

# Capacitive Sensor interface IC

The MAS6513 capacitive sensor interface IC can interface both single and dual capacitance sensors.

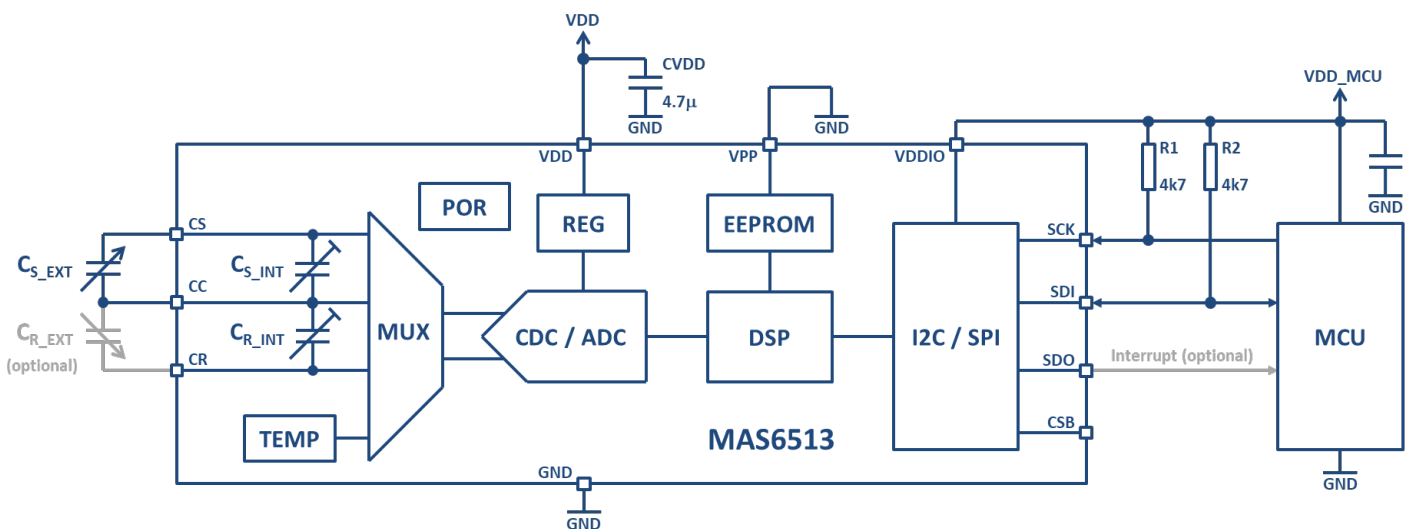
It uses a 24-bit Capacitance-to-Digital Converter (CDC), which employs a delta-sigma ( $\Delta\Sigma$ ) conversion technique. The output data from the high order  $\Delta\Sigma$ -modulator is processed by an on-chip decimator filter, producing a high resolution conversion result. The converter is run by an internal clock oscillator making an external converter clock unnecessary.

The IC is designed especially to meet the requirement for low power consumption, thus making it an ideal choice for battery powered systems. Overall current consumption values down to 0.65  $\mu\text{A}$  (one temperature and capacitance A/D conversion in a second) can be achieved depending on selected resolution setting.

The built-in 24-bit DSP block includes IIR filter options and a calculation engine which performs calculation of calibrated and temperature compensated sensor and temperature readings.

## Features

- ◆ Sensor Offset and Gain Adjustment
- ◆ 24-bit ratiometric CDC/ADC
- ◆ 24-bit compensation calculation
- ◆ IIR Filter for T- and C-Signals
- ◆ Current consumption down to 0.65 $\mu\text{A}$
- ◆ 15aF rms input noise
- ◆ Internal Clock Oscillator
- ◆ On Chip Temperature Sensor -40°C to 125°C
- ◆ Small DFN-12 package
- ◆ I2C and SPI Compatible Serial Interface



## Applications

- ◆ Capacitive Pressure Sensors
- ◆ Humidity Sensors
- ◆ Medical Devices
- ◆ Sport Watches
- ◆ Altimeter and Barometer Systems
- ◆ Mobile and Battery Powered Systems
- ◆ Low Frequency Measurement applications
- ◆ Current/Power Consumption Critical Systems
- ◆ Industrial and Process Control applications
- ◆ Flow Meters