18-Bit, 2.5Msps SAR ADC 100dB SNR

Pseudo-Differential Unipolar 0V to 4.096V

4.096V

0V

IN+

IN−

Fully Differential ±4.096V

4.096V

0V

IN+

4.096V

0V

IN−

Pseudo-Differential Bipolar ±2.048V

4.096V

0V

IN+

2.048V

IN−

Pin-Configurable Input Range

5V

IN+

IN−

LTC2389-18

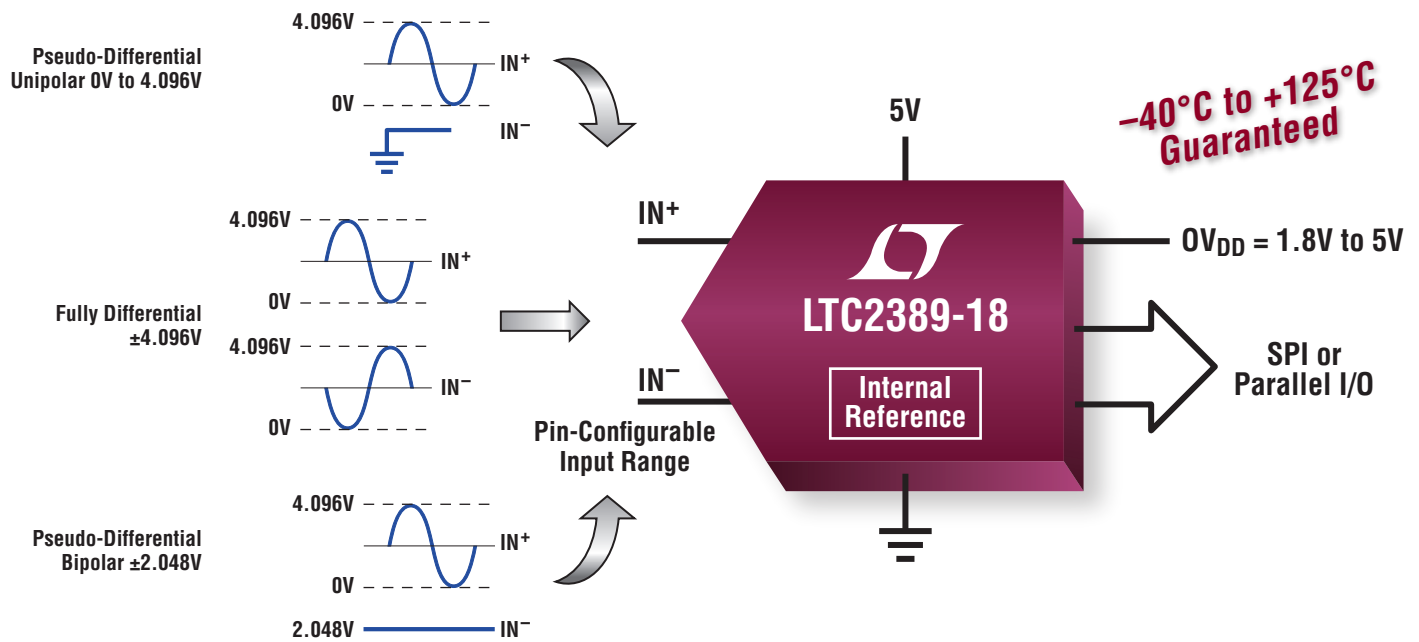Internal Reference

−40°C to +125°C Guaranteed

OV_{DD} = 1.8V to 5V

SPI or Parallel I/O

Pin-Configurable Fully Differential or Pseudo-Differential Input Range

Features

- 18-Bit/16-Bit No Latency, 2.5Msps Pin- and Timing-Compatible SAR ADCs
- Wide ±4.096V Fully Differential Inputs Maximize Dynamic Range to Achieve 100dB SNR Performance
- Pin-Configurable Input Ranges ±4.096V, ±2.048V or 0V to 4.096V Allow Flexibility in the Input Signal Chain
- Precision DC Specifications Feature ±3LSB INL (Max) and 18 Bits No Missing Codes Resolution
- Precision 20ppm/°C (Max) Internal Reference and Reference Buffer Reduce External Components and Save Board Space
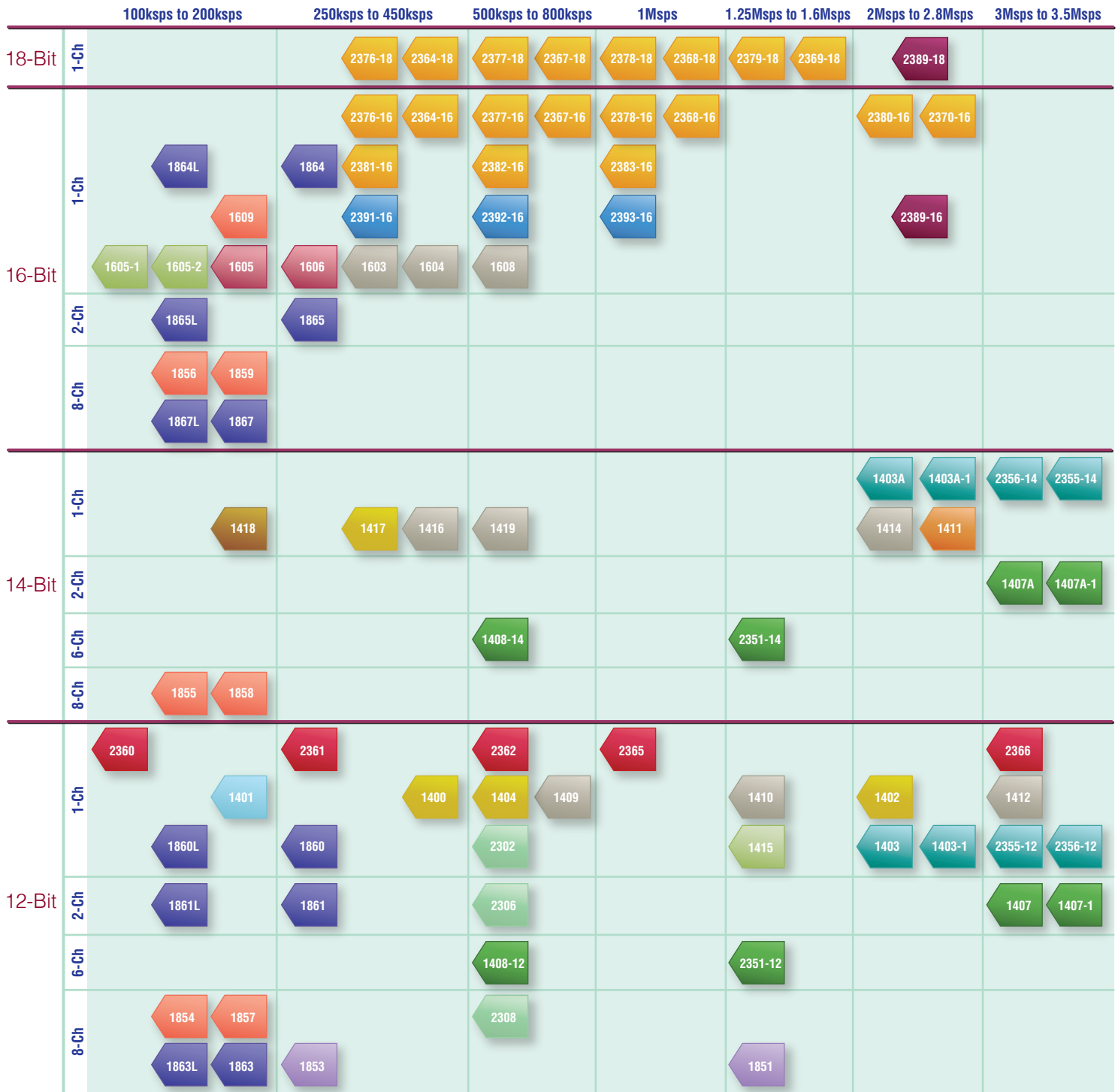
18-Bit/16-Bit Pin-Compatible Serial/Parallel I/O SAR ADCs

	2.5Msps	SNR	Power Consumption	Packages
18-Bit	2389-18	100dB	162.5mW	48-Pin 7mm × 7mm LQFP and QFN
16-Bit	2389-16	96dB	162.5mW	

General Purpose SAR ADCs

12-Bit to 18-Bit Resolution, 100ksps Up to 3.5Msps

		100ksps to 200ksps	250ksps to 450ksps	500ksps to 800ksps	1Msps	1.25Msps to 1.6Msps	2Msps to 2.8Msps	3Msps to 3.5Msps
18-Bit	1-Ch		2376-18 2364-18	2377-18 2367-18	2378-18 2368-18	2379-18 2369-18	2389-18	
16-Bit	1-Ch	1864L	1864 2381-16	2376-16 2364-16	2377-16 2367-16	2378-16 2368-16	2380-16 2370-16	
		1609	2391-16	2382-16	2383-16		2389-16	
		1605-1 1605-2 1605	1606	2392-16	2393-16			
				1603 1604	1608			
	2-Ch	1865L	1865					
	8-Ch	1856 1859						
		1867L 1867						
14-Bit	1-Ch						1403A 1403A-1	2356-14 2355-14
		1418	1417 1416	1419			1414 1411	
	2-Ch							1407A 1407A-1
	6-Ch			1408-14		2351-14		
	8-Ch	1855 1858						
12-Bit	1-Ch	2360	2361	2362	2365			2366
		1401	1400	1404 1409		1410	1402	1412
		1860L	1860	2302		1415	1403 1403-1	2355-12 2356-12
	2-Ch	1861L	1861	2306				1407 1407-1
	6-Ch			1408-12		2351-12		
	8-Ch	1854 1857		2308				
		1863L 1863	1853			1851		

Legend

Serial
- 16- and 18-Bit 250ksps to 2Msps Pin-Compatible ADCs
- 5V SPI ADCs in Tiny DFN/QFN
- 0V to 2.5V, ±1.25V Unipolar/Bipolar Input ADCs in MSOP-10
- 3V Pin-Compatible ADCs in TSOT-6/TSOT-8 Packages
- 0V to 4V, ±2V Unipolar/Bipolar Inputs with 5V, ±5V Supply
- Simultaneous Sampling ADCs
- ±10V Bipolar Input ADCs
- 0V to 2.048V Input, ADC in SO-8
- 3V/5V µPower ADCs

Serial/Parallel
- Pseudo- or Fully Differential Pin-Compatible ADCs
- Fully Differential Pin-Compatible ADCs
- 0V to 4.096V, ±2.048V Unipolar/Bipolar Inputs with 5V or ±5V Supply

Parallel
- Bipolar ±10V Input ADCs
- 3V/5V µPower ADCs
- 0V to 4V, ±4V Unipolar/Bipolar Inputs with Single ±5V Supply
- ±2.5V Bipolar Inputs with Single ±5V Supply
- ±1.8V SoftSpan™ Input with 5V Supply