

Product brief

MOTIX™ SBC Motor system IC TLE956x

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

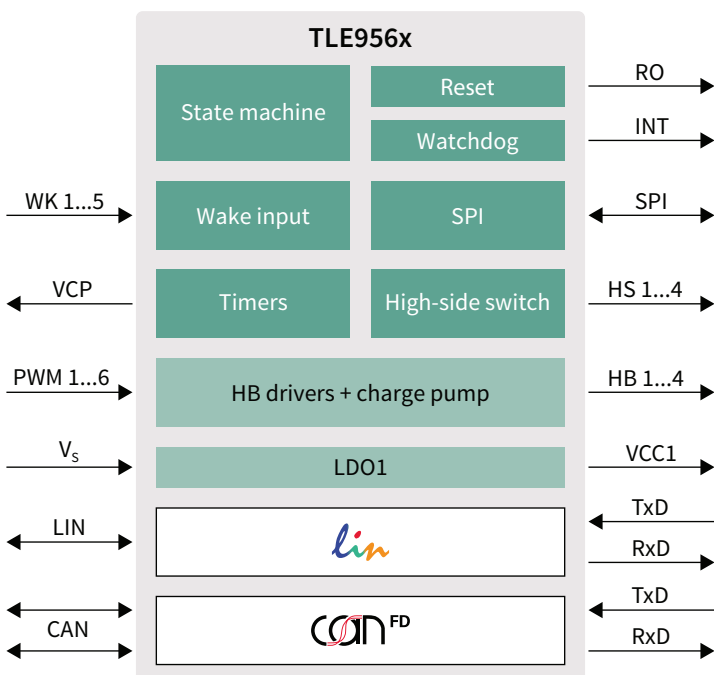
All devices of the motor system IC family feature a low-dropout voltage regulator with an output current of 250 mA/5 V. The communication interface incorporates a CAN FD transceiver up to 5 Mbit/s according to ISO 11898-2:2016 (including Partial Networking (PN) option) and/or LIN transceiver.

All devices are available in a PG-VQFN-48 (7 mm 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
- > MOTIX™ TLE9560/1/2: up to 4 half-bridge gate driver with adaptive MOSFET control up to 100 mA constant gate charge
- > MOTIX™ 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

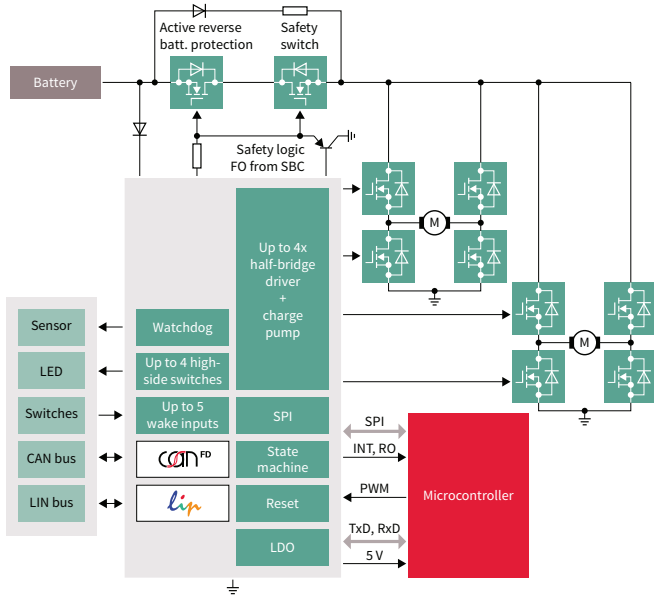
- > Pumps
- > Fans
- > Sunroof
- > Transfer case

MOTIX™ motor system IC TLE956x

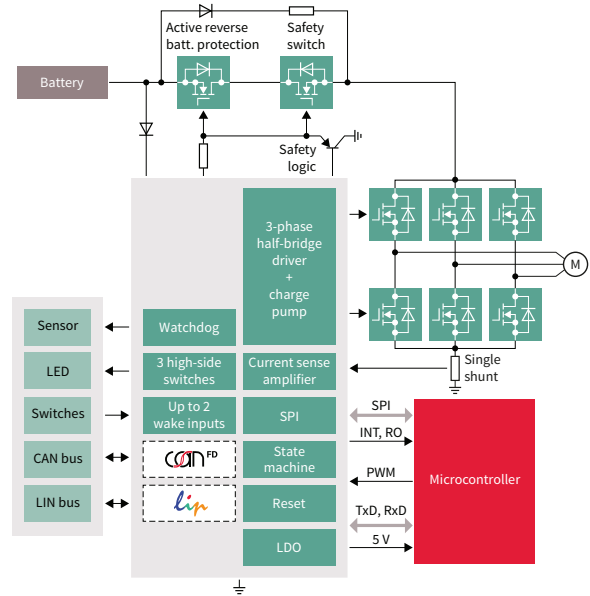
(BL)DC motor system IC combines power supply, communication and multiple half-bridge MOSFET drivers

Application diagram

MOTIX™ TLE9560/1/2 for DC motors control



MOTIX™ TLE9563/4 for BLDC motor control



Product table

Product variant	V _{CC1}	CAN FD	CAN PN	LIN	HS switches	PWM input	Driver
MOTIX™ TLE9560-3QX	5 V up to 250 mA	✓	✓	✓	4	1	2x half-bridges (100 mA const.)
MOTIX™ TLE9561QX	5 V up to 250 mA	✓	×	×	4	4	4x half-bridges (100 mA const.)
MOTIX™ TLE9561-3QX	5 V up to 250 mA	✓	✓	×	4	4	4x half-bridges (100 mA const.)
MOTIX™ TLE9562QX	5 V up to 250 mA	✓	×	✓	4	2	4x half-bridges (100 mA const.)
MOTIX™ TLE9562-3QX	5 V up to 250 mA	✓	✓	✓	4	2	4x half-bridges (100 mA const.)
MOTIX™ TLE9563-3QX	5 V up to 250 mA	✓	✓	×	3	6	3x half bridges (150 mA const.)
MOTIX™ TLE9564QX	5 V up to 250 mA	×	×	✓	3	6	3x half bridges (150 mA const.)

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