



Figure 8-2. Transceiver plus VREG Functional Block Diagram

8.3 Feature Description

8.3.1 LIN (Local Interconnect Network) Bus

This high voltage input or output pin is a single wire LIN bus transmitter and receiver. The LIN pin can survive transient voltages up to 58 V. Reverse currents from the LIN to supply (V_{SUP}) are minimized with blocking diodes, even in the event of a ground shift or loss of supply (V_{SUP}).

8.3.1.1 LIN Transmitter Characteristics

The transmitter meets thresholds and AC parameters according to the LIN specification. The transmitter is a low side transistor with internal current limitation and thermal shutdown. During a thermal shutdown condition, the transmitter is disabled to protect the device. There is an internal pull-up resistor with a serial diode structure to V_{SUP} , so no external pull-up components are required for the LIN responder node applications. An external pull-up resistor and series diode to V_{SUP} must be added when the device is used for a commander node application. In fast mode, the transmitter can support 200 kbps data rates.

8.3.1.2 LIN Receiver Characteristics

The receiver characteristic thresholds are ratiometric with the device supply pin according to the LIN specification.

The receiver is capable of receiving higher data rates (>100 kbps) than supported by LIN or SAEJ2602 specifications. This allows the TLIN1431x-Q1 to be used for high speed downloads at the end-of-line production or other applications. The actual data rate achievable depends on system time constants (bus capacitance and pull-up resistance) and driver characteristics used in the system. In fast mode the receiver can support 200 kbps.

8.3.1.2.1 Termination

There is an internal pull-up resistor with a serial diode structure to V_{SUP} , so no external pull-up components are required for the LIN responder node applications. An external pull-up resistor (1 k Ω) and a series diode to V_{SUP} must be added when the device is used for commander node applications as per the LIN specification (ISO 17987-4).