $\mu$ s and 16.25 $\mu$ s. Unique self-calibration circuitry insures excellent linearity and differential non-linearity, with no missing codes. Offset and full scale errors are kept within 1/2 LSB (CS5012A/14) and 1 LSB (CS5016), eliminating the need for calibration. Unipolar and bipolar input ranges are digitally selectable.

The pin compatible CS5012A/14/16 consist of a DAC, conversion and calibration microcontroller, oscillator, comparator, microprocessor compatible 3-state I/O, and calibration circuitry. The input track-and-hold, inherent to the devices' sampling architecture, acquires the input signal after each conversion using a fast slewing on-chip buffer amplifier. This allows throughput rates up to 100 kHz (CS5012A), 56 kHz (CS5014) and 50 kHz (CS5016).

An evaluation board (CDB5012/14/16) is available which allows fast evaluation of ADC performance.

**ORDERING INFORMATION:** Pages 3-45 & 3-46



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