

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

<b>Manufacturer:</b>	<a href="#">Texas Instruments, Inc</a>	<input type="text" value="TCA9406DCUR 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 TCA9406 is a 2-bit bidirectional I2C and SMBus voltage-level translator with an output enable (OE) input. It is operational from 1.65 V to 3.6 V on the A-side, referenced to VCCA, and from 2.3 V to 5.5 V on the B-side, referenced to VCCB. This allows the device to interface between lower and higher logic signal levels at any of the typical 1.8-V, 2.5-V, 3.3-V, and 5-V supply rails.

The OE input pin is referenced to VCCA, can be tied directly to VCCA, but it is also 5.5-V tolerant. The OE pin can also be controlled and set to a logic low to place all the SCL and SDA pins in a high-impedance state, which significantly reduces the quiescent current consumption.

Under normal I2C and SMBus operation or other open-drain configurations, the TCA9406 can support up to 2 Mbps; therefore, it is compatible with standard I2C speeds where the frequency of SCL is 100 kHz (Standard-mode), 400 kHz (Fast-mode), or 1 MHz (Fast-mode Plus). The device can also be used as a general purpose level translator, and when the A- and B-side ports are both driven with push-pull devices the TCA9406 can support up to 24 Mbps.

The TCA9406 features internal 10-k $\Omega$  pullup resistors on SCL\_A, SDA\_A, SCL\_B, and SDA\_B. Additional external pullup resistors can be added to the bus to reduce the total pullup resistance and speed up rising edges.

## Key Features

2-Bit Bidirectional Translator for SDA and SCL Lines in I2C Applications

Provides Bidirectional Voltage Translation With No Direction Pin

High-Impedance Output SCL\_A, SDA\_A, SCL\_B, SDA\_B Pins When OE = Low or VCC = 0 V

Internal 10-k $\Omega$  Pullup Resistor on All SDA and SCL Pins

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

VCC Isolation Feature: If Either VCC Input Is at GND, Both Ports Are in the High-Impedance State

No Power-Supply Sequencing Required: Either VCCA or VCCB Can Be Ramped First

Low Ioff of 2  $\mu$ A When Either VCCA or VCCB = 0 V

OE Input Can Be Tied Directly to VCCA Or Controlled By GPIO

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

ESD Protection Exceeds JESD 22

A Port

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

250-V Machine Model (A115-A)

1500-V Charged-Device Model (C101)

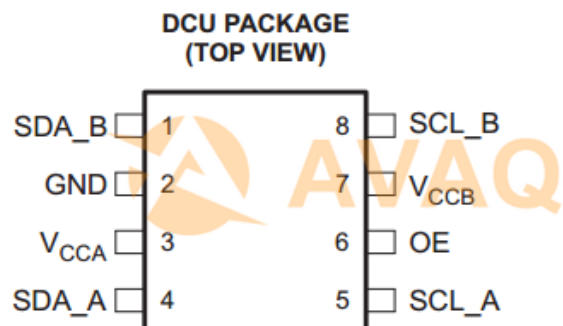
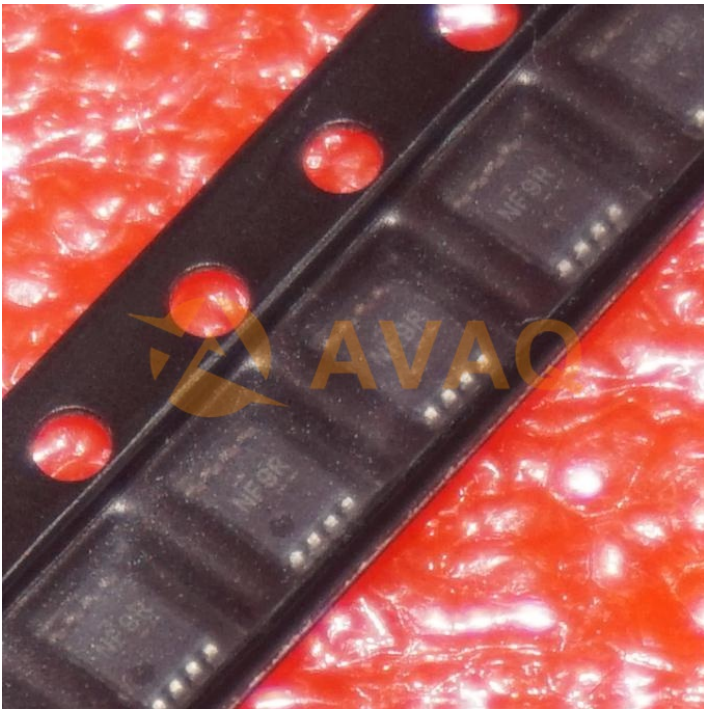
B Port

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

250-V Machine Model (A115-A)

1500-V Charged-Device Model (C101)

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## Recommended For You

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### **TCA9406YZPR**

Texas Instruments, Inc  
DSBGA8

### **TCA39306DTMR**

Texas Instruments, Inc  
X2SON8

### **TCM5089N**

Texas Instruments, Inc  
DIP

### **TCA9416DTMR**

Texas Instruments, Inc  
X2SON8

### **TCA9406DCIR**

Texas Instruments, Inc  
MSOP8

### **TCA39306DCURQ1**

Texas Instruments, Inc  
VSSOP8

### **SN74S38N**

Texas Instruments, Inc  
DIP

### **SN7438N**

Texas Instruments, Inc  
DIP14

### **CD4070BE**

Texas Instruments, Inc  
DIP14

### **SN75462P**

Texas Instruments, Inc  
DIP8

### **CD74HCT138E**

Texas Instruments, Inc  
DIP16

### **CD4098BE**

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DIP

### **CD74HC08E**

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DIP

### **SN74F08D**

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SOP-14

### **SN74LS257BN**

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