

Features

- ▶ Minimum Component Ultrasonic Park Assist Solution
- ▶ Bi-directional Communication via Supply
- ▶ Single Transceiver Architecture
- ▶ Programmable to transducer frequencies 40kHz to 58kHz
- ▶ Supports "Receive Only" Mode
- ▶ High Sensitivity and Low Noise Down to $0.5\mu\text{VRMS}$
- ▶ Driver Power and Signal Gain Programmable
- ▶ Digital Filtering and Signal Processing
- ▶ 14 Programmable Threshold / Time Settings for Echo Envelope Evaluation
- ▶ Embedded EEPROM to Store Settings
- ▶ Automotive Supply and I/O Protection
- ▶ AEC-Q100 Qualification

Applications

- ▶ Ultrasonic Park Assist (USPA)
- ▶ Industrial Distance Measuring
- ▶ Robotics

General Description

The E524.02 offers ultrasonic range detection with minimum component count.

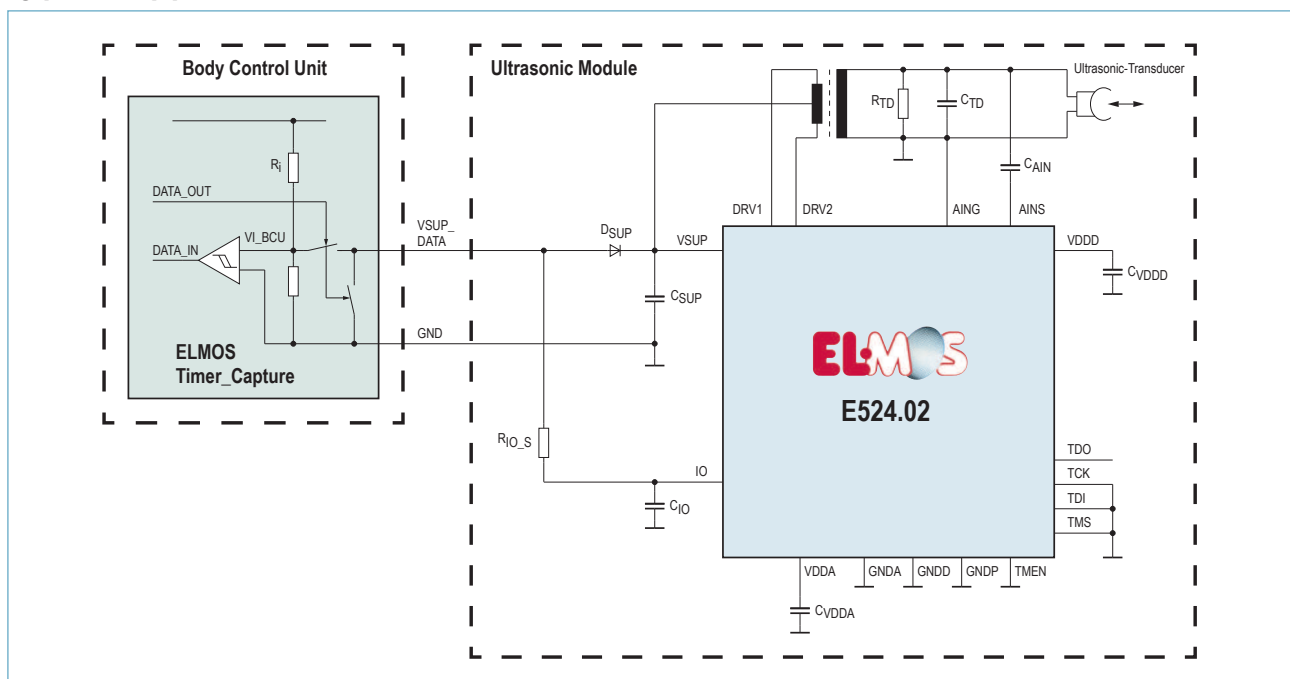
In transmit mode, the IC drives a center tapped transformer directly. Driver frequency, transmitted burst power and other parameters are user configurable and stored in embedded EEPROM via a single wire IO pin at assembly. The device features settings for short and long distance measurement.

In receive mode, the echo signal is first amplified with a programmable gain amplifier and converted by an internal analog-to-digital converter. The signal is subsequently digitally filtered and compared. Comparator thresholds are adjustable via registers for defined interval lengths within a measurement period. The resulting signal is available via the bi-directional supply line for the hosting BCU. A "Receive Only" mode enables the reception of indirect echos supports. To minimize wires, the E524.02 communication over a single power supply line.

Ordering Information

| Product ID | Temp. Range | Package |
|------------|----------------|---------|
| E524.02 | -40°C to +85°C | QFN20L4 |

Typical Applications Circuit



ELMOS Semiconductor AG 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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