

MOTIX™ TLE956x

MOTIX™ motor system ICs (SBC) combine power supply, communication and multiple half-bridge MOSFET drivers for BDC and BLDC motor control

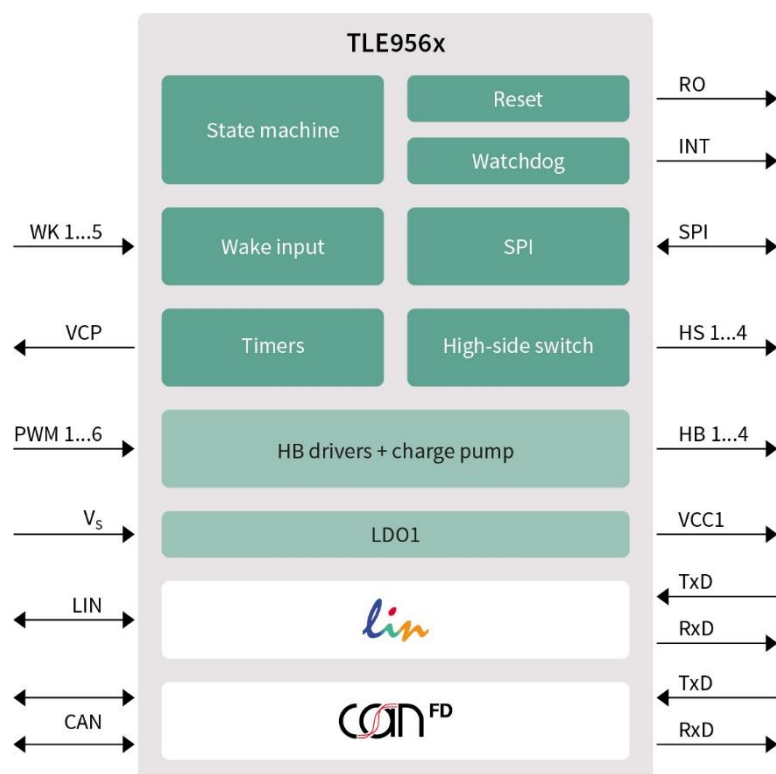
All devices of the MOTIX™ motor system IC (SBC) family feature a low-dropout voltage regulator with an output current of 250 mA/5 V. The communication interface incorporates a CAN FD transceiver up to 5 Mbit/s according to ISO 11898-2:2016 (including Partial Networking (PN) option) and/or LIN transceiver.

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 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 mΩ on-resistance)
- Up to 5 wake inputs
- Up to 6 PWM inputs

Key applications

DC motor control

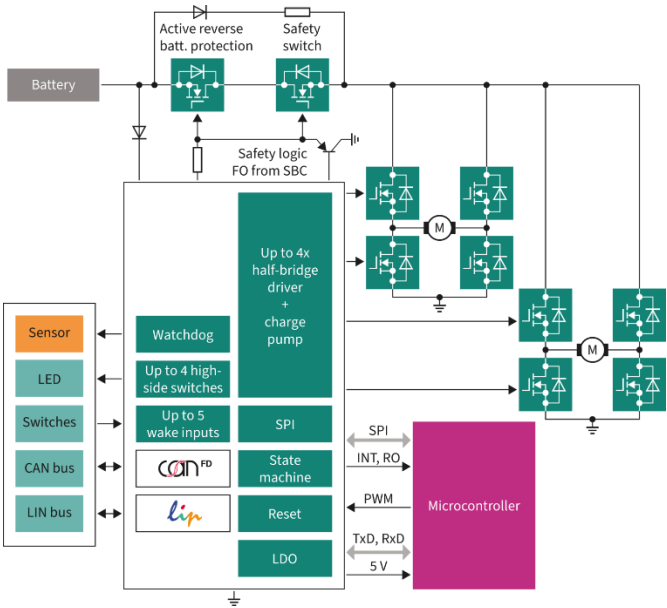
- Power lift gate
- Seat control module
- Sunroof module
- HVAC flaps
- Electric parking actuator
- Steering column lock
- Reversible seat belt

BLDC motor control

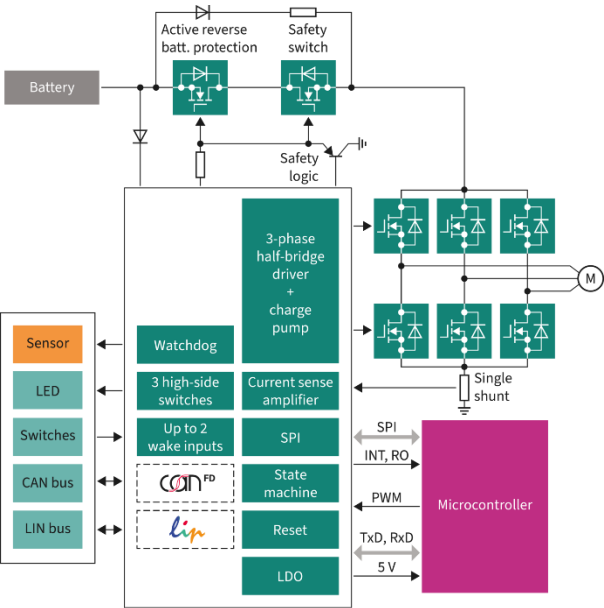
- Pumps
- Fans
- Sunroof
- Transfer case

PRODUCT BRIEF

Application diagram TLE9560/1/2



Application diagram TLE9563/4



MOTIX™ motor system ICs (SBC)

Product	CAN FD	CAN PN	LIN	HS switch	PWM input	Driver	Max. temperature
TLE9560-3QX	Yes	Yes	Yes	4	1	2 half-bridges (100 mA const.)	150 °C
TLE9561QX	Yes	-	-	4	4	4 half-bridges (100 mA const.)	150 °C
TLE9561-3QX	Yes	Yes	Yes	4	4	4 half-bridges (100 mA const.)	150 °C
TLE9562QX	Yes	-	-	4	2	4 half-bridges (100 mA const.)	150 °C
TLE9562-3QX	Yes	Yes	Yes	4	2	4 half-bridges (100 mA const.)	150 °C
TLE9563-3QX	Yes	Yes	-	4	6	3 half-bridges (150 mA const.)	150 °C
TLE9563-3QXW	Yes	Yes	-	4	6	3 half-bridges (150 mA const.)	175 °C
TLE9564QX	-	-	Yes	3	6	3 half-bridges (150 mA const.)	150 °C
TLE9564QW	-	-	Yes	3	6	3 half-bridges (150 mA const.)	175 °C

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