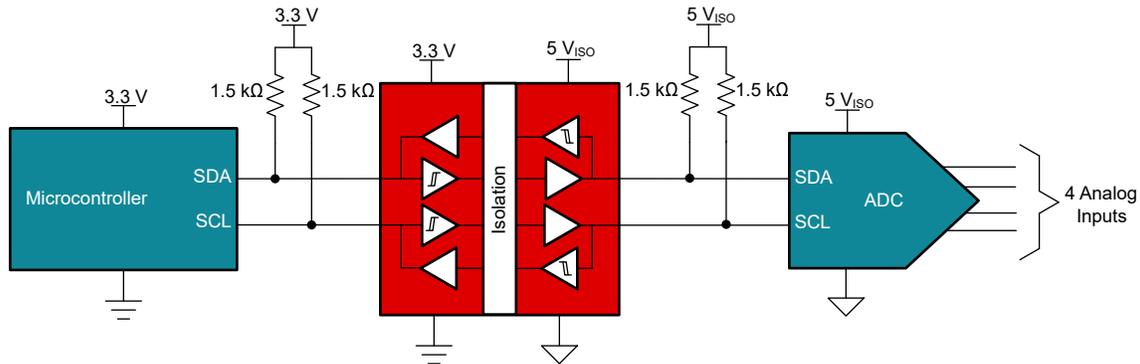


Product Overview

Isolating I2C Signals



Example I2C Isolation Block Diagram

- Prevents DC and unwanted AC currents between controller devices and peripheral ICs
- Allows signal transfer between controller devices and peripheral ICs
- Protects low voltage parts in a system from high voltage circuits
- Diminishes the effect of ground potential differences
- [\[FAQ\] Why is the logic LOW level output voltage, VOL1, up to 0.8 V on Side 1 of the ISO1540/ISO1541 and ISO1640/ISO1641 bidirectional I2C isolators?](#)
- [\[FAQ\] ISO1640: Why are the maximum load capacitance and load current ratings for Side 1 of the ISO1640/ISO1641 less than Side 2?](#)
- [I2C Bus Pullup Resistor Calculation](#)
- [Top 6 design questions about I2C Isolators](#)
- [How do Isolated I2C Buffers with Hot-Swap Capability and IEC ESD Improve Isolated I2C?](#)
- [Digital Isolator Design Guide](#)

Need additional assistance? Ask our engineers a question on the [TI E2E™ Isolation Support Forum](#)

Part Number	AEC-Q100	Voltage Range	Data Rate	Bidirectional SCL Communication	Features
ISO1640		3.0 – 5.5 V (Side 1) 2.25 – 5.5 V (Side 2)	Standard Mode (0 to 100 kbps) Fast Mode (0 to 400 kbps) Fast-Mode Plus (0 to 1 Mbps) High-Speed Mode (0 to 3.4 Mbps)	✓	High CMTI Reinforced Isolation (ISO164xDW) Basic Isolation (ISO164xBD) Hot-Swappable I2C Connections Enhanced EMC
ISO1640-Q1	✓			✓	
ISO1641					
ISO1643				✓	
ESD Protection	Channel Count	Working Voltage	Clamping Voltage	Capacitance	IEC 61000-4-2 IEC 61000-4-5 Rating
TPD1E05U06	1	5.5 V	10 V	0.5 pF	12 kV 2.5 A
TPD2E2U06	2	5.5 V	9.7 V	1.5 pF	25 kV 5.5 A

For additional device options, browse the online parametric search tools for [Isolated I2C Transceivers](#), [Non-Isolated I2C Transceivers](#), and [ESD Protection Devices](#).

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