

## Voltage Level Translator 2-CH Bidirectional Automotive 8-Pin VSSOP T/R

<b>Manufacturer:</b>	<a href="#">Texas Instruments, Inc</a>	<input type="text" value="TXS0102QDCURQ1 Image"/>
<b>Package/Case:</b>	VSSOP8	Images are for reference only
<b>Product Type:</b>	Logic ICs	<input type="button" value="Inquiry"/>
<b>RoHS:</b>	RoHS Compliant/Lead free 	
<b>Lifecycle:</b>	Active	

### General Description

The TXS0102-Q1 device connects an incompatible logic communication from chip-to-chip due to voltage mismatch. This auto-direction translator can be conveniently used to bridge the gap without the need of direction control from the host. Each channel can be mixed and matched with different output types (open-drain or push-pull) and mixed data flows (transmit or receive) without intervention from the host. This 4-bit noninverting translator uses two separate configurable power-supply rails. The A and B ports are designed to track  $V_{CCA}$  and  $V_{CCB}$  respectively. The  $V_{CCB}$  pin accepts any supply voltage from 2.3 V to 5.5 V while the  $V_{CCA}$  pin accepts any supply voltage from 1.65 V to 3.6 V such that  $V_{CCA}$  is less than or equal to  $V_{CCB}$ . This tracking 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 TXS0102-Q1 device is designed so that the OE input circuit is supplied by  $V_{CCA}$ .

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

## Key Features

Qualified for Automotive Applications

AEC-Q100 Qualified With the Following Results:

Device Temperature Grade 1:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  Ambient Operating Temperature Range

Device HBM ESD Classification Level 2

Device CDM ESD Classification Level C5

ESD Protection per JESD 22

A Port

2500-V Human-Body Model (A114-B)

750-V Charged-Device Model (C101)

B Port

8-kV Human-Body Model (A114-B)

750-V Charged-Device Model (C101)

No Direction-Control Signal Required

Maximum Data Rates

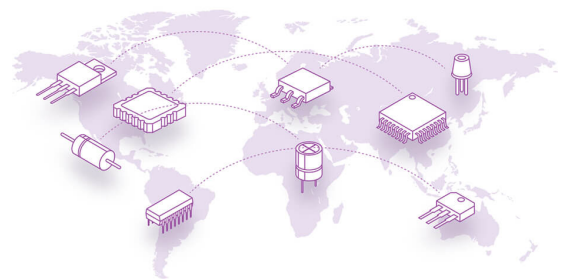
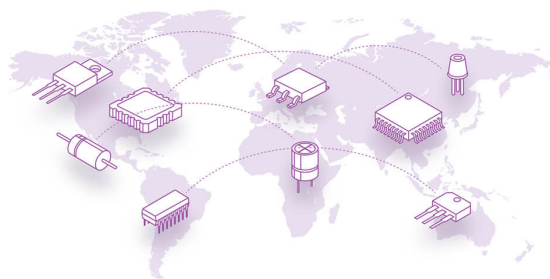
24 Mbps Maximum (Push Pull)

2 Mbps (Open Drain)

Available in the Texas Instruments NanoFree 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



## 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

**TXS0104EQPWRQ1**

Texas Instruments, Inc  
TSSOP14

**TXB0104QRGYRQ1**

Texas Instruments, Inc  
VQFN14

**TXB0104QRUTRQ1**

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

**TXB0101DBVR**

Texas Instruments, Inc  
SOT23