

4-Bit Bidirectional Voltage Level Translator for Open Drain and Push-Pull Applications

Features

- 4-Bit Bidirectional Translator for Open Drain and Push-Pull Bus Applications
- I²C and SMBus Compatible
- Less than 1.5ns Maximum Propagation Delay to Accommodate Standard-Mode and Fast-Model I²C Devices and Multiple Masters
- Allows Voltage-Level Translator Between
- 1.8V V_{CCA} and 2.5V, 3.3V, 5V V_{CCB}
- + 2.5V V_{CCA} and 3.3V, 5V V_{CCB}
- + 3.3V $\ensuremath{\text{V}_{\text{CCA}}}$ and 5V $\ensuremath{\text{V}_{\text{CCB}}}$
- $V_{CCA} \leq V_{CCB}$
- Provides Bidirectional Voltage Translation without Direction Pin
- Max Data Rates
 - 24Mbps for Push Pull
 - Over 1.3Mbps for Open Drain
- Low 3.5Ω ON-State Connection Between Input and Output Ports Provides Less Signal Distortion
- Open-Drain I²C I/O Ports
- 5V Tolerant I²C I/O Ports to Support Mixed Mode Signal Operation
- High Impedance A_N and B_N Pins for OE=Low
- Lock-up-Free Operation for Isolation When OE=Low
- IEC 61000-4-2 Level 4 (±8kV Contact Discharge and ±15kV Air-gap Discharge) ESD Protection for pins B1, B2, B3, B4, OE and VCCB. 2kV HBM IEC61340-3-1 Protection for All Other Pins.

General Description

The G3402 is a qual bidirectional I^2C and SMBUS voltage-level translator with an output enable (OE) input, and is operational from 1.2V to 3.3V V_{CCA} and 2.5V to 5.5V V_{CCB} . It allows bidirectional voltage translations between 1.2V and 5V, without use of directional pin. The low ON-state resistance (r_{ON}) of the switch ensures the connections to be with minimal propagation delay. When OE is high, the translator switch is ON, and the A_N I/O are connected to the B_N I/O, respectively, allowing bidirectional data flow between ports. When OE is low, the translator switch is off, and a high-impedance exists between ports.

Pull-up resistors are included on input and output lines internally to provide the logic high levels on the translator's bus. The size of the pull-up resistors are $10k\Omega,$ and is allowed to use lower pull-up resistor value to minimal $1k\Omega$ by adding external resistor.

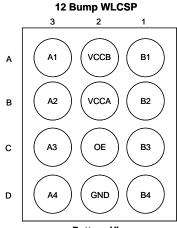
All channels have the same electrical characteristics, and there is minimal deviation from one output to another in voltage or propagation delay. This is a benefit over discrete translation solutions, since the fabrication of the switch is symmetrical.

Ordering Information

ORDER NUMBER	MARKING	TEMP. RANGE	PACKAGE (Green)
G3402B51U	3402	-40°C to 85°C	WLCSP3X4-12
G3402B51D	3402	-40°C to 85°C	WLCSP3X4-12

Note: B5: WLCSP3X4-12 1: Bonding Code U & D: Tape & Reel

Pin Configuration



Bottom View WI CSP3X4-12

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TEL: 886-3-5788833

http://www.gmt.com.tw