

# Elmos Sensor Signal Processors

elmos<sup>®</sup>



## EXPERTS FOR AUTOMOTIVE ICs

**We have a broad expertise** in analog mixed-signal integrated circuit design.

**We deeply understand our customers** application needs to create real system innovation.

**We are a global player** for automotive ASSPs and ASICs. We offer worldwide sales and application support.



elmos<sup>®</sup>

## CORPORATE KEY FACTS

**~7** Elmos ICs

on average in every new car

**6** product segments

Motor Control, Lighting, Safety/Power/Custom ICs,  
Ranging, Optical, Sensor ICs

**15** locations worldwide

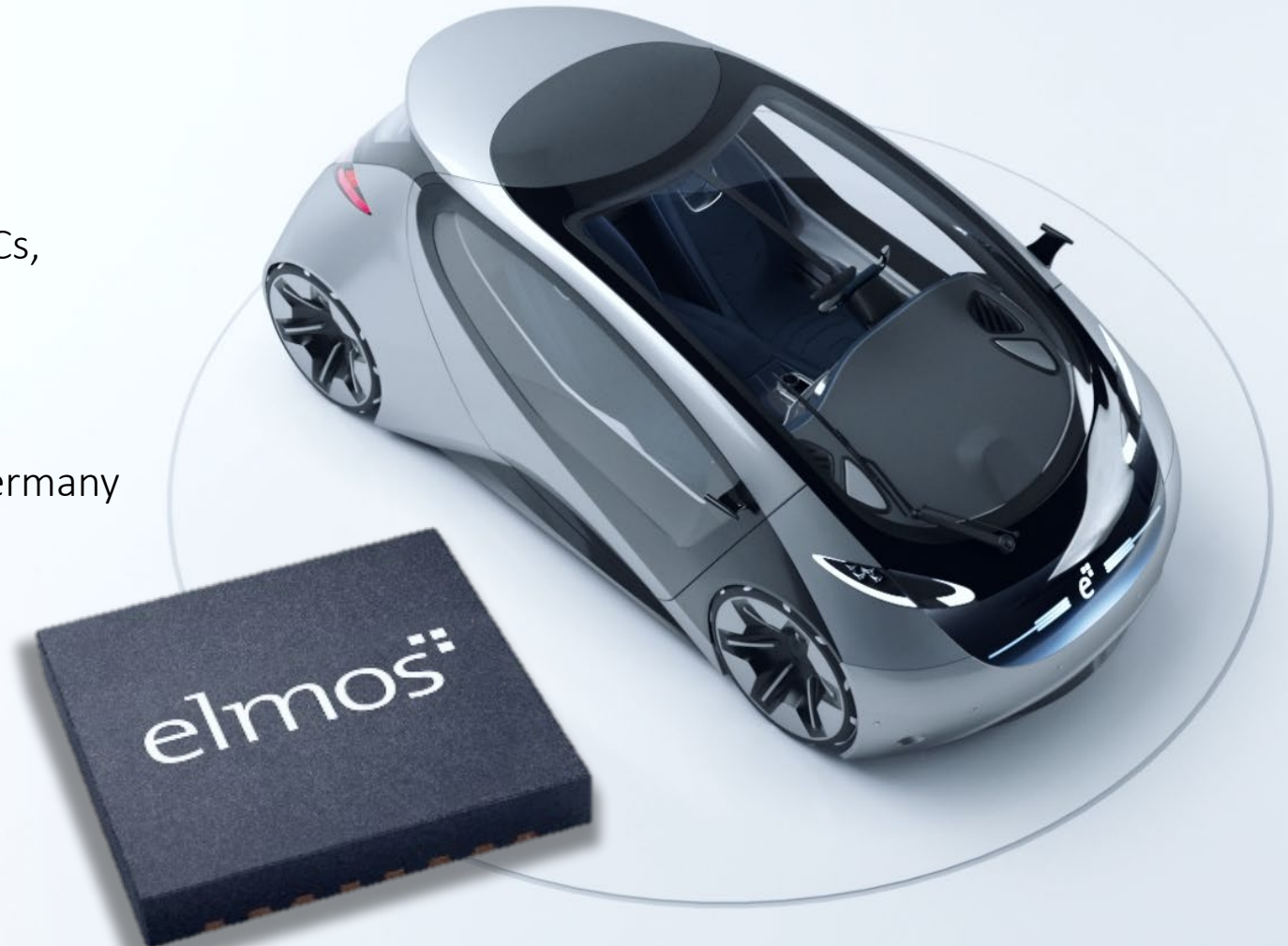
incl. 6 R&D centers, HQ located in Dortmund, Germany

**~40** years of experience

in analog mixed signal IC solutions

**1,200** employees

thereof 350+ product developers & engineers



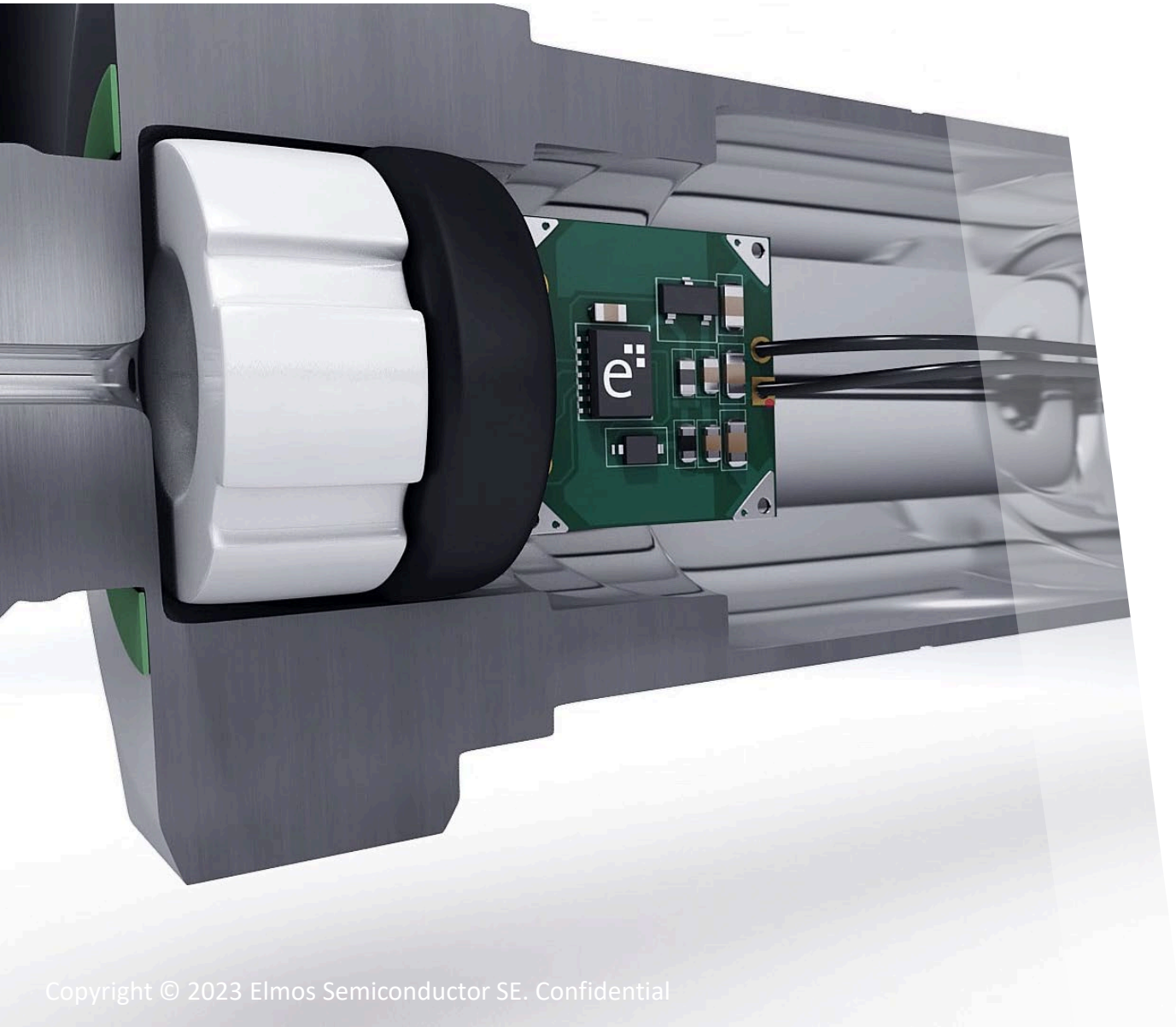
# WE ARE LOCATED ALL OVER THE WORLD



# PRODUCT SEGMENTS

- RANGING
- OPTICAL
- SENSOR ICs
- MOTOR CONTROL
- LIGHTING
- SAFETY, POWER & CUSTOM ICs





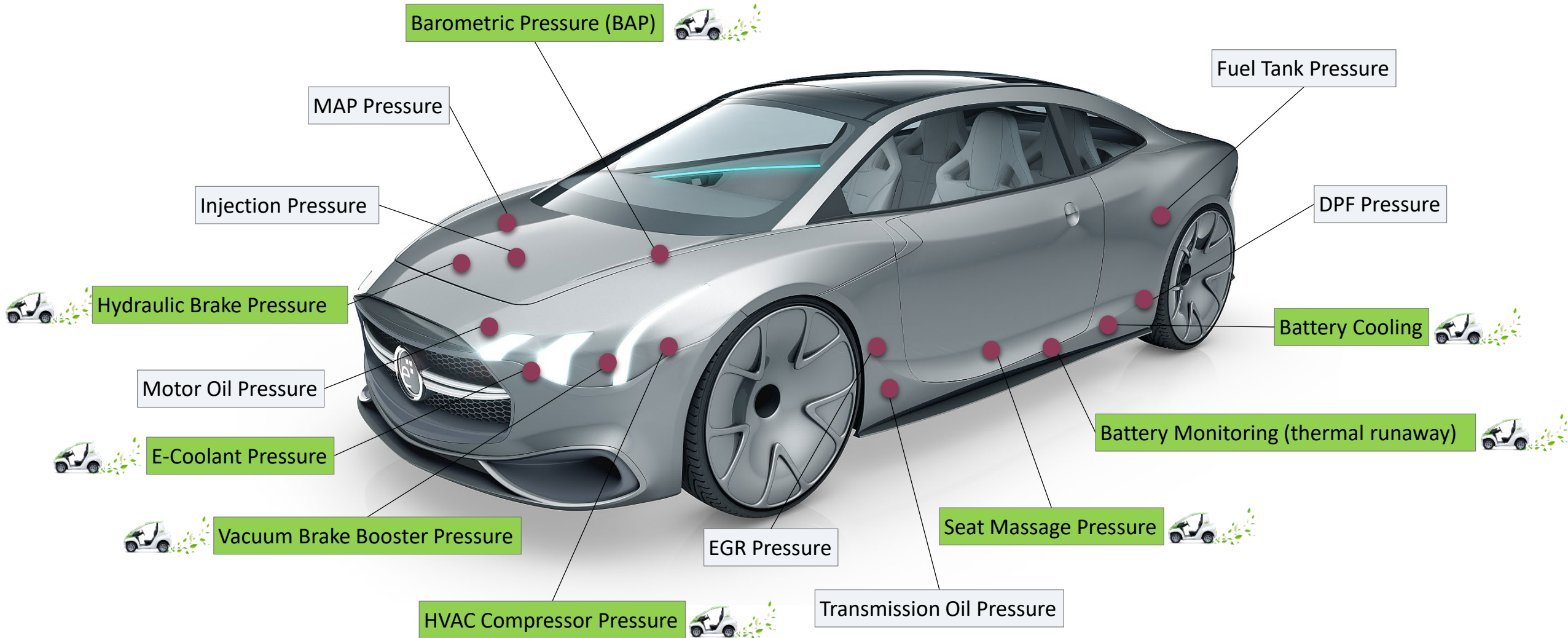
### BRIDGING THE PHYSICAL WORLD PRECISELY TO STANDARD ANALOG AND DIGITAL INTERFACES

- More than 25 years of experience in automotive and industrial sensing
- Benchmark IC solutions for sensing pressure, temperature, inductance, capacitance and magnetic field
- Portfolio of sensor signal processors
  - Supporting all standard sensor interfaces
  - Enabling functional safety applications
  - Lowest BOM cost at best performance

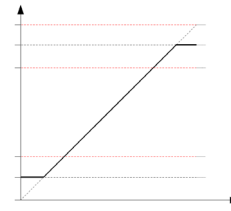
# TRANSFORMATION OF SENSOR APPLICATIONS BY ELECTRIFICATION



Current (combustion engine) and future (xEV) automotive application



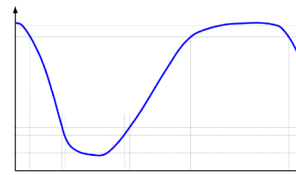
# AUTOMOTIVE PRESSURE SENSOR SIGNAL CONDITIONER



Analog Output Applications

## E520.42 – Analog Voltage Output

- 5V Analog Output (ratiometric)
- Fixed SENT Interface



Digital Output Applications

## E520.47 – Digital SENT Interface

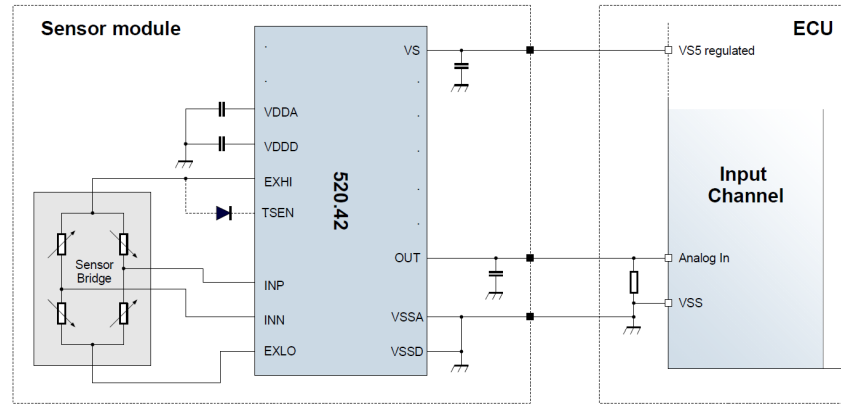
- Flexible SENT Configuration
- ASIL C support available
- Multiple Input Channels (P+T)



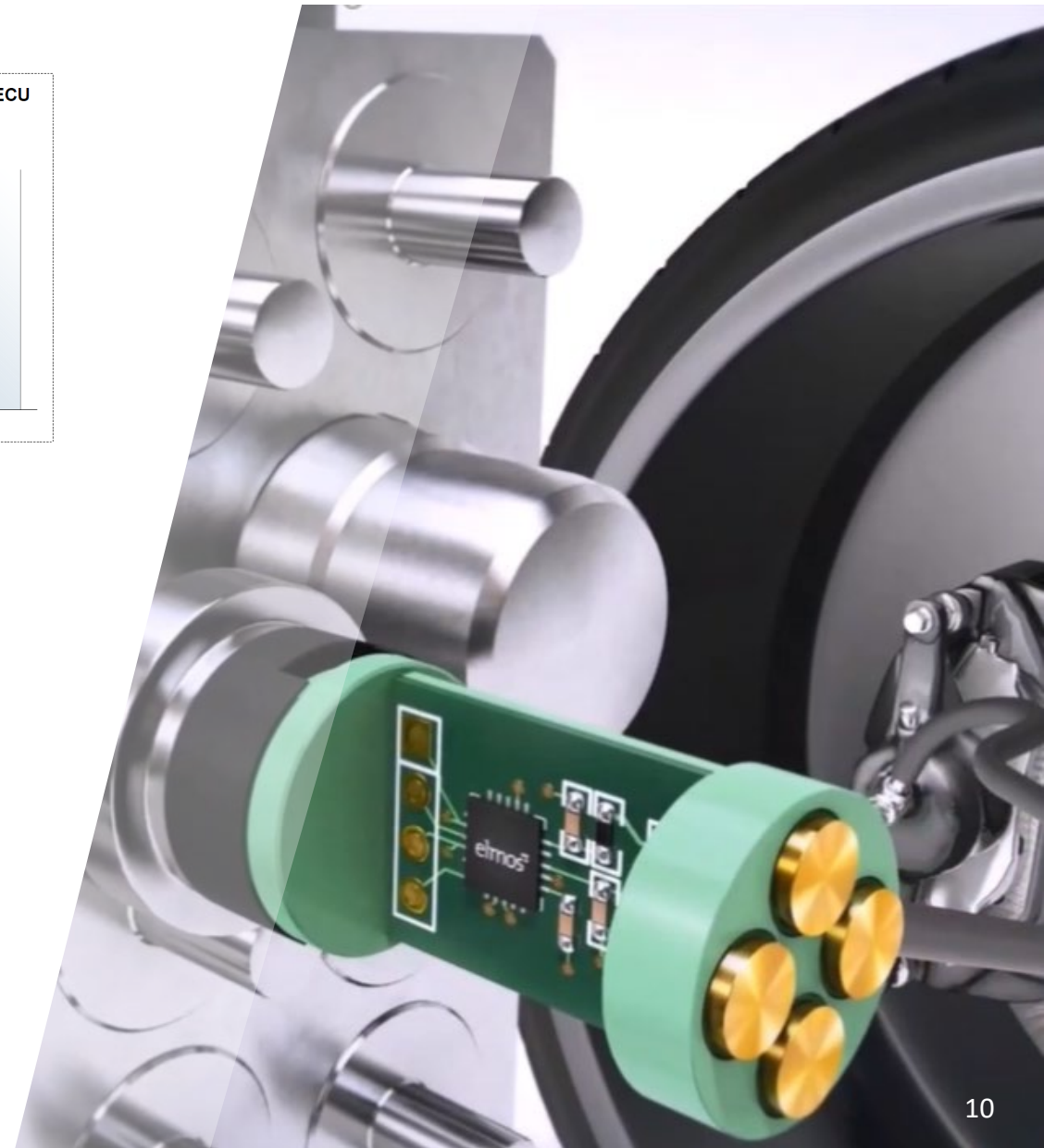
# ELMOS SENSOR ICS

IC Solutions for Pressure, Strain, Force

**E520.42**  
5V Ratiometric and Fixed SENT



- Very low noise front-end for low sensitivities
- Ratiometric analog Output (0 to 5V)
- Fixed SENT output
- External or internal temperature sensing with on-chip linearization
- One Wire Interface for calibration
- -40°C to 150°C
- QFN20L4 package

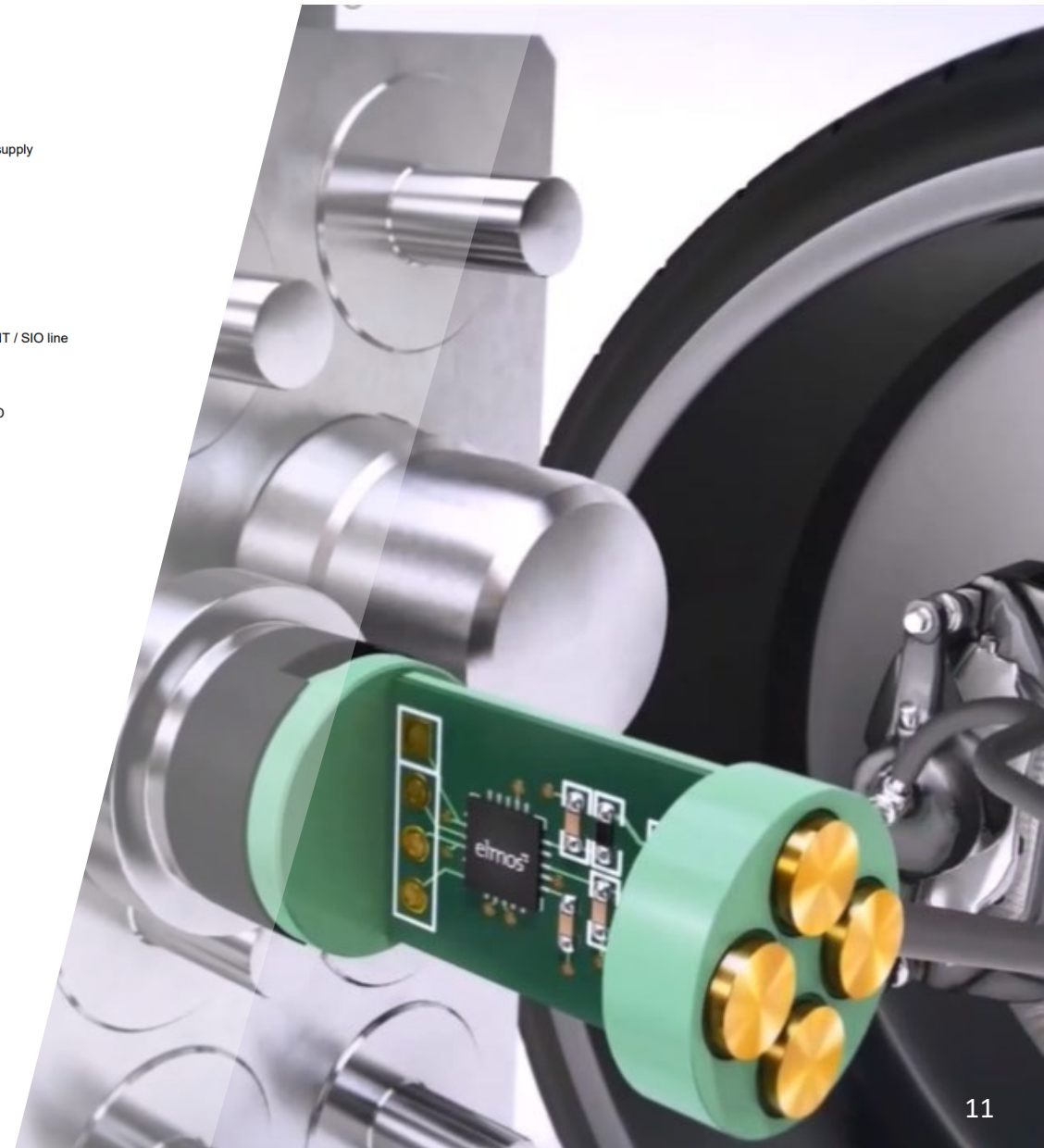
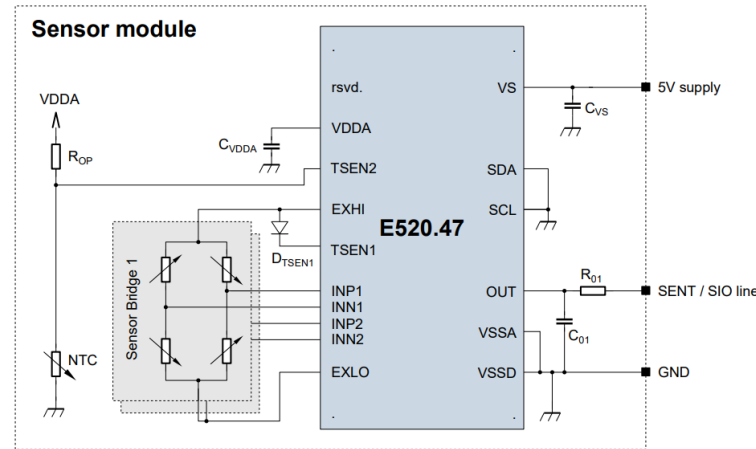


# ELMOS SENSOR ICS

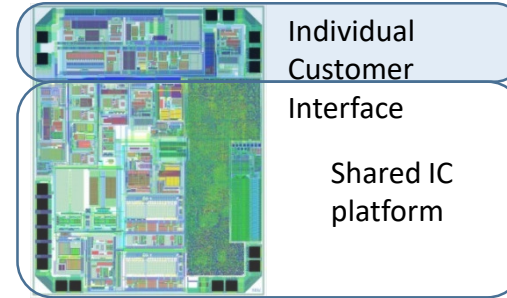
IC Solutions for Pressure, Strain, Force

**E520.47**  
Dual Bridge with SENT

- Configurable SENT output
- ISO26262 TSR acc. ASIL C
- 15bit Delta Sigma ADC
- Signal processing for two sensor bridges
- NTC channel with on-chip linearization
- One Wire Interface for calibration
- I<sup>2</sup>C Interface for customer access to sensor, diagnosis, calibration and configuration
- -40°C to 150°C
- QFN20L4 package
- Applications: ESC, FTPS, OPS, DPF, EGR, TPS,...

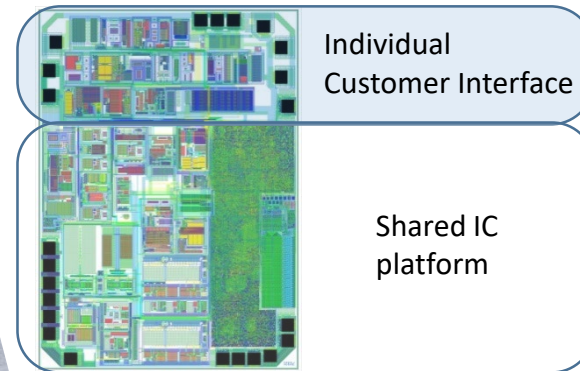


# INDUSTRIAL PRESSURE SENSOR SIGNAL CONDITIONER



## E703.11 – High Precision Low Voltage

- Digital SPI and I<sup>2</sup>C Interface
- 3V and 5V Analog Output



## E703.21 – Industrial Output SSP

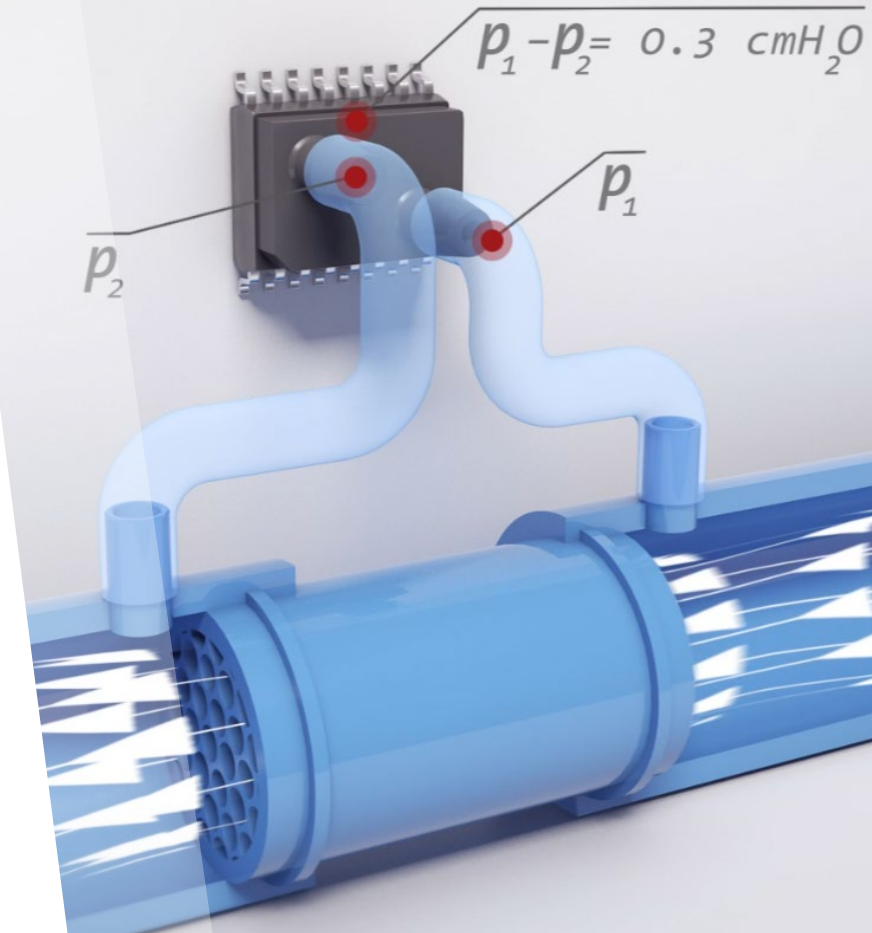
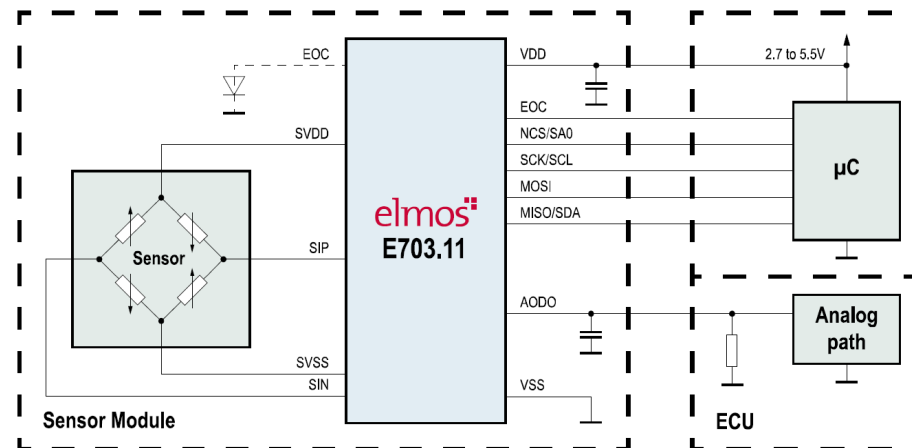
- 4...20mA and 0-10V Absolute Output
- 5V ratiometric Output
- Digital SPI and I<sup>2</sup>C Interface

# ELMOS SENSOR ICS

## Industrial Pressure Sensor Signal Conditioner

**E703.11**  
High Precision Low Voltage

- Configurable front-end input 2.6 mV/V to 63 mV/V
- Digital SPI, I<sup>2</sup>C, PWM, FM or 1-wire interface
- 3V and 5V Analog Output (ratiometric)
- Internal or external temperature sensors, including bridge current sensing
- Calibration via SPI, I<sup>2</sup>C or 1-wire interface
- Supply voltage 2.7V to 5.5V
- Sleep mode available  $I_q < 50\mu A$
- -40°C to 125°C
- DFN14 package

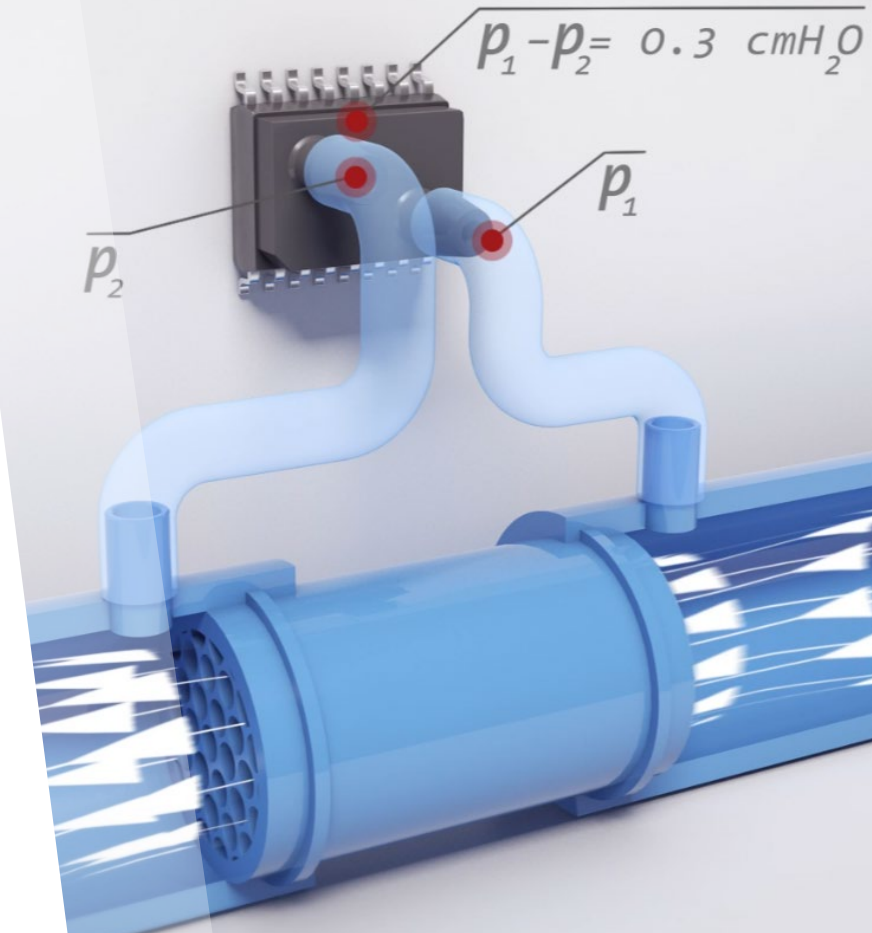
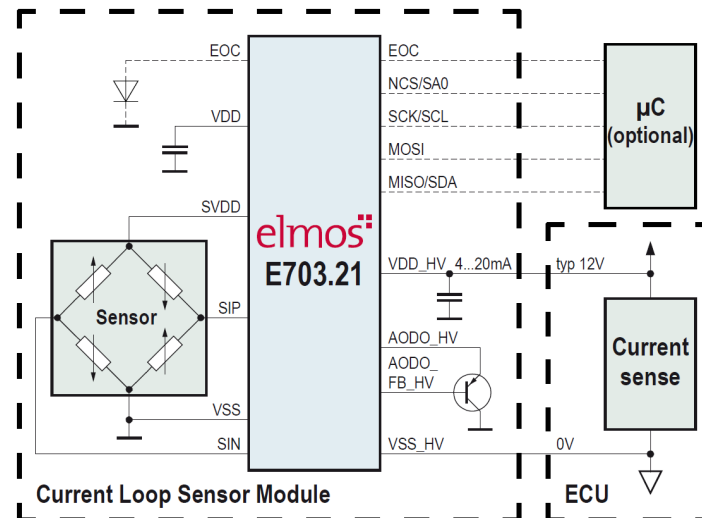


# ELMOS SENSOR ICS

## Industrial Pressure Sensor Signal Conditioner

**E703.21**  
Industrial Output SSP

- Configurable front-end input 2.6mV/V to 63 mV/V
- Digital SPI, I<sup>2</sup>C, PWM, FM or 1-wire interface
- 4...20mA and 0-10V Absolute Output
- 5V Analog Output (ratiometric)
- Internal or external temperature sensors, including bridge current sensing
- Supply voltage 4.5V to 32V
- Calibration via SPI, I<sup>2</sup>C or 1-wire interface
- -40°C to 125°C
- DFN14 package



# ELMOS SENSOR ICS

Integrated Absolute Pressure Sensors

## E524.71, 72, 73 - Low Voltage Series

- Digital SPI and I<sup>2</sup>C Interface
- 3V and 5V Analog Output (ratiometric)



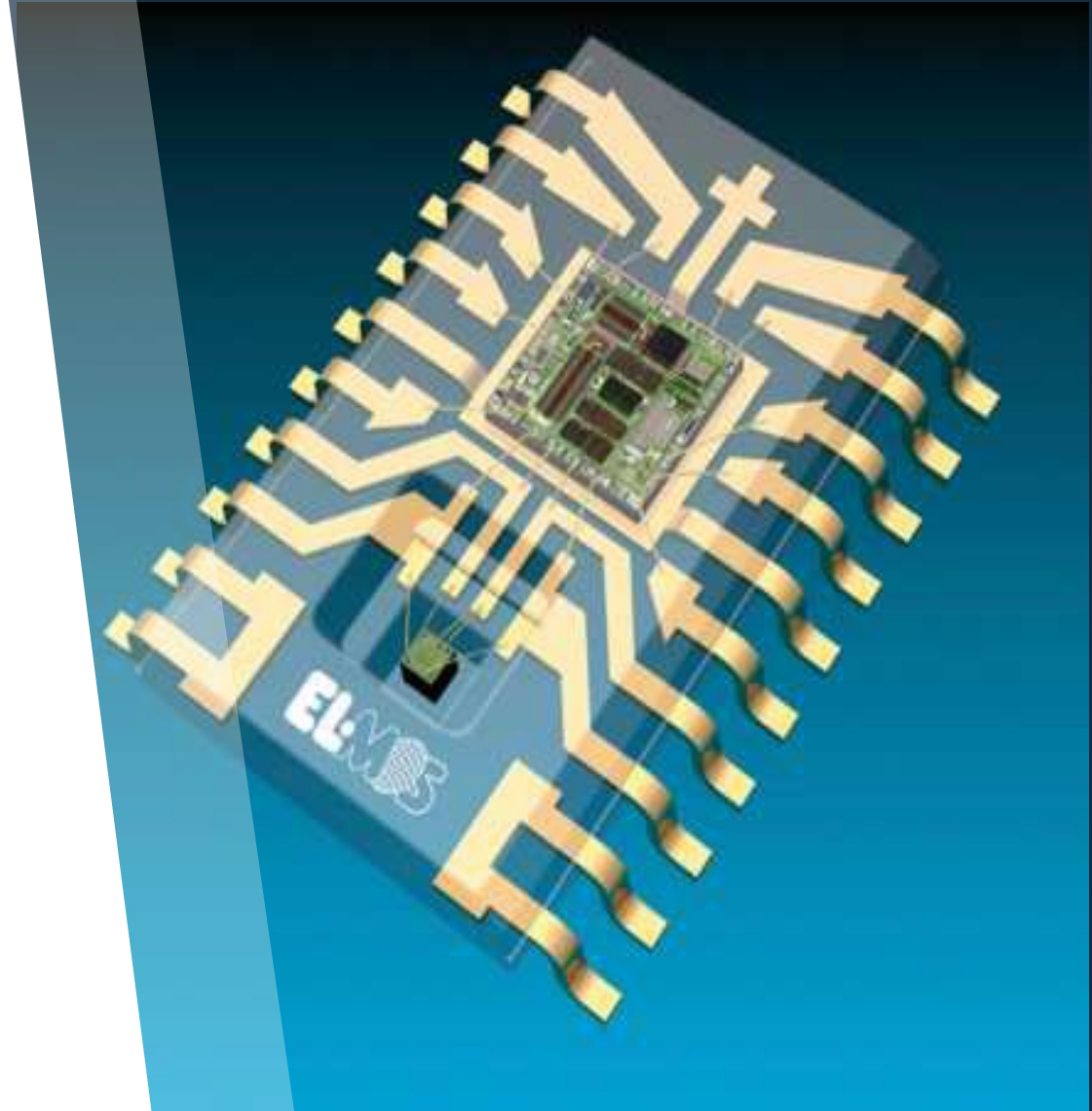
**SOIC-8**  
(5x6 mm<sup>2</sup>)

## E524.75 – Extended Electrical Immunity

- High voltage protection and increased EMC Immunity
- 5V ratiometric Output



**SOIC-20**  
(10x13 mm<sup>2</sup>)



elmos<sup>®</sup>



Innovation Matters

## DISCLAIMER

This presentation contains forward-looking statements based on beliefs of Elmos' management. Such statements reflect the company's current views with respect to future events and are subject to risks and uncertainties. Many factors could cause the actual results to be materially different, including, among others, changes in general economic and business conditions, changes in currency exchange rates and interest rates, introduction of competing products, lack of acceptance of new products or services and changes in business strategy. Actual results may vary materially from those projected here. Elmos does not intend or assume any obligation to update these forward-looking statements.



## Elmos Semiconductor SE

Heinrich-Hertz-Str. 1 | 44227 Dortmund | Germany | Telephone: + 49 231 75 49 0 | [info@elmos.com](mailto:info@elmos.com) | [www.elmos.com](http://www.elmos.com)