

Features

- Supply voltage: 4.75 V to 5.25 V
- Supply and output protection: -18/+35 V
- Simultaneous signal processing for two sensors
- Fully digital calibration; no external trim components
- Tool set provided for application support
- Optimized for resistive sensor bridges
- Sensitivity range: 3 - 112 mV/V
- 10-step coarse gain trimming
- 31-step coarse offset trimming to $\pm 4^*$ input span
- Low noise input with 15-bit ADC
- Configurable digital low-pass: 13Hz .. 1.1kHz
- Additional NTC channel with on-chip linearization
- 12-bit output via configurable SENT interface
- Configurable SENT output; same pin providing single-wire programming interface
- I²C interface for fast access to sensor/configuration/calibration data
- Developed acc. to ISO26262 with safety requirements rated up to ASIL C

Applications

- Automotive sensor applications
- Safety applications, e.g. braking systems
- General MEMS p-sensor applications
- Conditioning of resistive bridge sensors

General Description

This IC provides low-noise sensor signal conditioning with two individual 15-bit Delta-Sigma ADCs for two resistive bridge sensors, including compensation and linearization. Two additional temperature channels with a 14-bit Delta-Sigma ADC allow for precise acquisition and linearization of divers temperature sensors.

Internal sensor- and self-diagnosis, particular safety requirements and the development compliant to ISO26262 enable the integration of this IC into safety applications.

All compensated and linearized sensor data are available at the digital SENT interface output. The dual function SENT pin permits a serial I/O communication to enable real 3-wire end-of-line configuration and calibration.

Alternatively an additional I²C interface allows faster access to sensor, diagnosis, calibration and configuration data.

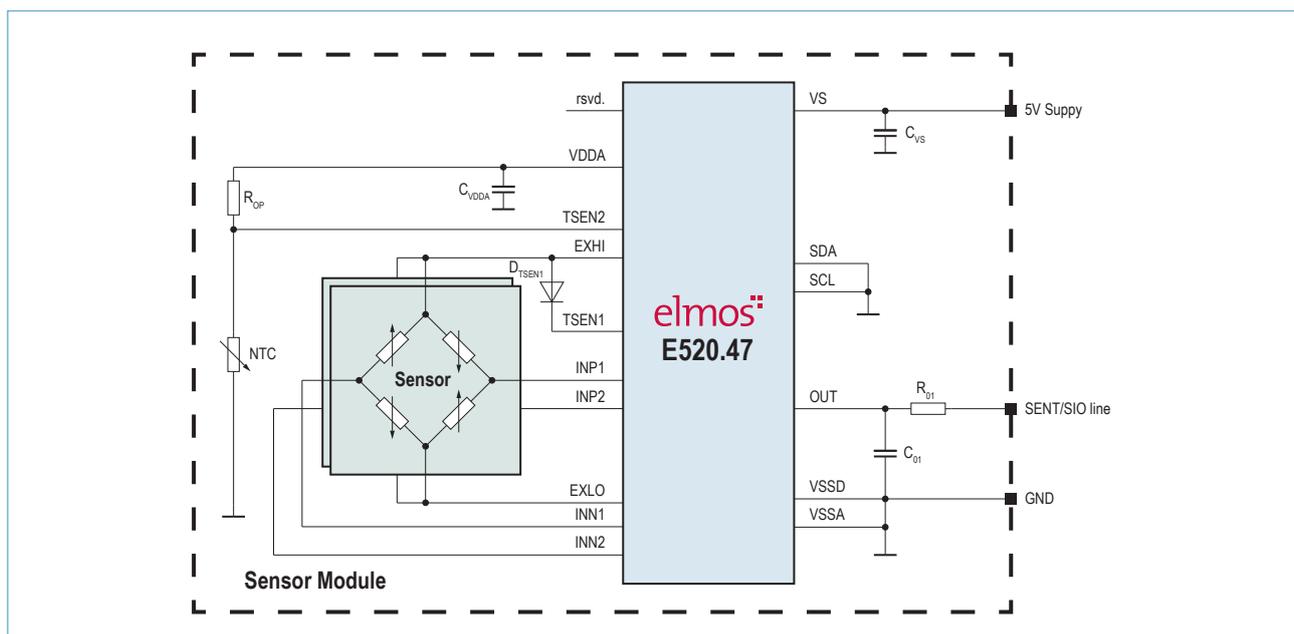
A calibration tool including a bench top evaluation software is provided to facilitate sensor mass production

Ordering Information

Ordering-No.	Temp Range	Package
E52047A52CXX2	-40°C to +150°C	QFN20L4-SLP
E52047A24Y	-40°C to +150°C	die ¹⁾

¹⁾ Contact factory for bare die specifications

Typical Application Circuit



Elmos Semiconductor SE reserves the right to change the detail specifications as may be required to permit improvements in the design of its products.

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