

Features

- Supply voltage range from 12V to 72V, operational down to 7V
- 11V, 100mA high efficiency DC-DC converter for gate supply and other loads
- Three complementary 200mA gate drivers with programmable dead time and protection features
- Integrated automotive 16Bit RISC processor with 4k SRAM and hardware MAC and divider units
- 32kByte Flash with ECC error protection
- Self advancing half bridge PWM generators auto-nomously generate various commutation waveforms
- 1MS/s 12bit ADC autonomous sample sequence engine synchronized to PWM with direct memory access
- One SPI module
- 4 timer capture and compare units with QEI modes
- One high voltage enable, 9 general purpose IOs
- Thermally efficient 7x7mm 36pin QFN package

Applications

- 48V automotive and commercial vehicle applications
- BLDC-Motors in industrial 24V to 72V applications

General Description

The E523.52 is a programmable, high-voltage brushless motor controller for 24V..48V automotive applications, industrial applications and commercial vehicles. It integrates 3 half-bridge drivers, a 11V step down converter, two linear regulators, and a 16bit RISC microcontroller with 32kB Flash. The DC-DC converter efficiently provides 11V for the six gate drivers, the internal linear regulators, and other loads such as external Hall sensors.

Up to 9 configurable IO pins facilitate interfacing with the application and the outside world. All IOs can be sampled by a 12bit, 1MS/s ADC with direct memory access.

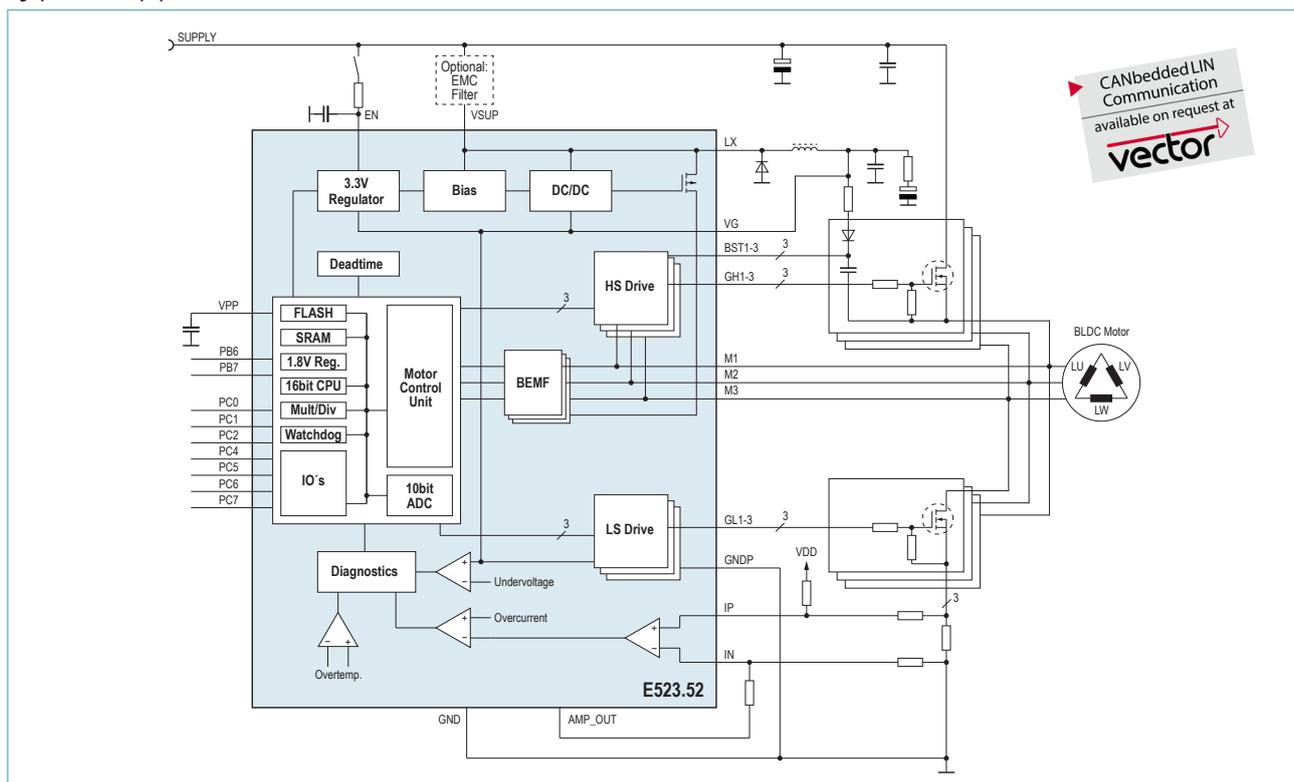
Three self advancing PWM generators with integrated dead time can implement various wave-forms. Fully integrated back-EMF channels allow sensor-less commutation. Automatic ADC triggering allows programming of complex commutation algorithms. The memory can be divided into protected and field programmable areas.

Internal temperature monitoring and a thermally efficient 36 Pin QFN package enable the driver section to operate close to its maximum junction temperature of +150°C.

Ordering Information

Ordering-No.:	Temp _{Junc} Range	Package
E52352A79B	-40°C to +150°C	QFN36L7

Typical Application Circuit



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