

## Product Brief

# TLE9222

## 14-pin FlexRay transceiver



The TLE9222 FlexRay transceiver is designed for data transmission rates starting from 1 Mbit/s up to 10 Mbit/s according to the FlexRay Electrical Physical Layer (EPL) specification 3.0.1. The TLE9222PX is offered in standard TSSOP-14, while the TLE9222LC is realized in a tiny leadless TSON-14 package with Lead Tip Inspection (LTI) feature providing Automated Optical Inspection (AOI) capability. This makes the TLE9222LC the world's smallest FlexRay transceiver available, perfectly suited for applications where tight space restrictions mandate the use of the smallest package, like over the air gateways or chassis control modules.

The Bus Driver (BD) builds the physical interface between a FlexRay node and the communication channel. It provides differential transmit and receive capability to the bus, allowing bidirectional time-multiplexed binary data stream transfer. In addition the TLE9222 provides low power standby operation, supply voltage monitoring (undervoltage detection) as well as bus failure detection.

In bus driver standby mode the quiescent current is decreased to a minimal level while still being able to detect wake-up requests on the bus. Fail safe features, like failure detection and the power supply monitoring, combined with an easy accessible status register support requirements for safety related applications with extended diagnostic features.

The TLE9222 is internally protected against transients on the bus pins, BP and BM. This enables using the TLE9222 for implementing ECUs without additional external bus protection circuitry while fulfilling the latest ESD and ISO pulse requirements of car manufacturers. With its excellent EMC performance the TLE9222 provides a very high immunity against RF disturbances over a broad frequency range and transmits only a minimal level of electromagnetic emission onto the bus.

The TLE9222 is using the latest Infineon Smart Power Technology, especially tailored to withstand the harsh conditions of the automotive environment and qualification according to the AEC-Q100 standard.

### Key features

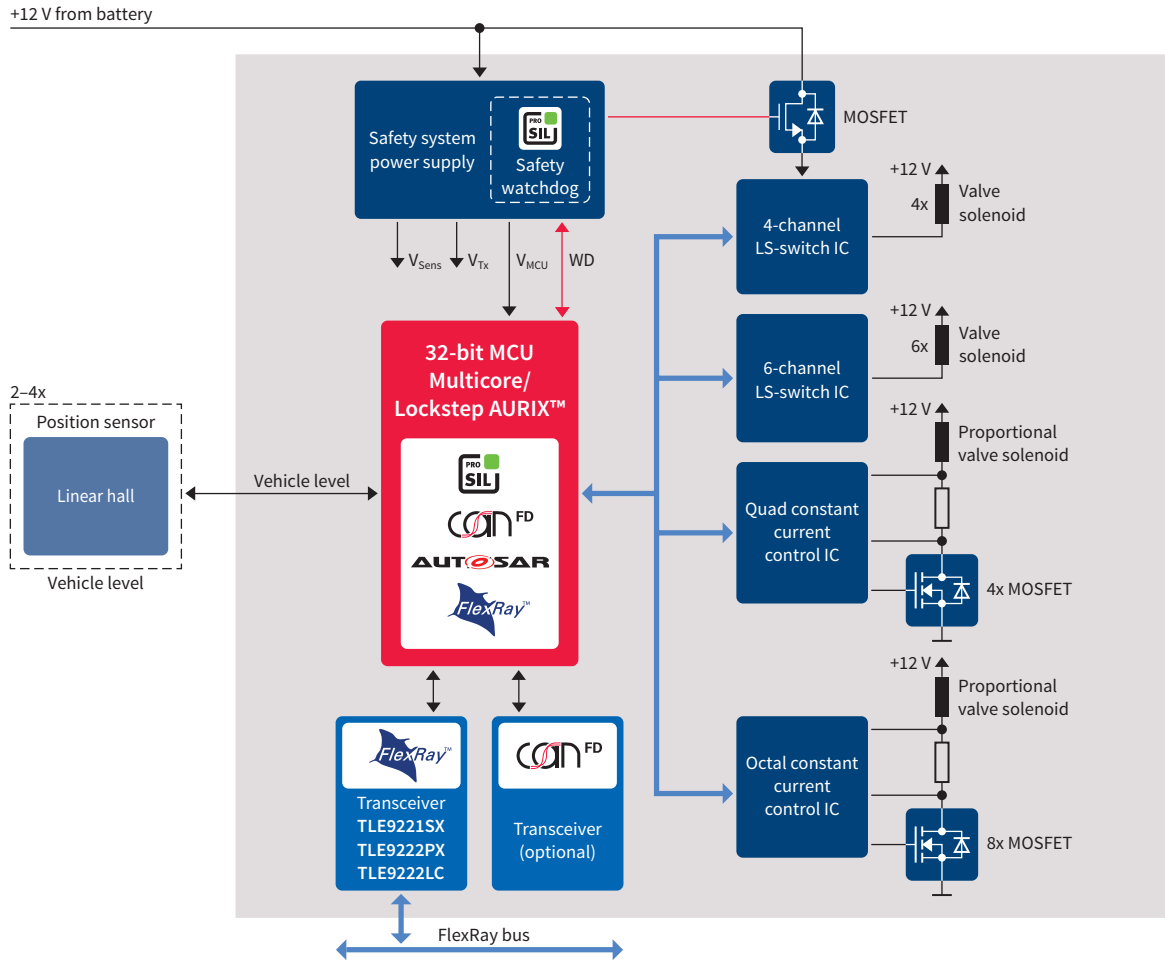
- > Compliant to the FlexRay EPL specification version 3.0.1 and ISO 17458-4
- > Available in TSSOP-14 package and world's smallest TSON-14
- > Optimized for time triggered in-vehicle networks with data-rates from 1 Mbit/s up to 10 Mbit/s
- > Supports minimum bit times down to 60 ns
- > Automatic voltage adaptation on the digital interface pins
- > Bus failure protection and error detection
- > Very high ESD robustness  $\pm 8$  kV according to IEC 61000-4-2
- > Optimized for high Electro-Magnetic Compatibility (EMC)
- > Standby mode with very low quiescent current consumption
- > Remote wake-up detection via wake-up patterns
- > Undervoltage monitoring of the  $V_{CC}$  and the  $V_{IO}$  supply voltages
- > Integrated Bus Guardian interface with enhanced safety feedback
- > Short circuit proof and integrated overtemperature protection
- > Green Product (RoHS compliant)
- > AEC Qualified

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### Application example: suspension control module



### Product summary

Type	Description	SP number/orderable part number
TLE9222PX	FlexRay transceiver with bus wake capability in TSSOP-14	SP001063950/TLE9222PXXUMA1
TLE9222LC	FlexRay transceiver with bus wake capability in tiny TSON-14	SP001335222/TLE9222LCXUMA1

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