

# ENS170A



## Automotive-Grade Air Quality / Multi-Gas Sensor Array with High-Performance CPU and LIN Interface

- In-cabin / out cabin air quality detection
- Li-Ion battery condition monitoring & thermal runaway detection
- Built-in powerful CPU with LIN, I<sup>2</sup>C, SPI or PWM interface, including interrupt pin

# ENS170A

## Automotive-Grade Air Quality / Multi-Gas Sensor Array with High-Performance CPU

**Automotive-grade air quality / multi-gas sensor array with high-performance CPU and multiple interface options, including LIN and I<sup>2</sup>C.**

The ENS170A is an automotive-grade, micro-machined, multi-gas / air quality sensor ASIC with integrated Arm Cortex-M0 CPU. Besides detection of reducing and oxidizing gases it features superior processing power plus LIN-, I<sup>2</sup>C-, SPI- or PWM-slave interface. Its additional I<sup>2</sup>C-master renders control of further I<sup>2</sup>C slave devices, such as actuators or humidity and pressure sensors.

In such combo modules the ENS170A can function as main controller, thereby significantly contributing to total BOM cost reduction.

With its multi-gas sensor array the ENS170A is ideally suited for air quality applications, as well as Li-Ion battery condition monitoring and thermal runaway detection. Its small package allows tiniest automotive modules and qualifies for direct board integration in battery management systems and balancers of battery electric vehicles or stationary battery solutions.

### Features

- Gas sensor array to detect reducing and oxidizing gases, including volatile organic compounds
- Built-in Arm Cortex-M0 controller with 32k flash memory
- LIN, I<sup>2</sup>C, SPI or PWM slave interface including interrupt pin
- I<sup>2</sup>C master interface
- Customer-specific firmware

### Benefits

- Enabling tiniest automotive air quality & gas detection designs
- No additional host controller required
- Significantly reduced total BOM costs
- Control of further I<sup>2</sup>C devices at no additional cost
- Flexible, custom-designs

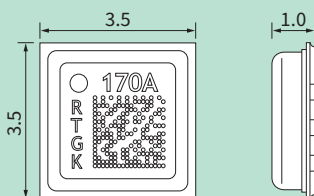
### Properties

- Automotive AEC-Q100 Level 2 / MSL 1 grade device
- Voltage range: 3.0 – 3.6V
- Standby current: 150µA
- 3.5 x 3.5 x 1.0mm<sup>3</sup> MIS package
- Tape & reel, reflow solderable

### Applications

- Automotive in-/out-cabin air quality detection
- Li-Ion battery condition monitoring & thermal runaway detection
- Multi-sensor combos (gas, temperature, humidity, pressure, ...) utilizing built-in controller

### Dimensions



### Block diagram

