

# Dual High-Speed CAN Transceiver with Standby Mode

# TJA1048

# Not Recommended for New Designs

This page contains information on a product that is not recommended for new designs.

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The TJA1048 is a dual high-speed CAN transceiver that provides an interface between a Controller Area Network (CAN) protocol controller and the physical two-wire CAN bus. The transceiver is designed for high-speed CAN applications in the automotive industry, providing the differential transmit and receive capability to (a microcontroller with) a CAN protocol controller.

The TJA1048 belongs to the third generation of high-speed CAN transceivers from NXP Semiconductors, offering significant improvements over first- and second-generation devices such as the TJA1040. It offers improved Electro Magnetic Compatibility (EMC) and ElectroStatic Discharge (ESD) performance, and also features:

- · Ideal passive behavior to the CAN bus when the supply voltage is off
- A very low-current Standby mode with bus wake-up capability on both channels
- Can be interfaced directly to microcontrollers with supply voltages from 3 V to 5 V

The TJA1048 implements the CAN physical layer as defined in the current ISO11898 standard (ISO11898-2:2003, ISO11898-5:2007) and the pending updated version of ISO 11898-2:2016. Pending the release of the updated version of ISO11898-2:2016 including CAN FD and SAE J2284-4/5, additional timing parameters defining loop delay symmetry are specified. This implementation enables reliable communication in the CAN FD fast phase at data rates up to 5 Mbit/s.

These features make the TJA1048 an excellent choice for all types of HS-CAN networks containing more than one HS-CAN interface that require a low-power mode with wake-up capability via the CAN bus, especially for Body Control and Gateway units.

### VIO VCC V<sub>cc</sub>/V<sub>io</sub> Undervoltage Detection 11 **TJA1048** Temperature Protection JĽ $\mathbf{1}$ 13 CANH1 Slope Control and Driver •12 CANL1 $\overline{\mathbf{A}}$ 1 TXD1 Time-out 'cc Normal Receiver STBN1 -14 V<sub>io</sub> Low-power Receiver Wake-up 1 Filter Mode Control 4 Mux and RXD1 Vcc Driver l. Vic $\overline{\mathbf{A}}$ 10 CANH2 Slope Control and Driver 9 CANL2 6 TXD2 Time-out STBN2 -8 Normal Receiver Ł 7 Mux and Wake-up Low-power RXD2 < Driver Receiver Filter 2 5 - GNDB GNDA Æ

# **TJA1048 Block Diagram Block Diagram**

# View additional information for Dual High-Speed CAN Transceiver with Standby Mode.

Note: The information on this document is subject to change without notice.

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