

Product Brief

TLE984x Infineon® Embedded Power IC

Relay driver IC with integrated ARM® Cortex®-M0 MCU

The TLE984x product family integrates an ARM® Cortex®-M0 microcontroller core along with relay drivers, high-side switches, LIN transceiver and a power supply system that enables the device to operate at the vehicle battery level.

Its peripheral set includes a 10-bit ADC with 13 multiplexed analog inputs to process up to 5 high-voltage monitoring inputs, 6 low-voltage inputs and 2 high-voltage inputs for sensing the battery voltage and the supply of the device. It further includes an 8-bit ADC with 7 multiplexed inputs for voltage and temperature supervision. Its digital peripherals include a PWM signal generator unit and 16-bit timers along with a number of general purpose I/Os (serial interfaces and UARTs). It includes an on-chip linear voltage regulator to supply external loads.

The TLE984x family concept offers scalability in terms of flash memory sizes ranging from 36 kB to 64 kB with pin-compatible devices. The product family is offered in a leadless VQFN-48 package to save board space.

The TLE984x family is the successor of the TLE983x family and is specifically designed to drive a wide range of LIN-slave automotive motor control applications via a relay or via a PN MOSFET half-bridge.

Applications

- > Window lift
- > Sunroof
- > Wiper
- > Fan/blower motor control
- > Pump motor control
- > LIN addressed relay motor applications

Main features

- > ARM® Cortex®-M0 MCU
- > System clock up to 40 MHz
- > Up to 64 kB flash memory
- > Up to 4 kB RAM
- > High-side & low-side switches with PWM capability
- > 5 V power supply output
- > Integrated LIN transceiver compatible with LIN standard 2.2 and SAE J2602-supports fast programming via LIN
- > 8-bit ADC with 7 channels for voltage and temperature supervision
- > 10-bit ADC with 13 channels (6 analog inputs, 5 HV monitor inputs and battery sense)
- > On chip oscillator & PLL

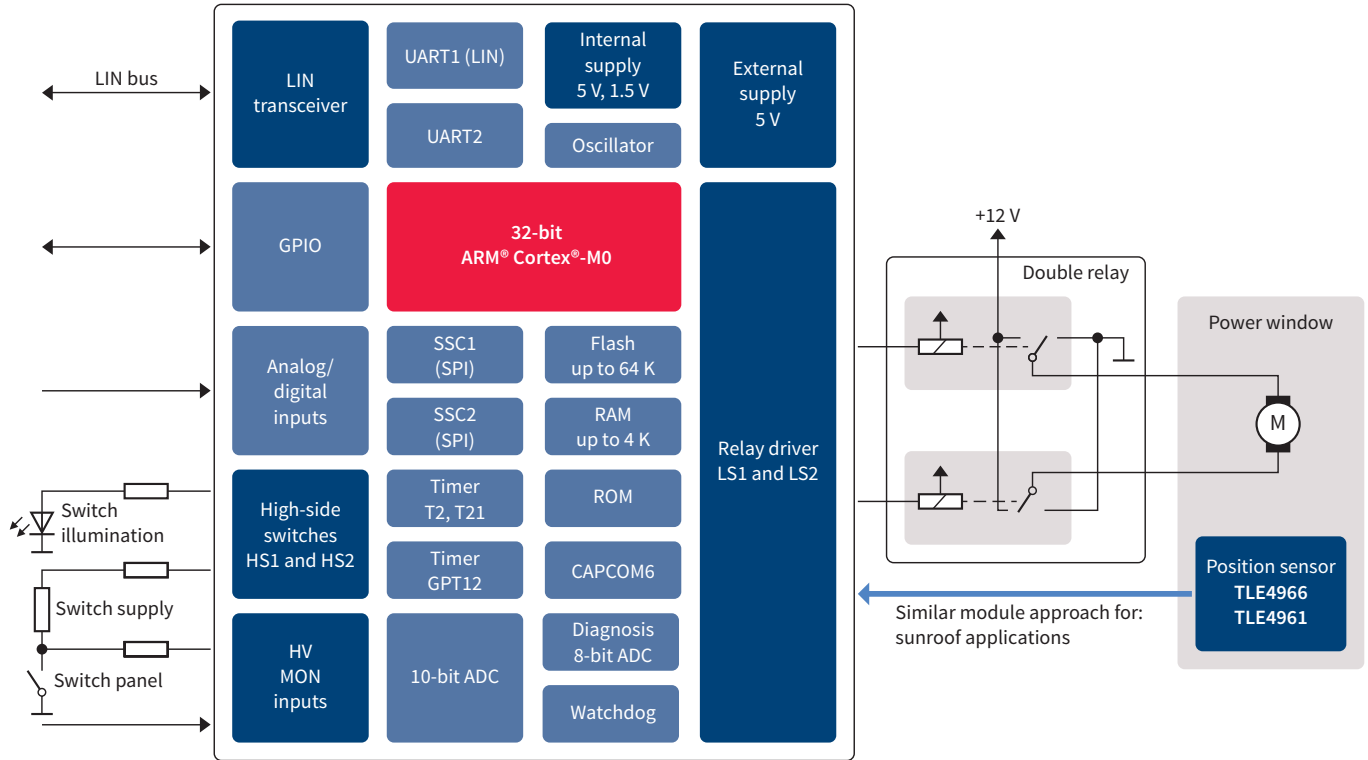
Key benefits

- > Complete system-on-chip
- > Minimum number of external components reduces BOM cost
- > VQFN package with 7 x 7 mm² footprint enables PCB space saving

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Block diagram (window lift example)



Product summary

TLE984x product family: relay driver IC with integrated microcontroller							
Product name	Flash [kB]	RAM [kB]	EEPROM in flash included [kB]	Frequency (max) [MHz]	High-side switch	High-voltage monitor input	PN MOS driver
TLE9842QX	36	2	4	25	1	4	No
TLE9842-2QX	40	2	4	40	2	5	No
TLE9843QX	48	4	4	25	1	4	No
TLE9843-2QX	52	4	4	40	2	5	No
TLE9844QX	64	4	4	25	1	4	No
TLE9844-2QX	64	4	4	40	2	5	No
TLE9845QX	48	4	4	40	2	5	Yes

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