

General Description

The ELMOS E523.71 is a next generation All-In-One Smart LIN Driver for Brushed-DC Motors.

E523.71 integrates all needed components to support a Smart LIN Brushed-DC Actuator via the LIN2.x bus (ISO 17987) and enables optimized PCB size by small package SO8 and minimum need for external components.

The E523.71 is delivered including application firmware, which allow direct motor control via the LIN interface. The LIN message IDs and a set of application parameters can be adapted to customer needs by end-of-line programming of the embedded EEPROM (MTP) memory. Assigning the LIN address is possible by sequential end-of-line programming or by LIN auto-addressing (SNPD bus-shunt method).

Embedded functions included:

- Actuator self calibration by parametrization of end stop acceptance criteria.
- Servo position control loop based on actuator position sensor and target position
- Position control including analysing position sensor data, checking position operation ranges and parametrization safety positions
- Optional: Sensor-less position control
- Motion control including PWM speed control, boost or smooth start, stop, break, and motor direction setting
- Stall detection, parametric relaxing stall torque load
- Diagnostics

Features

- Integrated half bridges driver for up to 700mA
- Selectable 100% duty cycle or PWM motor voltage control
- Integrated measurement system for motor current and voltage (phase and supply)
- Monitoring and diagnosis features: Under/over-voltage, Vds-voltage protection, over-temp. measurement capability, driver over/open load detection
- Smart supply block for 12V automotive board net: Supply operating voltage 7..18V (42V load dump) Data integrity down to 4V supply voltage 20µA deep sleep mode current (25°C typ.)
- ADC with 12bit resolution (10bit effective)
- Support of external sensor for position detection
- Optional support of sensor-less position detection
- LIN 2.x auto baud interface (compatible to LIN 1.3; SAE-J2602-2; ISO17987; LIN sleep mode capability)
- LIN 2.2x SNPD LIN Auto-Addressing (bus shunt meth. type1 with int. 10Ohm shunt, type2 with ext. 0.20hm shunt)
- Operating range of T_{amb} -40°C to 125°C; T_{junc} 150°C
- SO8 package with thermal sink; AEC-Q100 grade 1

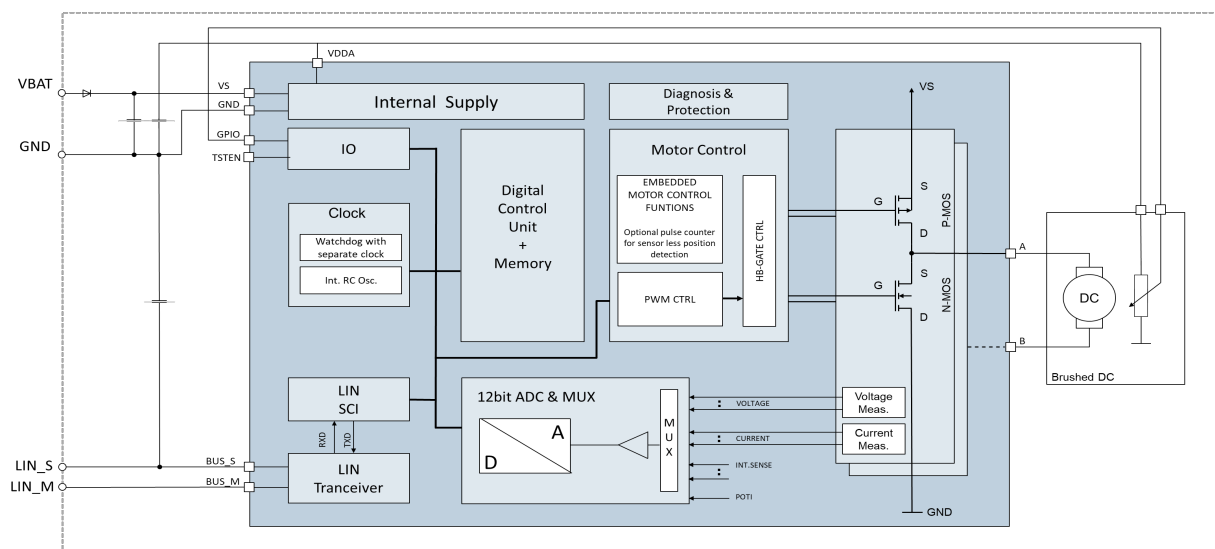
Ordering Information

Ordering-No.:	Ambient Temp. Range	Package
E52371A80D	-40°C to +125°C	SO8-EP

Applications

- Smart actuator for HVAC, valve control

Typical Operating Circuit



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