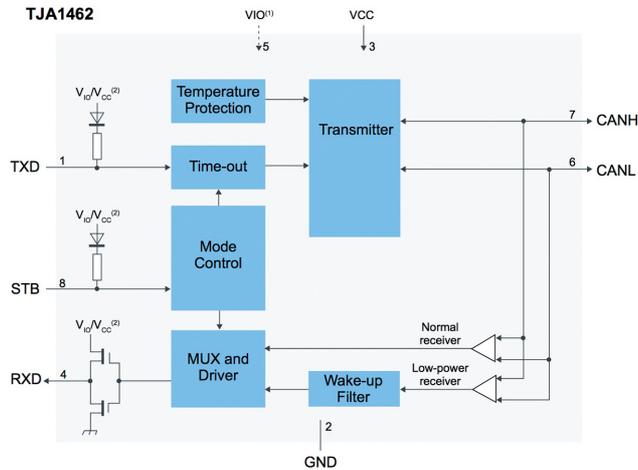


CAN Newsletter Online

CAN SIC TRANSCEIVERS

Improved design freedom

The TJA146X CAN SIC transceiver series confirms with the CiA 601-4 version 2.0.0 specification. The chips are intended to be used in CAN FD networks providing more design flexibility regarding topology.



(Source: NXP)

CAN networks are easy to implement, scalable, and support a large number of devices in complex topologies, but only at bit-rates up to 1 Mbit/s. The introduction of CAN FD allows faster bit-rates, but with the consequence of tight topology restrictions due to signal ringing. This constrained CAN FD to linear networks, restricting design freedom and often increasing cabling and system costs. This is, why CiA (CAN in Automation) members have specified the CAN SIC (signal improvement capability) transceivers.

The TJA146x transceiver family by NXP enables complex topologies by actively improving the CAN signals on the network, significantly reducing ringing effects. Combined with its symmetric transmitter, the products further enable faster communication, with 5 Mbit/s possible in multi-drop networks and potentially even faster (both dependent on the used topology). The transceivers are drop-in replacements for existing CAN transceivers, and are backward compatible with CAN high-speed transceivers.

Developed for CAN FD networks, the CAN SIC transceiver can also be used in Classical CAN networks. The CAN SIC transceivers by NXP allows network design that moves beyond linear topologies. By incorporating not terminated stubs and star points in the network, the total cable length can be reduced, saving on overall cost and weight. Enabling larger topologies and higher bit-rates also brings the potential of combining multiple network branches together into a single network segment. Additionally, if the network relies on external components, such as ferrites, to manage the signal ringing, the TJA146x family can allow these to be directly removed.

The performance of the transceiver series is achieved through NXP's CAN Signal Improvement technology. In effect, the TJA146x delivers tighter bit timing and improved EMC emission and immunity performance, even at higher bit-rates. The products fulfill the CiA 601-4 version 2.0.0 specification and conforms with the ISO 11898-2:2016 standard. The transceivers are already shipped to first OEMs (original equipment manufacturers).



(Source: Adobe Stock)

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