

Features

- Bi-directional interface in 2-wire & 3-wire variants
- Programmable transducer frequencies between 30kHz and 83kHz
- Programmable driver power and receiver gain
- Excellent short & long range performance due to:
 - Wide signal gain range
 - Sensitivity time control
 - Automatic threshold generation
 - Near-field threshold generation
 - Fast time constant algorithm
 - Echo peak detection
- Flexible IO protocol
- Transducer diagnosis information
- Integrated temperature sensor
- Envelope readout via IO or testmode
- Embedded EEPROM for calibration data
- Chip ID for traceability

Applications

- Ultrasonic park assist systems (USPA, PAS, ...)
- Industrial distance measuring

Ordering Information

Product ID	Temp. Range	Interface	Package
E524.08	-40°C to +105°C	2-wire	QFN20L4
E524.09	-40°C to +105°C	3-wire	QFN20L4

General Description

The device builds the core for a robust and easy-to-handle distance measurement system, while offering flexibility for customer applications.

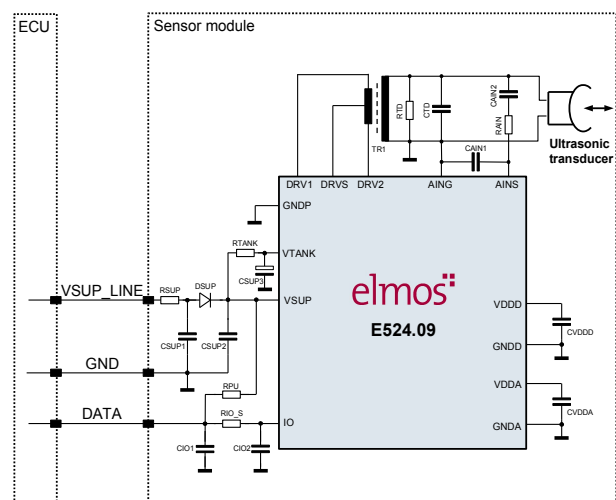
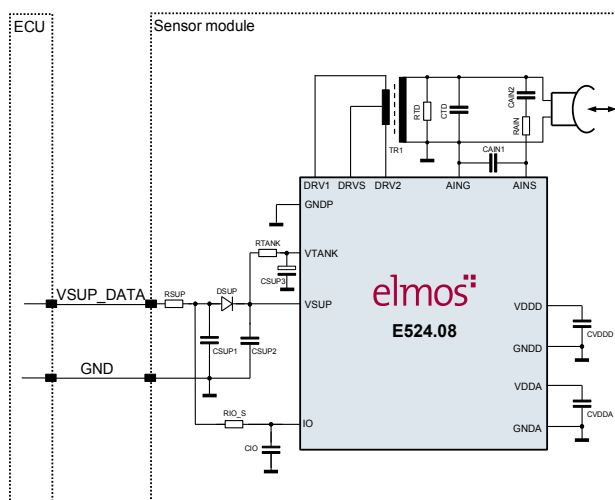
A driver unit stimulates the ultrasonic transducer via a center tapped transformer. Driver frequency, transmitted burst power and other parameters are user configurable.

The received echo signal is amplified, converted and digitally processed. Customized obstacle interpretation is feasible by a variable detection threshold. A flexible IO protocol combined with STC (Sensitivity time control), ATG (Automatic threshold generation), NFTG (Near-field threshold generation), FTC algorithm and EPD (Echo peak detection) optimize short and long range performance.

Application relevant settings can be stored in EEPROM during an End-Of-Line calibration by the customer. For evaluation and debugging purposes, envelope and threshold data can be read out via test mode and additionally the envelope data can be read out via IO line as an analog curve.

Communication with the control unit is possible via 2-wire or 3-wire configuration. The E524.08 supports a bi-directional communication via data modulation on the supply line. The E524.09 supports a dedicated IO-line for data transfer.

Typical Operating Circuit



This document contains information on a product under development. Elmos Semiconductor AG reserves the right to change or discontinue this product without notice.

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