

12-bit, 100ksps SAR Analog to Digital Converter

Description

The HX11AA is a 12-bit, pseudo-differential 100ksps SAR analog to digital converter. Suitable in environments up to 125°C, the ADC is optimized to provide high accuracy conversion of analog signals into the digital domain. Options include a 16 channel input MUX.

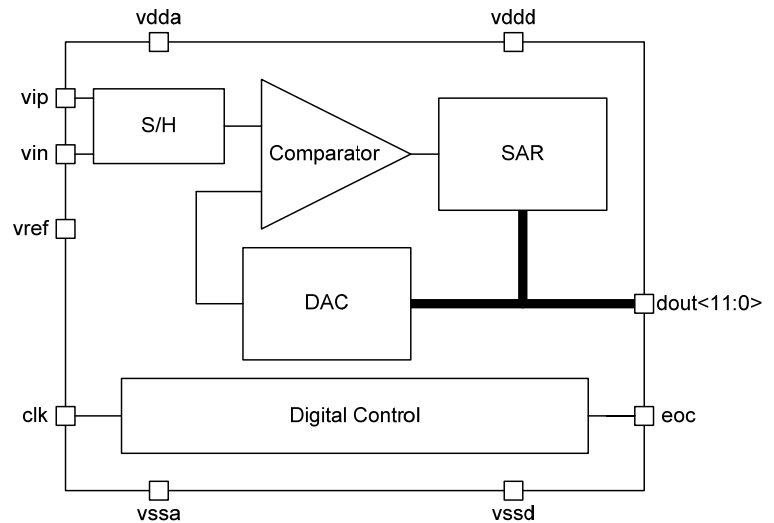
Features

- 12-bit accuracy: ± 1.0 LSB maximum DNL
- Input range of 0V to analog supply
- 3.3V analog supply, 1.8V digital supply
- Extended temperature range: -40°C to 125°C
- Dimensions: 335 μ m x 600 μ m (0.201mm²)

Applications

- Calibration & tuning functions
- Control loops
- Sensor interfaces

Block Diagram



Specifications

| Parameter | Conditions | Min | Typ | Max | Unit |
|----------------------------|------------|------|---------|---------------|------------------|
| Analog Supply Voltage | $\pm 10\%$ | 2.97 | 3.3 | 3.63 | V |
| Digital Supply Voltage | $\pm 10\%$ | 1.62 | 1.8 | 1.98 | V |
| Temperature Range | | -40 | 27 | 125 | °C |
| Monotonicity | | 12 | | | Bits |
| Resolution | | 12 | | | Bits |
| Differential Non-Linearity | | | | ± 1 | LSB |
| Integral Non-Linearity | | | ± 1 | ± 2 | LSB |
| Offset Error | | | | ± 4 | LSB |
| Gain Error | | | | ± 5 | LSB |
| Voltage Reference | | | | analog supply | V |
| Analog Input Range | | 0 | | analog supply | V |
| Operation Current | | | 500 | 1000 | μ A |
| Standby Current | | | 100 | | μ A |
| Clock Period (Tclk) | | | 500 | | ns |
| Conversion Time | | | 14 | | T _{CLK} |
| Sample Time | | | 4 | | T _{CLK} |
| Input Bandwidth | | 100 | | | ksps |

For more information about all of products, please visit our website at

www.hexiussemi.com