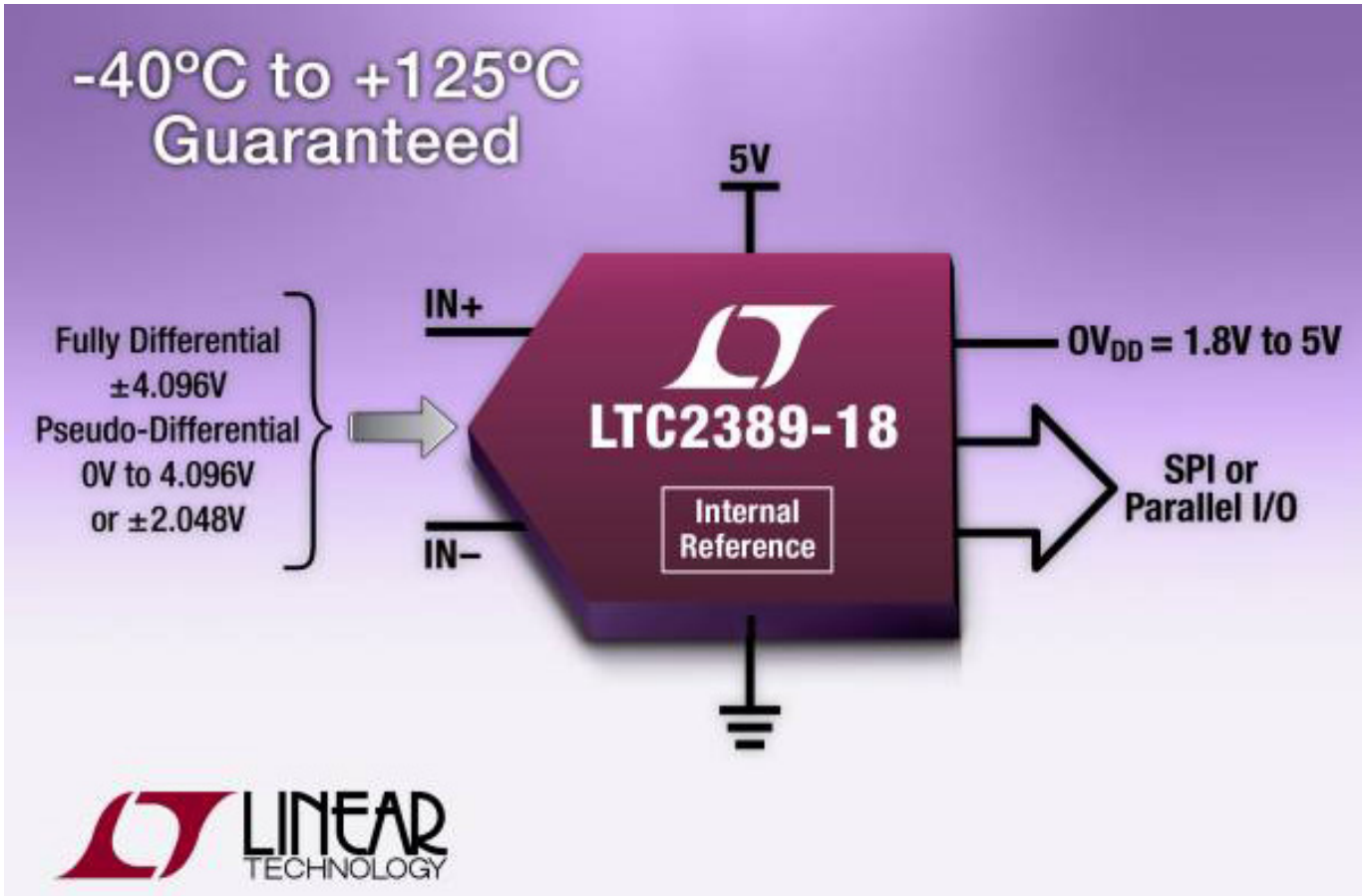
18-Bit, 2.5Msps no latency SAR ADC achieves 99.8dB SNR with flexible analog input ranges

Linear Technology Corporation introduces the LTC2389-18 [1], the industry's fastest 18-bit no cycle latency SAR ADC (analog-to-digital converter). The LTC2389-18 achieves unrivaled 99.8dB SNR and -116dB THD at sample rates up to 2.5Msps. Operating from a single 5V supply, the LTC2389-18 supports three pin-configurable analog input ranges, easily interfacing to multiple signal chains with a single device. For the highest SNR performance, the LTC2389-18 can be configured for fully differential (±4.096V) inputs. The pseudo-differential unipolar (0V to 4.096V) and bipolar (±2.048V) analog input ranges enable lower power single-ended drive and benefit from the reduction of unwanted signals common to both inputs. The LTC2389-18 is well suited for demanding designs that require maximum signal swings at low power levels in noisy industrial environments.



The LTC2389-18 features equally impressive DC performance, featuring ±3LSB INL (max), ±10LSB offset error and 18 bits no missing codes resolution. The LTC2389-18 also features a 4.096V precision internal reference with a 20ppm/°C (max) temperature coefficient, providing space savings for high density designs. The LTC2389-18 dissipates 162.5mW at 2.5Msps and features a shutdown mode

that reduces power dissipation to 75µW when not converting. The true no latency operation enables accurate one shot measurements even after lengthy idle periods with no minimum sample rate requirement. The LTC2389-18 provides a flexible digital interface supporting 2.5Msps throughput with parallel interface and 1.9Msps throughput with serial SPI interface at I/O voltages from 1.8V to 5V.

The LTC2389-18 is the first in a family of pin- and software-compatible 18-/16-bit high performance, SAR ADCs with speeds ranging from 250ksps to 2.5Msps. Specifications are guaranteed over the -4°C to 125°C temperature range and the devices are available in 48-pin 7mmx7mm LQFP and QFN packages. The LTC2389-16 and LTC2389-18 are priced respectively at $30.31 and $33.90 each in 1,000 piece quantities. The DC1826A, the associated demonstration board to evaluate the LTC2389-18, is available at www.linear.com [2] or via a local Linear Technology sales office. For more information, visit www.linear.com/product/LTC2389 [3].

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http://www.ecnmag.com/product-releases/2012/04/18-bit-25msps-no-latency-sar-adc-achieves-998db-snr-flexible-analog-input-ranges?qt-video_of_the_day=0

Links:
[1] http://r20.rs6.net/tn.jsp?e=001ODP1LdeKhXEbni-kg7moZ-DGlfJkAGuUKjpw4SpZKpJcLHbXtzft3FuVjFPLImKOJ8RiLal5NaikjcRSxPd7Qu8OwldyaF_YaFXapg1e2QV7SNLM5pY4nhjUE7abXk8Qghc6xLjRIPg=
[2] http://r20.rs6.net/tn.jsp?e=001ODP1LdeKhXFCh8jvre7x6OunwB8oAtN2RXlZBhVfK4zfwknFB1OfzByGph0mrCMPV9zcBxLrc3-x9GU-0kNU6xEC7LCHkTgkT8JPsjHN_zA=
[3] http://r20.rs6.net/tn.jsp?e=001ODP1LdeKhXGfDfRumzzSb0Yzu4NycV7K9UsCSC2Z79V1q104NxQ-BhhhSjHXWjp_A22A8vXVznAuk3jlEW1TYt_6vWvKwbtHQ4pFeruP3EP1oizLyCzvw32293DZJRq0SkOMWq8AH1k=