BLDC-Motor Driver with Cold-Crank Capability

E523.10

Preliminary Information - May 3, 2016

RoHS compliant

Features

- Voltage range 4.5V to 28V (42V peak) 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
- Self-controlled dead time generation
- Motor current measurement amplifier
- Over current switch-off (dynamical change)
- FET short circuit protections (dynamical change)
- Configurable voltage monitoring
- PWM interface, bidirectional with error feedback

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 E523.10 is a system base chip for driving BLDC and DC motors in B6, full bridge or half bridge applications.
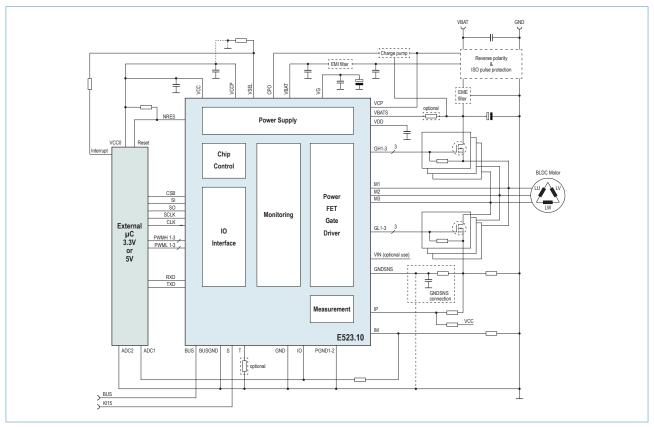
The IC ensures a safe, autonomous start-up and wake-up. It is suitable for high temperature applications. An integrated linear regulator supplies an external microcontroller. The supply output current can be "boosted" with an external transistor. For controlling the motor, six power FET gate drivers with automated dead time generation are implemented. 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.

Ordering Information

Ordering-No.:	Temp$_{Junc}$ Range	Package
E52310A39B	-40°C to +150°C	QFN44L7

Typical Application Circuit

Elmos Support

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