

Features

- Control and drive of a three phase brush less motor (BLDC), a three phase stepper motor or two conventional DC motors.
- Integrated three half bridge driver with a maximum phase current of 600mA (RMS) per each phase. Boost mode up to 1A peak⁽¹⁾
- Integrated measurement system for motor current and voltage (phase and supply)
- Monitor and diagnosis features:
 - Under/Over-voltage , over-current, over-temperature
 - Short circuit and open load detection
- Smart supply block for 12V automotive boardnet
 - Configurable low supply voltage (<7V) operation
 - 30µA sleep mode current (25°C typ.)
- Area and power optimized 32bit ARM® Cortex®-M0⁽²⁾
 - 32 KByte OTP, 256 Byte customer EEPROM
 - 24 KByte SysROM⁽³⁾ for LIN protocol and bootloader
- Serial interface for fast end-of-line programming
- Support of external sensor by
 - 5V/20mA voltage supply
 - Data interfaces (analog/digital GPIOs, SPI)
- LIN 2.2 autobaud interface and auto-addressing (compatible to LIN 2.0 and 1.3 and SAE-J2602-2), LIN 2.2 SNPD
- Operating range of -40°C to +150°C junction temperature

(1 Thermal limitation

(2 ARM® and Cortex® are the registered trademarks of ARM Limited in the EU and other countries.

(3 Contact Elmos for customization

General Description

The E523.42 is a highly integrated motor controller for 12V automotive application. The device combines a 32bit ARM® Cortex®-M0 microcontroller and a high-voltage analog motor driver in a small footprint leadless package.

This device drives a three phase brush less motor(BLDC), a three phase stepper motor or two conventional DC motors. The combination of a microcontroller and an integrated power stage provides a cost optimized system for low to medium power actuator and fan applications.

The integrated measurement system provides all input signals to realize a sensor less close loop commutation and provides a complete set of monitor and diagnosis features.

For outstanding absolute positioning requirements external sensors are supported by providing supply voltage and various data interfaces (analog/digital GPIOs, SPI).

A serial interface supports fast end-of-line OTP firmware programming. The LIN 2.2 interface with autobaud and auto-addressing functionality enables the integration into existing LIN bus systems.

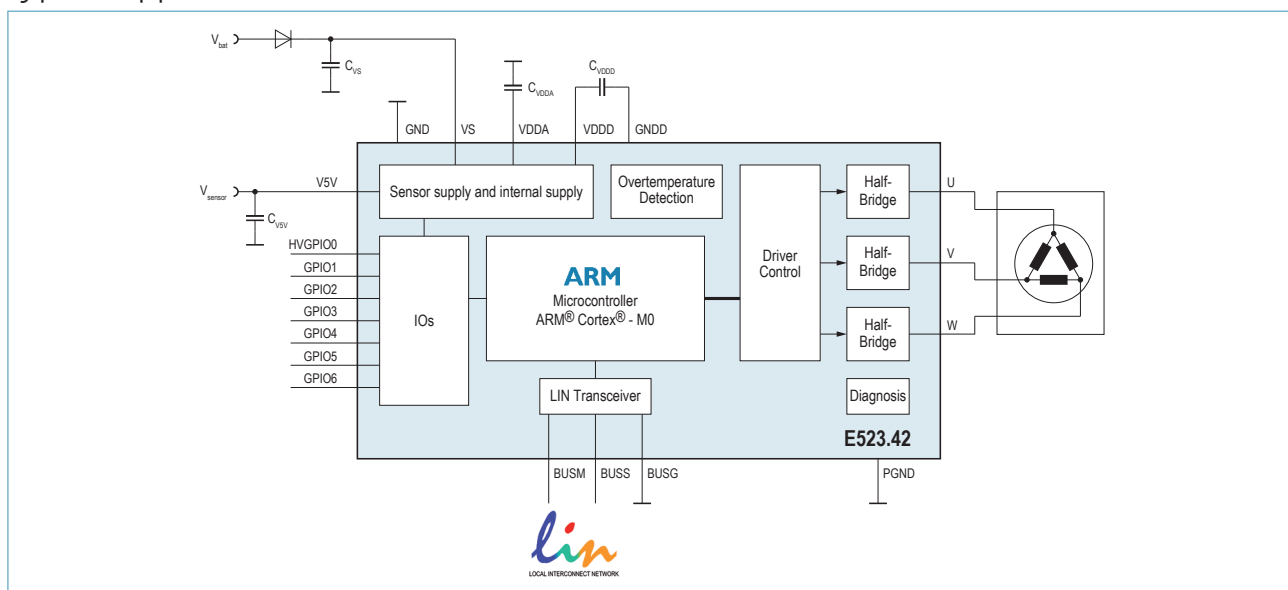
Ordering Information

Ordering-No.:	Temp _{Amb} Range	Package
E52342A61C	-40°C to +125°C	QFN32L5

Applications

- Three motor(BLDC), a three phase stepper motor or two conventional DC motors
- Sensorless motion detection

Typical Application Circuit



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