



## **18-Bit, 8-Channel Multiplexed SAR ADC with Independently Configurable Input Ranges**

MILPITAS, CA – February 22, 2016 – Linear Technology Corporation introduces the [LTC2335-18](#), an 18-bit, 8-channel 1MSPS multiplexed input successive approximation register (SAR) ADC with independently configurable input ranges. Each SoftSpan™ input can be software configured on a conversion-by-conversion basis to accept  $\pm 10.24\text{V}$ ,  $0\text{V}$  to  $10.24\text{V}$ ,  $\pm 5.12\text{V}$  or  $0\text{V}$  to  $5.12\text{V}$  true bipolar input signals. The on-chip sequencer allows the LTC2335-18 to be programmed to cycle through a sequence of channels and ranges without further user intervention. The differential analog inputs operate over a wide  $-16.5\text{V}$  to  $34\text{V}$  input common mode range, allowing the ADC to directly digitize a variety of signals to simplify signal-chain design. The input signal flexibility, combined with unrivaled 96.7dB SNR and 1MSPS throughput, makes the LTC2335-18 ideal for high performance industrial process control, test and measurement, power line monitoring and instrumentation applications.

The LTC2335-18 features a precision internal reference with 20ppm/°C maximum temperature coefficient and an integrated reference buffer capable of accurate one-shot measurements, providing space savings in densely packed circuit boards. Optionally, an external 5V reference may be used to expand the analog input range to  $\pm 12.5\text{V}$ . The device dissipates 180mW when converting at 1MSPS, and features nap and power-down modes to reduce power dissipation at slower throughputs.

The LTC2335-18 features pin-selectable SPI CMOS and LVDS serial interfaces. The wide digital output supply range allows the device to communicate with any CMOS logic between 1.8V and 5V. The serial LVDS mode offers low noise, high speed communications over greater distances using differential signaling. Together, these I/O interface options enable the LTC2335-18 to communicate equally well with legacy microcontrollers and modern FPGAs.

The LTC2335-18 joins a high performance family of multichannel 18-/16-bit SAR ADCs with true bipolar  $\pm 10.24\text{V}$  simultaneous sampling inputs ([LTC2348](#)). All specifications are

guaranteed over the extended  $-40^{\circ}\text{C}$  to  $125^{\circ}\text{C}$  temperature range. The LTC2335-18 is available now in a 48-lead, 7mm x 7mm LQFP package and is priced starting at \$18.95 each in 1,000-piece quantities. Samples and demo boards may be requested by visiting [www.linear.com/product/LTC2335-18](http://www.linear.com/product/LTC2335-18) or by contacting your local Linear Technology sales office.


**Photo Caption:** True Bipolar SAR ADC with Wide Input Common Mode Range

### Summary of Features: LTC2335-18

- 1Msps Throughput
- Eight Multiplexed Inputs Channels
- $\pm 3\text{LSB}$  INL (Maximum,  $\pm 10.24\text{V}$  Range)
- Guaranteed 18-Bit, No Missing Codes
- Differential, Wide Common Mode Range Inputs
- Per-Channel SoftSpan Input Ranges:
  - o  $\pm 10.24\text{V}$ ,  $0\text{V}$  to  $10.24\text{V}$ ,  $\pm 5.12\text{V}$ ,  $0\text{V}$  to  $5.12\text{V}$
  - o  $\pm 12.5\text{V}$ ,  $0\text{V}$  to  $12.5\text{V}$ ,  $\pm 6.25\text{V}$ ,  $0\text{V}$  to  $6.25\text{V}$
- 96.7dB Single-Conversion SNR (Typical)
- Integrated Reference & Buffer
- 2.5V to 5V External Reference Input Range
- Programmable Sequencer with No-Latency Control
- SPI CMOS (1.8V to 5V) & LVDS Serial I/O
- 180mW Power Dissipation (Typical)
- 48-Lead 7mm x 7mm LQFP Package

## About Linear Technology

Linear Technology Corporation, a member of the S&P 500, has been designing, manufacturing and marketing a broad line of high performance analog integrated circuits for major companies worldwide for over three decades. The Company's products provide an essential bridge between our analog world and the digital electronics in communications, networking, industrial, automotive, computer, medical, instrumentation, consumer, and military and aerospace systems. Linear Technology produces power management, data conversion, signal conditioning, RF and interface ICs,  $\mu$ Module<sup>®</sup> subsystems, and wireless sensor network products. For more information, visit [www.linear.com](http://www.linear.com)

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