3 * HALF BRIDGE CONTROLLER FOR SYSTEM OPTIMIZATION E523.01B/02B/11B/12B

ADVANCE PRODUCT INFORMATION - SEP 20, 2012

RoHS compliant

Features

- Precise, dynamical dead-time generation
- IC supply voltage range 7 to 28V (peak 42V)
- STOP/START-systems: limited operation down to 5V
- Sleep mode current 20µA (typ.)
- µC power supply 3.3V or 5V, up to 70mA direct load, higher loads with external boost transistor possible
- Adjustable window watchdog and reset generation
- LIN2.2Rev.A, 2.2, 2.1, 2.0, 1.3 or Bidirectional PWM Interface with ERROR feedback
- LIN high-speed "FLASH Mode
- LIN dominant clamping time-out selectable
- Motor current measurement amplifier
- SPI-programmable over-current switch-off
- SPI-programmable FET short-circuit detections
- Smart wake-up via BUS interface or KL15 (pin S)
- Configurable over-/ under-voltage protections
- QFN: Junction temp. -40°C..+150°C (+170°C peak)

Applications

- BLDC(EC) motor control, multiple DC motor control
- Fuel, Hydraulic, Oil and Water pumps
- Cooling fans, HVAC fans, positioning systems
- Turbo charger adjustment

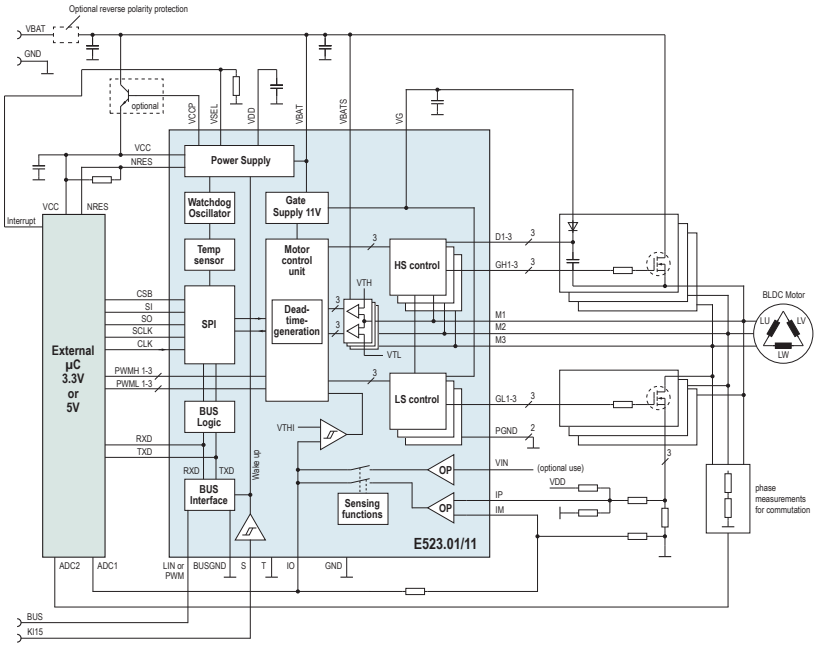
General Description

This IC controls up to 3 NMOS half bridges for driving BLDC motors, DC motors, or other loads. It's also possible to drive loads directly at battery supply. The IC supports an external µC with a power supply (3.3V or 5V), reset-generator and watchdog . The supply output current can be "boosted" with an external transistor.
For controlling the motor a dynamically programmable, very precise dead time generation and a current measurement amplifier are implemented. Diagnostic functions are detecting over current (programmable threshold), over temperature, over- and under voltage and short circuits (programmable threshold).
Two product versions with a "state of the art" LIN2.2A down to LIN1.3 or with a bidirectional PWM-interface are available. The LIN interface supports a "FLASH Mode" to upload a new firmware to an external µC. The LIN2.2A interface is also compatible down to LIN1.3 .
High ambient temperatures up to +150°C are allowed.

Ordering Information

Product ID	Features	Package
E523.01B	LIN 2.x or PWM	QFN44L7, QSOP44, QFN48L7
E523.11B	PWM only	
E523.02B	.01B for 2 half bridges	
E523.12B	.11B for 2 half bridges	

Typical Applications Circuit



This document contains information on a new product. ELMOS Semiconductor AG reserves the right to change specifications and information herein without notice.

ELMOS Support 09/2012

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

Regional Sales and Application Support Office Munich
ELMOS Semiconductor AG
Am Gefluegelhof 12
85716 Unterschleißheim/Eching (Germany)
Phone: +49 (0) 89 / 31 83 70-0
Fax: +49 (0) 89 / 31 83 70-31
sales-germany@elmos.com

Sales and Application Support Office North America
ELMOS NA. Inc.
32255 Northwestern Highway, Suite 45
Farmington Hills, MI 48334 (United States)
Phone: +1 (0) 248 / 8 65 32 00
sales-usa@elmosna.com

Sales and Application Support Office Korea and Japan
ELMOS Korea
Suite 1907
Park View Office Tower
6 Jeongja-dong, Bundang-gu, Seongnam-si, Kyonggi-do,
463-863 Republic of Korea
Phone: +82 (0)31 / 7 14 11 31
sales-korea@elmos.com

Sales and Application Support Office China
ELMOS Semiconductor Technology (Shanghai) Co., Ltd.
Unit London, 1BF GC Tower,
No. 1088 YuanShen Road,
Pudong New District,
Shanghai, PR China, 200122
Phone: +86 (0) 21 / 5178 5178- 5188
Fax: +86 (0) 21 / 51 78 52 05
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
中国上海浦东新区源深路1088号
葛洲坝大厦1B楼伦敦单元, 200122
电话：+86 (0) 21 / 5178 5178 - 5188
sales-china@elmos.com

Sales and Application Support Office Singapore
ELMOS Semiconductor Singapore Pte Ltd.
60 Alexandra Terrace
#09-31 The Comtech (Singapore 118502)
Phone: +65 (0) 663 / 5 11 41
Fax: +65 (0) 663 / 5 11 40
sales-singapore@elmos.com