LinearDimensions SEMICONDUCTOR

LND2907HT

10-Bit Successive Approximation Register Analog-to-Digital Converter with Extended Temperature Range

GENERAL DESCRIPTION

The LND2907HT is a 10-bit Successive Approximation Register (SAR) analog-to-digital converters (ADC) which is designed to operate from a single-ended supply of 3.3V and can withstand temperatures up to 200°C.

The LND2907HT provides a front-end interface for high temperature sensor applications including LVDTs and Resolvers.

The LND2907HT is built using a temperature insensitive Digital-to-Analog Converter (DAC), Comparator, Successive Approximation Register (SAR) and a Sample and Hold circuit.

The analog input range to the SAR ADC can vary from V_{SS} to V_{DD}. The ADC normally remains in a shutdown mode, powering up only for the conversions. This process of conversion is controlled by an external command than comes from the processor and this results in a lot of power saving.

All the bias voltages required for proper functioning of various internal components are generated inside the chip which eliminates the use of external voltage references.

The LND2907HT provides a serial interface which is compatible with SPI and hence makes it a good choice of ADC for many applications.

The LND2907HT is available in a 14-pin DIP package, and is specified over the temperature range of 27°C to 200°C.

FEATURES

- Provides frond-end interface for LVDTs and Resolvers
- On-chip Bias Voltage References
- Compatible with standard interfaces like SPI
- Operating temperature range of 27°C to 200°C
- Sampling Rate of 1MHz
- Maximum power dissipation of 5 mW under a supply voltage of 3.3V
- 14-pin (2mm × 3mm) DIP package
- Guaranteed Monotonicity and Linearity over temperature

APPLICATIONS

- LVDT & Resolver Front-End Interface
- Digital Signal Processing
- Industrial Process Control
- Battery Powered Systems

PRODUCT HIGHLIGHTS

- Temperature insensitive operation up to 200°C Digital Signal Processing
- SPI compatible serial interface
- Bias voltages derived inside the chip