Product Overview

Translate Voltages for I2C

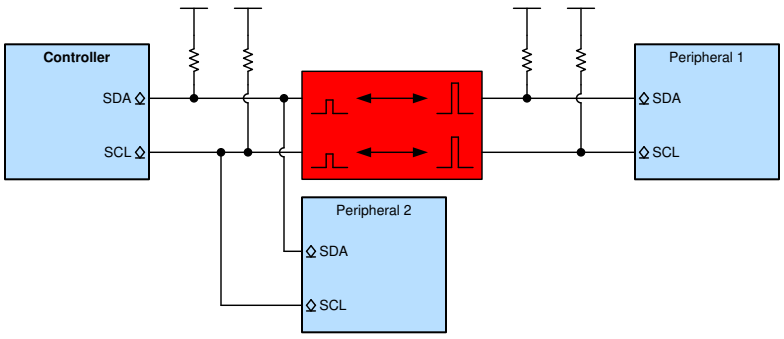

Figure 1. Example I2C Voltage Translation Block Diagram

Design Considerations

- Translators enable communication when devices have mismatched logic voltage levels
- Typically operates at 100 kbps, 400 kbps, or 3.4 Mbps
- Requires auto-bidirectional, open-drain compatible voltage translators
- Prevents damage to devices that cannot support higher voltage inputs
- Improves data rates and signal integrity over discrete translation solutions
- Protects controller while peripheral is not connected
- Need additional assistance? Ask our engineers a question on the *TI E2E™ Logic Support Forum*

Recommended Parts

Table 1. Recommended Parts

Part Number	Automotive Qualified	Voltage Translation Range	Features
LSF0102-Q1	✓	0.95 V to 5.5 V to 0.95 V to 5.5 V	Auto-bidirectional with open-drain support Flexible design with external pull-up resistors See *Understanding the LSF family of bidirectional, multi-voltage level translators* for detailed design instructions
LSF0102			
TXS0102-Q1	✓	1.65 V to 3.6 V to 2.3 V to 5.5 V	Auto-bidirectional with open-drain support One-shot edge accelerators improve signal integrity Internal 10-kΩ pull-up resistors reduce external component count
TXS0102		1.2 V to 3.6 V to 1.65 V to 5.5 V	

For more I2C translation devices, browse through the *online parametric tool* where you can sort by desired voltage, channel numbers, and other features.

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