

# AS8579

## Accurate Capacitive Presence Sensing

### 1 General Description

The AS8579 is a capacitive sensor that detects the change of capacity in different applications. The capacitive sensor measures the impedance that originates between a conducting surface (metallic object) and a human being. The IC captures the current of a metal object and applies algorithms to determine the capacitive and resistive information. The outcome information can be read through a SPI Interface that can be also used for IC configuration. This high precision performance sensor also supports a multitude of diagnostic features that meet standard functional safety requirements. The capacitive sensing IC is specifically designed to function in an electro-magnetic environment (EMC) with high magnetic disturbances. This allows the sensor to distinguish in a hands-on application if the driver's hand is on the steering wheel or not. The AS8579 is available in an SSOP24 package and operates at a supply voltage of 5 V.

### 2 Key Features

**Figure 1:**  
Added Value of Using AS8579

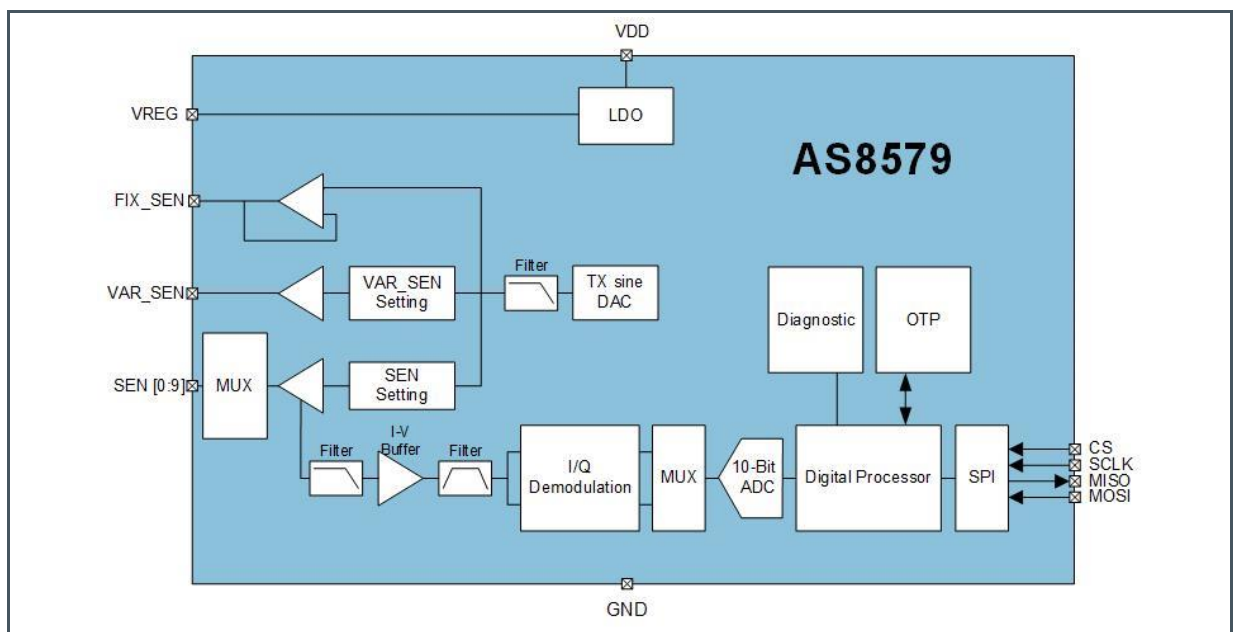
| Benefits   | Features  |
|--|---|
| Accurate capacitive measurement (separation of resistive and capacitive information) | I/Q-Signal demodulation   |
| Higher durability and lower system costs   | Up to 10 independent measurement lines possible (10 SEN lines)        |
| Enabler for safety critical applications   | VAR&FIX_SEN function to avoid parasitic influences from cable and PCB |
| Suitable for automotive applications   | Designed according functional safety standard                         |

## 3 Applications

- Autonomous driving applications e.g.: Hands on steering wheel detection
- Detection of any human presence exterior of vehicles e.g.: Automatic trunk opener (trunk opens automatically and touch-less by detection of human foot near the sensor only)
- Fluid Level Measurement
- Seat occupancy

## 4 Block Diagram

Figure 2:  
Functional Blocks of AS8579



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