INTL3306 Product Brief

1. Description

The INTL3306 is a dual bidirectional voltage-level translator compatible with I2C, SMBus, and I3C with an enable (EN) input, and is operational from 0.9-V to 3.3-V VREF1 and 1.8-V to 5.5-V VREF2.The device allows bidirectional voltage translations between 0.85 V and 5 V, without the use of a direction pin.

The low ON-state resistance (RON) of the switch allows connections to be made with minimal propagation delay. When EN is high, the translator switch is ON, and the SCL1 and SDA1 I/O are connected to the SCL2 and SDA2 I/O, respectively, allowing bidirectional data flow between ports. When EN is low, the translator switch is off, and a high-impedance state exists between ports.

In addition to voltage translation, the INTL3306 can be used to isolate a higher speed bus from a lower speed bus by controlling the EN pin to disconnect the slower bus during fast-mode communication.

2. Features

- Standard-mode, fast-mode, and fast-mode plus I^2C and SMBus compatible
- I3C compatible (12.5 MHz supported)
- Allows voltage-level translation between
  - 0.9V V_{REF1} and 1.8V、2.5V、3.3V、5V V_{REF2}
  - 1.0V V_{REF1} and 1.8V、2.5V、3.3V、5V V_{REF2}
  - 1.2V V_{REF1} and 1.8V、2.5V、3.3V、5V V_{REF2}
  - 1.8V V_{REF1} and 2.5V、3.3V、5V V_{REF2}
  - 2.5V V_{REF1} and 3.3V、5V V_{REF2}
  - 3.3V V_{REF1} and 5V V_{REF2}
- Provides bidirectional voltage translation with no direction Pin
- Low ON-state resistance between input and output ports provides less signal distortion
- Open-drain I^2C I/O ports (SCL1, SDA1, SCL2, and SDA2)
- 5-V Tolerant I^2C I/O ports to support mixed-mode signal operation
- High-impedance SCL1, SDA1, SCL2, and SDA2 pins for EN = Low
- Lockup-free operation for isolation when EN = Low
- Flow-through pinout for ease of printed-circuit- board trace routing

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- ESD Irotection Exceeds JESD 22
  - 6000-V human-body model (JS-001-2017)
  - 2000-V charged-device model (JS-002-2022)

3. Applications

- I^2C, SMBus, PMBus, MDIO, UART, low-speed SDIO, GPIO, and other two-signal interfaces
- Servers
- Routers (telecom switching equipment)
- Personal computers
- Industrial automation

4. Functional Diagram

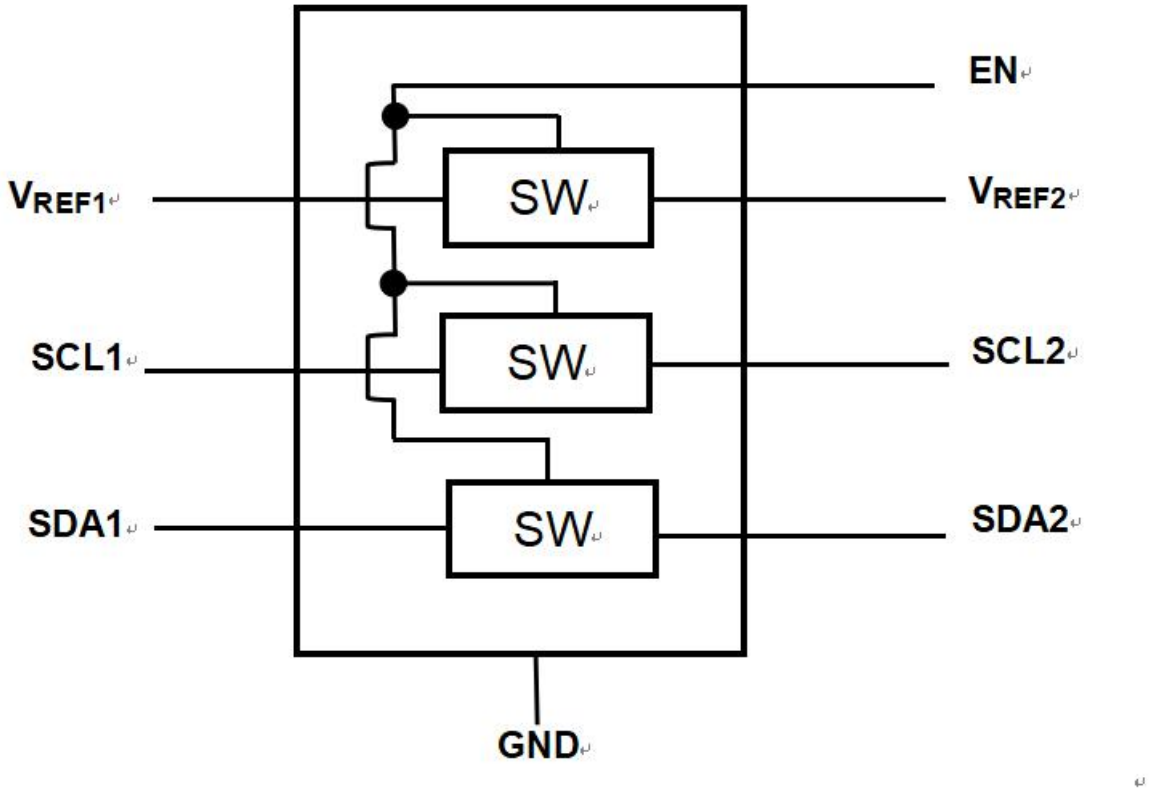

Figure 1 Functional Diagram