TXS0108E (HW-0108) 8-channel, bidirectional 5V-3.3V logic level converter

The TXS0108E (HW-0108) is an 8-channel, bidirectional logic level converter module designed to bridge communication between devices operating at different voltage levels, such as 3.3V and 5V systems. It features automatic direction sensing, meaning it does not require a dedicated direction-control signal to switch between transmitting and receiving data.

Technical Specifications

According to manufacturers like Texas Instruments and technical guides from ProtoSupplies, the module operates within the following parameters:

- **Voltage Range (VCCA):** 1.2V to 3.6V (Lower voltage side).
- **Voltage Range (VCCB):** 1.65V to 5.5V (Higher voltage side).
- **Data Rates:** Supports up to 110 Mbps for push-pull applications and 1.2 Mbps for open-drain applications like I2C.
- **Requirement:** VCCA must always be less than or equal to VCCB.
- **Dimensions:** Approximately 26 x 16 x 3mm.

Key Features

- **Bidirectional Translation:** Allows seamless two-way communication without manual configuration of data direction.
- **Output Enable (OE) Pin:** An active-HIGH pin that enables the device when connected to VCCA. If pulled LOW, it places all I/O pins in a high-impedance state, effectively disabling the module.
- **Protocol Support:** Compatible with various serial interfaces, including I2C, SPI, and UART.
- **Auto-Direction Sensing:** Uses internal edge-rate accelerators to detect and automatically switch the signal direction.