

2 Bits Bidirectional Voltage Level Translator

Features

- Bidirectional Voltage Translation
- No Direction-Control Signal Required
- Allows Very Low Voltage Translation Down to 1.15V
 - 1.15 V to 5.5 V on A port
 - 1.15 V to 5.5 V on B port
- Maximum Data Rates
 - Up to 20 MHz for push-pull application
 - Up to 3.4 MHz for open-drain application
- Provides High-Impedance I/O Mode to Minimize the Power Consumption
 - High-Impedance at the I/O pins during V_{CCA} or V_{CCB} is ground
 - High-Impedance at the I/O pins by EN = Low
- Robust ESD Protection
 - 8KV HBM per JESD22-A114
- Supports open-drain and push-pull applications such as I²C, SMBus, UART and GPIO
- Package
 - 8-UDFN, 1.2 mm x 1.6 mm

Applications

- I2C, SMBus, MDIO, UART and GPIO
- Smartphones, Tablet PC and Potable Devices

Description

The SM5520 is a 2-bit bidirectional voltage translator that does not require a direction-control signal to interconnect devices operating on different voltage rails that have different I/O voltage levels. The device allows a variety of voltage translations between 1.15 V and 5.5 V in open-drain or push-pull applications. The A and B ports are designed to track V_{CCA} and V_{CCB} power supply rail respectively.

The device does not need the specific power sequence between V_{CCA} and V_{CCB} during power-up or power-down. So, any power supply can be ramped up or down first. The device also provides high-impedance I/O mode to minimize the power consumption. When the input for EN pin is low, all I/O pins on A port and B port are placed in the high-impedance state.

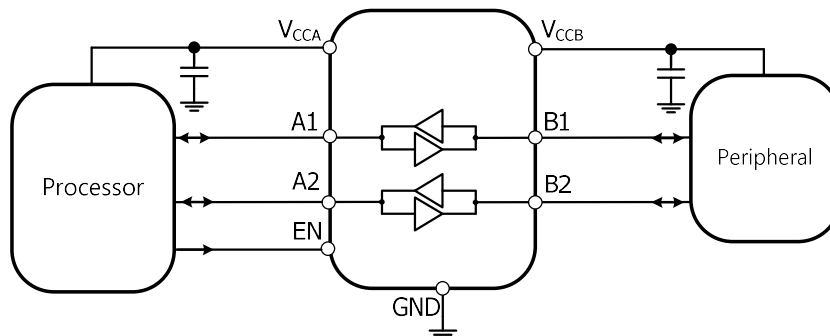
The device integrated 10 k Ω pull-up resistors on the I/O lines on A port and B port to V_{CCA} and V_{CCB} power supply rail respectively.

The SM5520 is available in 8-UDFN.

Device Information

| Part | Package | Size |
|----------|---------|---------------|
| SM5520-D | 8-UDFN | 1.2mm x 1.6mm |

Simplified Block Diagram



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