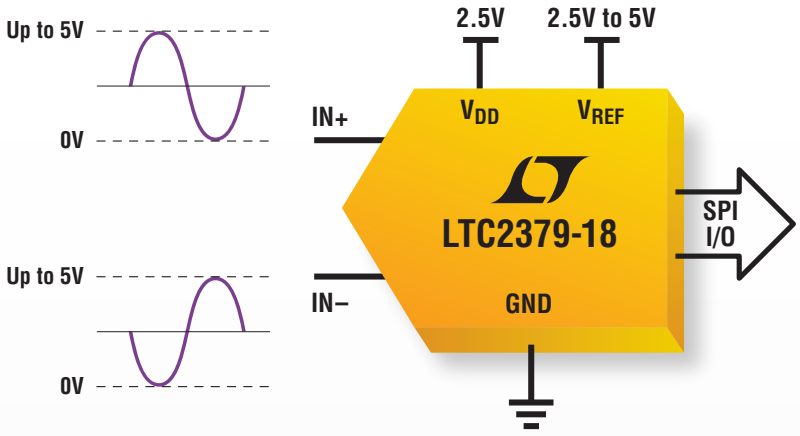
18-Bit 1.6Msps SAR ADC 101dB SNR

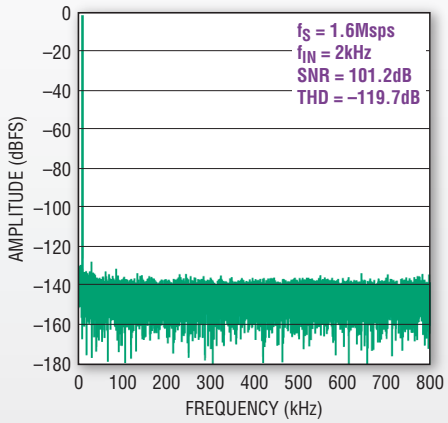


Unrivaled Performance at Only 18mW

The LTC®2379-18 leads a pin-compatible family of no-latency SAR ADCs featuring unrivaled 101dB SNR at 18-bits and 96dB SNR at 16-bits from 250ksps to 2Msps. Explicit Busy and Chain pins, along with a user-friendly SPI interface, simplify digital timing. A unique digital gain compression feature eliminates the need for a negative ADC driver supply while preserving the full resolution of the ADC, dramatically lowering the total power consumption of the signal chain.

Features

- 1.6Msps Throughput Rate
- 101.2dB SNR (Typ) at f_{IN} = 2kHz
- ±2LSB INL (Max), ±0.9LSB DNL (Max)
- 120dB THD (Typ) at f_{IN} = 2kHz
- Low Power: 18mW at 1.6Msps, 18µW at 1.6ksps
- Power Down Mode: 2.25µW
- Fully Differential Input Range ±V_{REF}
- Digital Gain Compression Eliminates Negative Rails
- –40°C to 125°C Guaranteed Temperature Range
- 16-pin MSOP and 4mm × 3mm DFN Packages

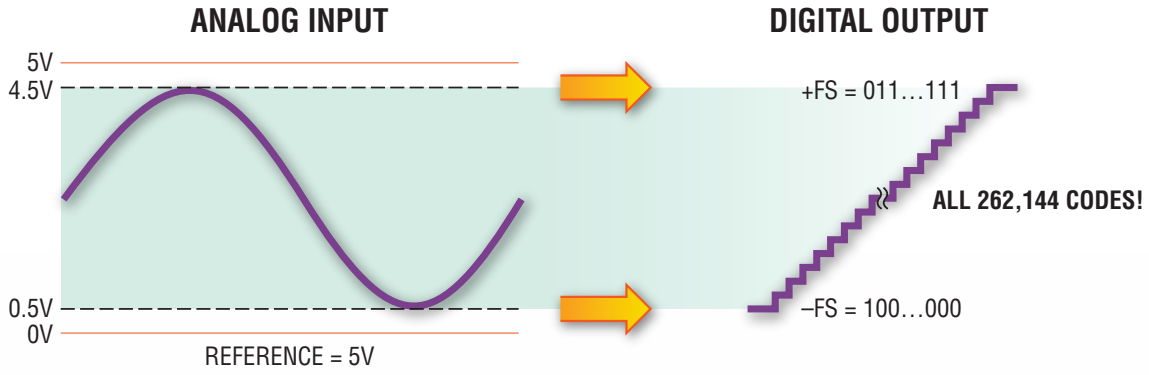


Complete 18-Bit/16-Bit Pin-Compatible SAR ADC Family

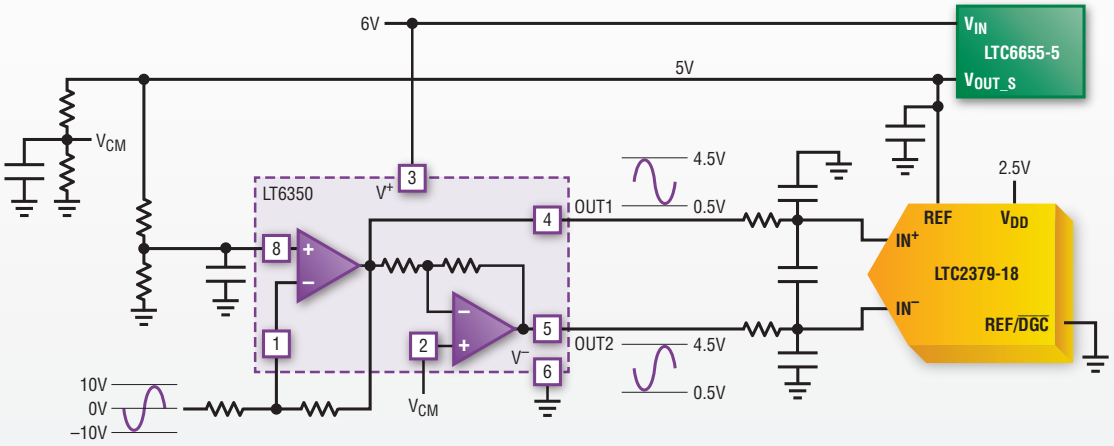
	250ksps	500ksps	1Msps	1.6Msps	2Msps
18-Bit 101dB SNR	2376-18	2377-18	2378-18	2379-18	
16-Bit 96dB SNR	2376-16	2377-16	2378-16		2380-16
Power Consumption	3.4mW	6.75mW	13.5mW	18mW	19mW

LINEAR TECHNOLOGY

Digital Gain Compression



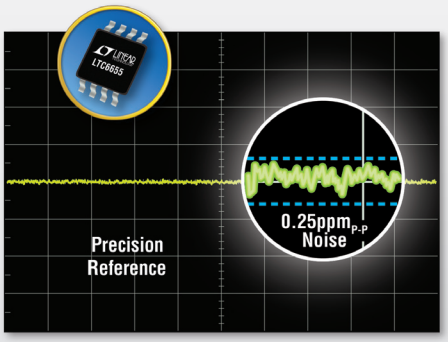
The LTC2379-18 family offers an innovative Digital Gain Compression (DGC) feature which eliminates the driver amplifier's negative supply while preserving the full resolution of the ADC. When enabled, the ADC performs a digital scaling function that maps zero-scale code from 0V to 0.1 • V_{REF} and full-scale code from V_{REF} to 0.9 • V_{REF}, allowing the amplifier to operate from a single positive supply. The elimination of the negative supply dramatically reduces the total power consumption of the signal chain and reduces component count while simplifying the design.



LTC6655 Voltage Reference

Features

- Low Noise: 0.25ppm$_{P-P}$ (0.1Hz to 10Hz)
  1.25µV$_{P-P}$ for the LTC6655-5
- Low Drift: 2ppm/°C Max
- High Accuracy: ±0.025% Max
- Sinks and Sources Current: ±5mA
- Fully Specified from –40°C to 125°C
- Available Output Voltages: 1.25V, 2.048V, 2.5V, 3V, 3.3V, 4.096V, 5V
- Available in an 8-Lead MSOP Package



The LTC®6655 is an ultra-stable very low noise voltage reference, with only 1.25µV$_{P-P}$ noise (0.1Hz to 10Hz), temperature drift less than 2ppm/°C, and initial voltage accuracy within ±0.025%. It can be powered from as little as 500mV above the output voltage, up to a maximum supply voltage of 13.2V. A shutdown mode allows the power consumption to be reduced to less than 20µA. The combination of extreme precision and high temperature operating range make the LTC6655 an ideal voltage reference for the most demanding automotive, industrial and instrumentation applications.