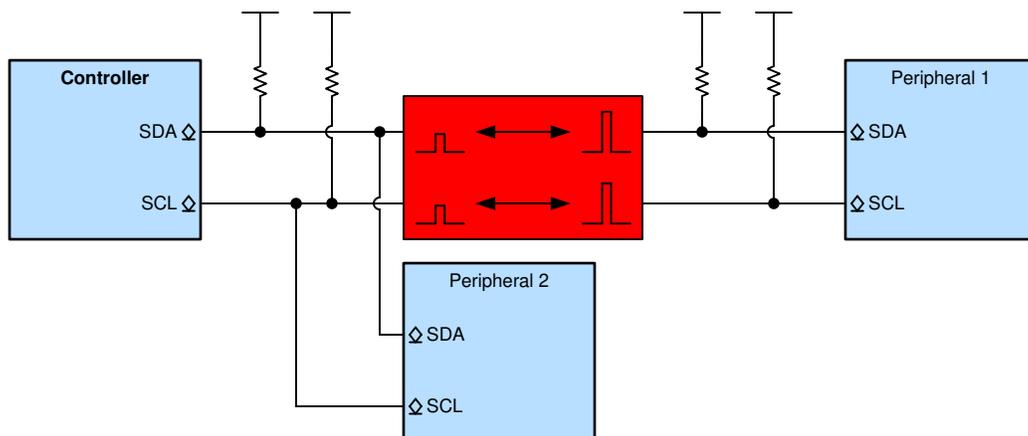


# Translate Voltages for I<sup>2</sup>C



Example of Using Voltage Translation With an I<sup>2</sup>C Communication Bus

## Design Considerations

- Typical data rates can range from 100 kbps – 3.4 Mbps
- Certain I<sup>2</sup>C modes have minimum rise time requirements that may be violated due to the edge-rate acceleration feature in the TXS family
- Enable communication when devices have mismatched logic voltage levels.
- Prevent damage to devices that cannot support higher voltage inputs.
- Improve data rates over discrete translation solutions.
- [\[FAQ\] Why are the TXS01xx VIH/VIL specifications so stringent?](#)
- Need additional assistance? Ask our engineers a question on the [TI E2E™ Logic Support Forum](#).

## Recommended Parts

Part Number	AEC-Q100 Qualified	Voltage Translation Range	Features
<a href="#">LSF0102</a>		0.95 V – 5 V	Over-voltage tolerant I/O Low R <sub>ON</sub> for less signal distortion
<a href="#">LSF0102-Q1</a>	✓		
<a href="#">TXS0102</a>		1.65 V – 5.5 V	Edge-rate acceleration Supports Partial-Power-Down applications Integrated pull-up resistors
<a href="#">TXS0102-Q1</a>	✓		

For more devices, browse through the [online parametric tool](#) where you can sort by desired voltage, channel numbers, and other features.

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