B6 Bridge FET Driver with LIN/PWM Interface

E523.01C/02C/11C/12C

Production Data - Dec 2, 2014
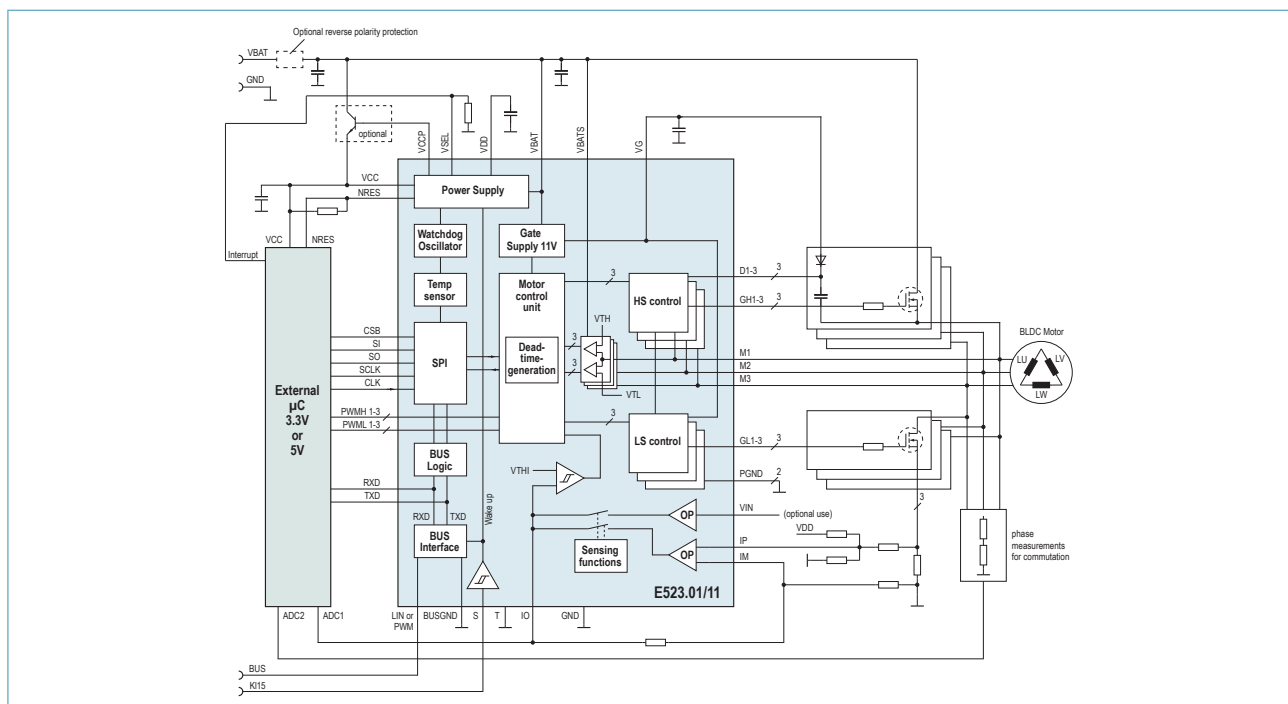
RoHS compliant

Features

- Voltage range 7V to 28V (42V peak), Limited down to 5V for start-stop systems
- Sleep mode current 20µA typically
- Microcontroller supply 3.3V or 5V, up to 70mA, >70mA with external boost transistor
- Adjustable watchdog and reset generation
- Smart wake-up via BUS interface or KL15
- Dead time generation (dynamical change)
- Motor current measurement amplifier
- Over current switch-off (dynamical change)
- FET short circuit protections (dynamical change)
- Configurable voltage monitoring
- LIN2.x transceiver, compatible down to LIN1.3
- PWM interface, bidirectional with error feedback
- End-of-line high-speed flashing via LIN
- QFN package -40°C to +150°C junction (+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

The IC is a system base chip for driving BLDC and DC motors in B6, full bridge or half bridge applications. The IC ensures a safe, autonomous start-up and wake-up. It is suitable for high temperature applications. An integrated linear regulator supplies an external microcontroller. The supply output current can be "boosted" with an external transistor. For controlling the motor, six power FET gate drivers with dynamically programmable, very precise dead time generation are implemented. Versions driving two half bridges only are available. Measurement functions for motor current, battery voltage and temperature are implemented.

The IC has integrated programmable safety functions on motor over current, battery over and under voltage, over temperature and short circuits at all six power FETs. Two product versions with a "state of the art" LIN2.2A or bidirectional PWM interface are available. The LIN interface supports flash mode to upload a new firmware to the microcontroller.

Ordering Information

Product-No.:	Features	Package
E523.01C *	LIN2.x or PWM interface	QFN44L7, QSOP44, QFN48L7
E523.11C *	PWM interface only	see above
E523.02C *	.01C, 2 half-bridges only	see above
E523.12C *	.11C, 2 half-bridges only	see above

* for ordering number please contact Elmos

Typical Application Circuit

Elmos Support

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