

## Product brief

# Motor System IC family – TLE956x



(BL)DC Motor System IC combines power supply, communication and multiple half-bridge MOSFET drivers

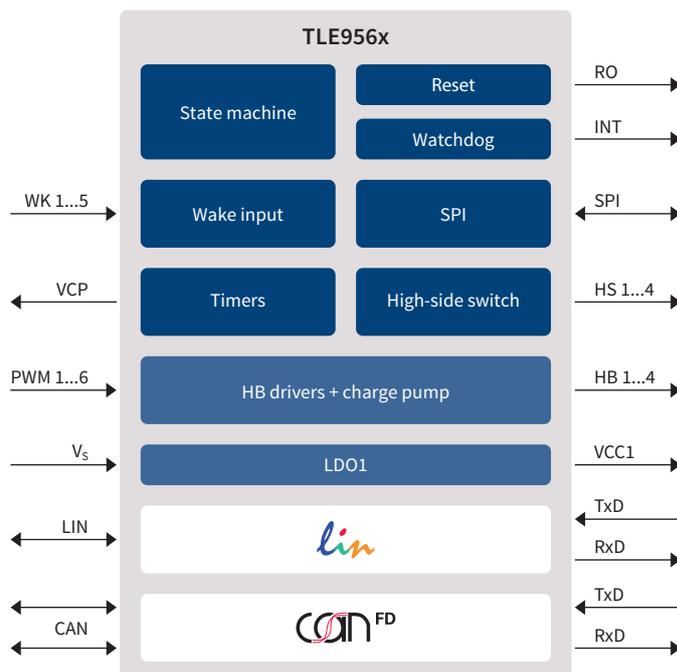
All devices of the Motor System IC family feature a low-dropout voltage regulator with an output current of 250 mA/5 V. The communication interface incorporates a CAN FD transceiver up to 5 Mbit/s according to ISO 11898-2:2016 (including Partial Networking (PN) option) and/or a LIN transceiver.

All devices are available in a VQFN-48 (7 x 7 mm) package.

### Key benefits

- > PCB savings up to 50 percent due to unique integration approach
- > Lower switching losses and EMC optimization due to adaptive MOSFET control
- > Automatic regulation of MOSFET pre-charge currents diminish need for production MOSFET calibration
- >  $V_s$  monitoring in sleep mode activates MOSFET to prevent from ECU damage when motor is in generator mode

### Block diagram



### Key features

- > 5 V linear regulator up to 250 mA
- > CAN FD up to 5 Mbps
- > CAN PN and FD tolerant ("-3" variants)
- > LIN2.2B/J2602
- > TLE9560/1/2: up to 4 half-bridge gate drivers with adaptive MOSFET control up to 100 mA constant gate charge
- > TLE9563/4: 3-phase gate driver with CSA and adaptive MOSFET control up to 150 mA constant gate charge
- > Up to 4 high-side switches (with 7 on-resistance)
- > Up to 5 wake inputs
- > Up to 6 PWM inputs

### Key applications

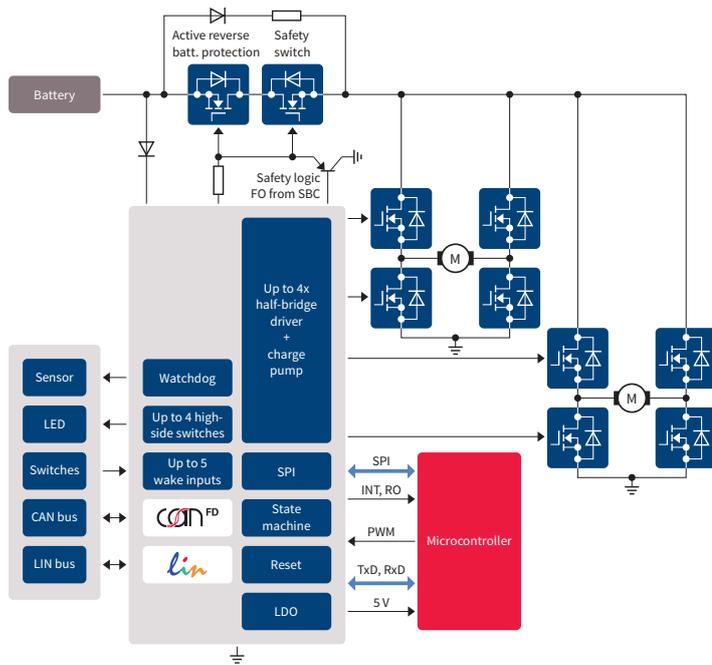
- DC motor control**
- > Power lift gate
  - > Seat control module
  - > Sunroof module
  - > HVAC flaps
  - > Electric parking actuator
  - > Steering column lock
  - > Reversible seat belt
- BLDC motor control**
- > Pumps
  - > Fans
  - > Sunroof
  - > Transfer case

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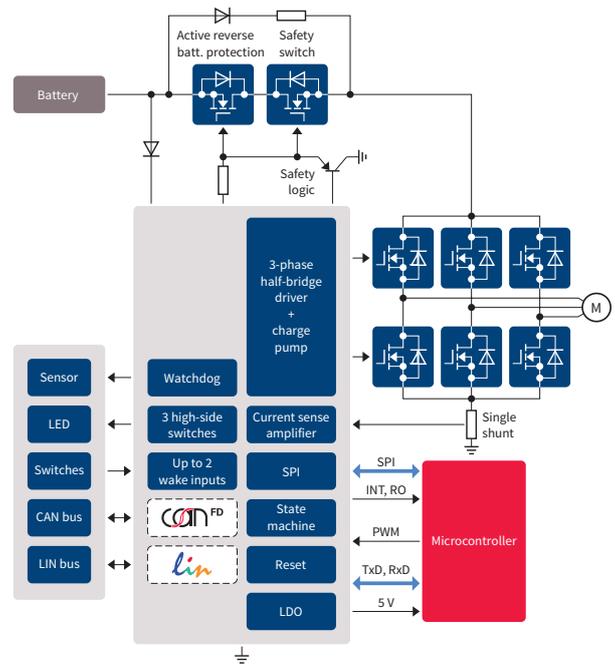
(BL)DC Motor System IC combines power supply, communication and multiple half-bridge MOSFET drivers

## Application diagram

TLE9560/1/2 for DC motor control



TLE9563/4 for BLDC motor control



## Product table

Product variant	VCC1	CAN FD	CAN PN	LIN	HS switches	PWM input	Driver
TLE9560-3QX	5 V up to 250 mA	●	●	●	4	1	2x half-bridges (100 mA const.)
TLE9561QX	5 V up to 250 mA	●	–	–	4	4	4x half bridges (100 mA const.)
TLE9561-3QX	5 V up to 250 mA	●	●	–	4	4	4x half bridges (100 mA const.)
TLE9562QX	5 V up to 250 mA	●	–	●	4	2	4x half bridges (100 mA const.)
TLE9562-3QX	5 V up to 250 mA	●	●	●	4	2	4x half bridges (100 mA const.)
TLE9563-3QX	5 V up to 250 mA	●	●	–	3	6	3x half bridges (150 mA const.)
TLE9564QX	5 V up to 250 mA	–	–	●	3	6	3x half bridges (150 mA const.)

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