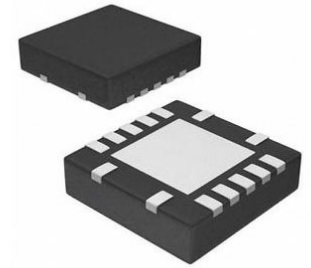


## Voltage Level Translator 4-CH Bidirectional 14-Pin VQFN EP

T/R



Images are for reference only

[Inquiry](#)

**Manufacturer:** [Texas Instruments, Inc](#)

**Package/Case:** VQFN14

**Product Type:** Logic ICs

**RoHS:** RoHS Compliant/Lead free 

**Lifecycle:** Active

### General Description

This 4-bit non-inverting translator uses two separate configurable power-supply rails. The A port is designed to track VCCA. VCCA accepts any supply voltage from 1.65 V to 3.6 V. VCCA must be less than or equal to VCCB. The B port is designed to track VCCB. VCCB accepts any supply voltage from 2.3 V to 5.5 V. This allows for low-voltage bidirectional translation between any of the 1.8-V, 2.5-V, 3.3-V, and 5-V voltage nodes.

When the output-enable (OE) input is low, all outputs are placed in the high-impedance state.

The TXS0104E is designed so that the OE input circuit is supplied by VCCA.

To ensure the high-impedance state during power up or power down, OE should be tied to GND through a pull-down resistor; the minimum value of the resistor is determined by the current-sourcing capability of the driver.

## Key Features

No Direction-Control Signal Needed

Max Data Rates  
24 Mbps (Push Pull)

2 Mbps (Open Drain)

Available in the Texas Instruments NanoFree<sup>®</sup> Package

1.65 V to 3.6 V on A port and 2.3 V to 5.5 V on B port ( $V_{CCA} \leq V_{CCB}$ )

No Power-Supply Sequencing Required –  $V_{CCA}$  or  $V_{CCB}$  Can Be Ramped First

Latch-Up Performance Exceeds 100 mA Per JESD 78, Class II

ESD Protection Exceeds JESD 22  
A Port  
2000-V Human-Body Model (A114-B)

200-V Machine Model (A115-A)

1000-V Charged-Device Model (C101)

B Port  
15-kV Human-Body Model (A114-B)

200-V Machine Model (A115-A)

1000-V Charged-Device Model (C101)

IEC 61000-4-2 ESD (B Port)  
 $\pm 8$ -kV Contact Discharge

$\pm 10$ -kV Air-Gap Discharge

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### Description

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When the output-enable (OE) input is low, all outputs are placed in the high-impedance state.

The TXS0104E is designed so that the OE input circuit is supplied by  $V_{CCA}$ .

To ensure the high-impedance state during power up or power down, OE should be tied to GND through a pull-down resistor; the minimum value of the resistor is determined by the current-sourcing capability of the driver.

## Recommended For You

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### **TXB0102YZPR**

Texas Instruments, Inc

DSBGA-8

### **TXB0102DCUR**

Texas Instruments, Inc

VSSOP8

### **TXS0104EDR**

Texas Instruments, Inc

SOP14

**TXB0108PWR**

Texas Instruments, Inc  
TSSOP20

**TXS0104EPWR**

Texas Instruments, Inc  
TSSOP14

**TXS0102QDCURQ1**

Texas Instruments, Inc  
VSSOP8

**TXS0104EQPWRQ1**

Texas Instruments, Inc  
TSSOP14

**TXB0104QRGYRQ1**

Texas Instruments, Inc  
VQFN14

**TXB0104QRUIRQ1**

Texas Instruments, Inc  
UQFN12

**TXS0102DCTT**

Texas Instruments, Inc  
SSOP8

**TXS0102DCUT**

Texas Instruments, Inc  
VSSOP8

**TXS0102YZPR**

Texas Instruments, Inc  
DSBGA-8

**TXB0104QPWRQ1**

Texas Instruments, Inc  
TSSOP14

**TXS0104ED**

Texas Instruments, Inc  
SOP14

**TXB0101DRLR**

Texas Instruments, Inc  
SOT563