RoHS compliant

Features

- Transformerless direct transducer driver
- Programmable to transducer frequencies between 38kHz and 72kHz
- Bi-directional interface in 2-wire & 3-wire variants
- Supply voltage independent performance
- Optimized short & long range performance by:
  - active and passive damping mechanisms
  - sensitivity time control
  - optional automatic threshold generation
- Fully integrated digital signal conditioning
- Programmable transducer voltage & burst length
- Programmable receiver amplifier gain
- Digital envelope and threshold readout via test mode
- Transducer diagnosis information
- Embedded EEPROM for calibration data
- Chip ID for traceability

Applications

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

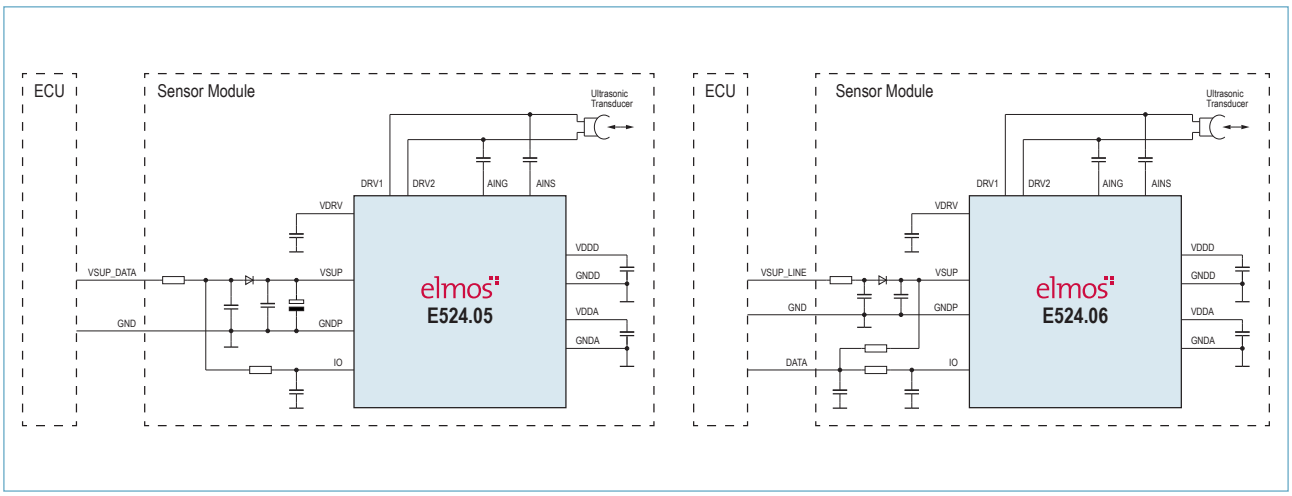
General Description

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 direct connected ultrasonic transducer. Driver frequency, transducer voltage, burst length, amplifier gain and other parameters are user configurable. Active and passive damping mechanisms combined with STC (Sensitivity Time Control) and ATG (automatic threshold generation) optimize short and long range performance.
The received echo signal is amplified, converted and digitally processed. Customized obstacle interpretation is feasible by a variable detection threshold. In SEND Mode the circuit triggers the ultrasonic transducer while in RECEIVE ONLY Mode only indirect echo signals are detected.
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.
Communication with the control unit is possible via 2-wire or 3-wire configuration. The E524.05 supports a bi-directional communication via data modulation on the supply line. The E524.06 supports a dedicated IO-line for data transfer.

Ordering Information

Ordering-No.	Temp Range	Interface	Package
E52405A52C	-40°C to +105°C	2-wire	QFN20L4
E52406A52C	-40°C to +105°C	3-wire	QFN20L4

Typical Application Circuit



This document contains information on a pre-production product. Elmos Semiconductor AG reserves the right to change specifications and information herein without notice.

Elmos Support 7/2014

Headquarters

Elmos Semiconductor AG
Heinrich-Hertz-Str. 1
44227 Dortmund (Germany)
Phone: +49 (0) 231 / 75 49-100
Fax: +49 (0) 231 / 75 49-149
sales-germany@elmos.com
www.elmos.com

Sales and Application Support Office North America

Elmos NA. Inc.
32255 Northwestern Highway, Suite 220
Farmington Hills, MI 48334 (United States)
Phone: +1 (0) 248 / 8 65 32 00
sales-usa@elmosna.com

Sales and Application Support Office China

Elmos Semiconductor Technology (Shanghai) Co., Ltd.
Unit 16B, 16F Zhao Feng World Trade Building,
No. 369 Jiang Su Road,
Chang Ning District,
Shanghai, PR China, 200050
Phone: +86 (0) 21 / 6210 0908
Fax: +86 (0) 21 / 6219 7502
sales-china@elmos.com

中国地区销售与应用支持

艾尔默斯半导体技术（上海）有限公司
中国 上海市 长宁区 江苏路369号
兆丰世贸大厦16楼 16B单元，200050
电话: +86 (0) 21 / 6210 0908
传真: +86 (0) 21 / 6219 7502
sales-china@elmos.com

Sales and Application Support Office Korea

Elmos Korea
B-1007, U-Space 2, #670 Daewangpangyo-ro,
Sampyoung-dong, Bunddang-gu, Sungnam-si
Kyounggi-do 463-400 Korea
Phone: +82 (0)31 / 7 14 11 31
sales-korea@elmos.com

Sales and Application Support Office Japan

Elmos Japan K.K.
BR Shibaura N Bldg. 7F
3-20-9 Shibaura, Minato-ku,
Tokyo 108-0023 Japan
Phone: +81 3 / 3451-7101
Fax: +81 3 / 3451-7104
sales-japan@elmos.com

Sales and Application Support Office Singapore

Elmos Semiconductor Singapore Pte Ltd.
3A International Business Park
#09-13 ICON@IBP
609935 Singapore
Phone: +65 (0) 6908 1261
Fax: +65 (0) 6570 5906
sales-singapore@elmos.com

Note *Elmos Semiconductor AG (below Elmos) reserves the right to make changes to the product contained in this publication without notice. Elmos assumes no responsibility for the use of any circuits described herein, conveys no licence under any patent or other right, and makes no representation that the circuits are free of patent infringement. While the information in this publication has been checked, no responsibility, however, is assumed for inaccuracies. Elmos does not recommend the use of any of its products in life support applications where the failure or malfunction of the product can reasonably be expected to cause failure of a life-support system or to significantly affect its safety or effectiveness. Products are not authorized for use in such applications.*

Copyright © 2014 Elmos *Reproduction, in part or whole, without the prior written consent of Elmos, is prohibited.*