

Product brief

High speed dual CAN with flexible data-rate transceiver up to 5 Mbit/s

The TLE9254x is part of Infineon's high speed CAN FD 5 MB transceiver generation, used for automotive applications as well as for industrial applications. As CAN FD networks will increase and replace classical CAN networks in future, the TLE9254x transceiver family is providing the perfect match for future OEM requirements.

The whole TLE9254x family is fully compliant to the new ISO 11898-2:2016 fulfilling the worldwide OEM time filter specification (0.5 – 1.8 μ s). The TLE9254 is available in a PG-DSO-14 package and in a small, leadless PG-TSON-14 package. Both packages are RoHS compliant and halogen free. Additionally the PG-TSON-14 package supports the solder joint requirements for Automated Optical Inspection (AOI).

As an interface between the physical bus layer and the HS CAN protocol controller, the TLE9254 is designed to protect the microcontroller against interference generated inside the network. A very high ESD robustness and the very high RF immunity allow the use in automotive applications without additional protection devices, such as suppressor diodes.

The very high transmitter symmetry combined with the optimized delay symmetry of the receiver enables the TLE9254 to support CAN FD data frames up to 5 Mbit/s. Based on the high symmetry of the CANH and CANL output signals, the TLE9254 provides a very low level of electromagnetic emission (EME) within a wide frequency range.

The TLE9254 fulfills even stringent EMC test limits without external components, such as a common mode choke.

TLE9254 offers low-power management using the stand-by mode with an optimized, very low quiescent current. In stand-by mode the typical quiescent current for one channel of the TLE9254 is below 10 μ A, while the CAN channel can still wake up on a signal on the HS CAN bus.

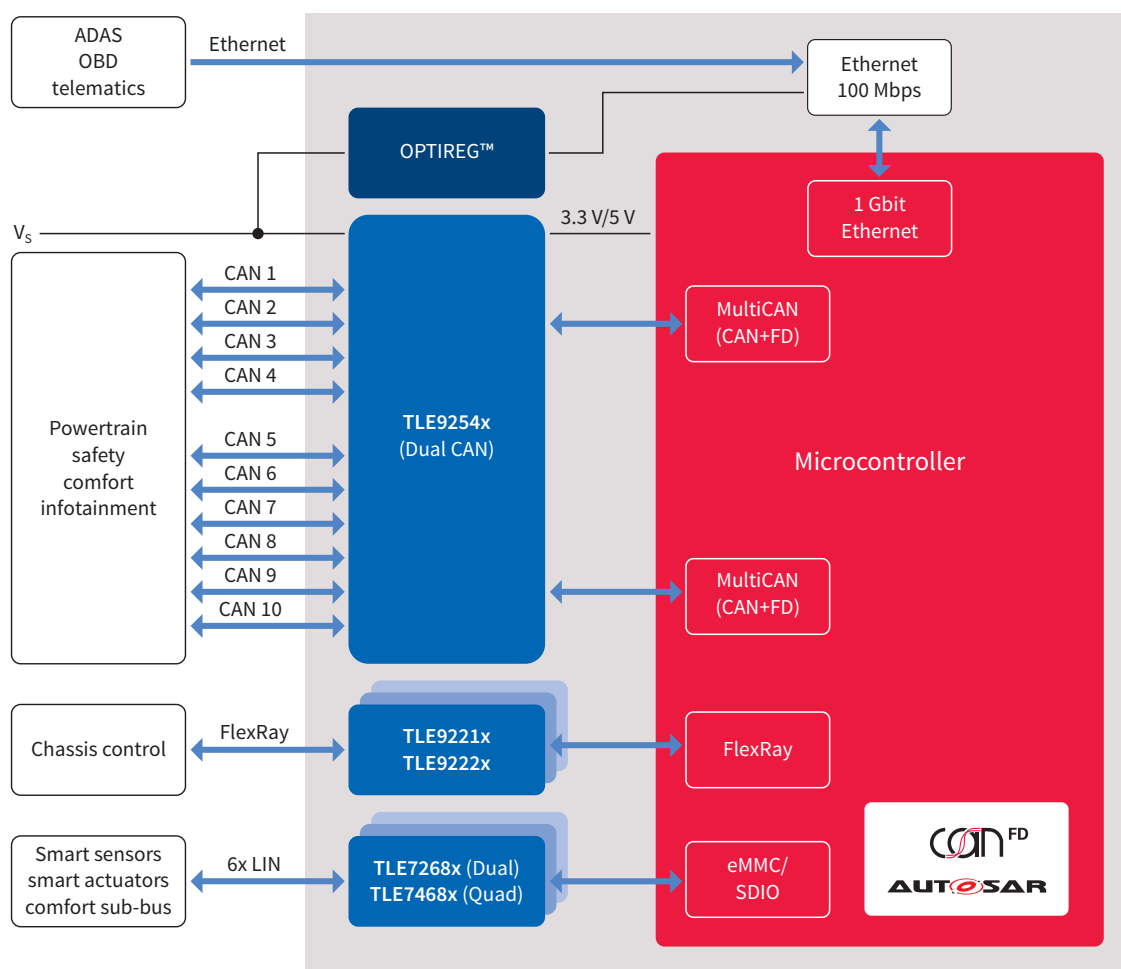
Fail-safe features such as overtemperature protection, output current limitation or the TxD timeout feature are designed to protect the TLE9254 and the external circuitry from irreparable damage. While the transceiver TLE9254 is not supplied, the bus is switched off and exhibits an ideal passive behavior with the lowest possible load to all other subscribers of the HS CAN network.

Additionally all TLE9254Vx variants with VIO input pin can interface either with 3.3 V or 5 V microcontrollers.

Key features

- > Compliant to ISO 11898-2:2016 fulfilling latest ISO requirements including time filter specification (0.5 – 1.8 μ s)
- > Dual channel CAN FD transceiver with very low quiescent current in standby mode
- > Very high CAN FD symmetry to support CAN FD data frames up to 5 Mbit/s
- > VIO input for voltage adaption to the microcontroller supply (TLE9254VSK/TLE9254VLC)
- > Extended supply range on VCC and VIO
- > CAN short circuit proof to ground, to battery and to VCC
- > TxD timeout function
- > Overtemperature protection
- > Protected against automotive transients according to ISO 7637 and SAE J2962-2
- > Stand-by mode with bus wake-up pattern function
- > Transmitter supply VCC can be turned off in stand-by mode

Application example: Central Gateway Module



Product table

Type	Description	SP Number/Ordering part number	Web links
TLE9254LC	CAN FD 5 Mbit/s transceiver with bus wake capability in PG-TSON-14	SP001701314/TLE9254LCXUMA1	www.infineon.com/TLE9254LC
TLE9254SK	CAN FD 5 Mbit/s transceiver with bus wake capability in PG-DSO-14	SP001880770/TLE9254SKXUMA1	www.infineon.com/TLE9254SK
TLE9254VLC	CAN FD 5 Mbit/s transceiver with bus wake capability, VIO pin in PG-TSON-14	SP001880772/TLE9254VLCXUMA1	www.infineon.com/TLE9254VLC
TLE9254VSK	CAN FD 5 Mbit/s transceiver with bus wake capability, VIO pin in PG-DSO-14	SP001880774/TLE9254VSKXUMA1	www.infineon.com/TLE9254VSK

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