


## I2C Buffer 3.3V/5V 8-Pin VSSOP T/R

<b>Manufacturer:</b>	<a href="#">Texas Instruments, Inc</a>
<b>Package/Case:</b>	MSOP-8
<b>Product Type:</b>	Drivers
<b>RoHS:</b>	RoHS Compliant/Lead free 
<b>Lifecycle:</b>	Active



Images are for reference only

[Inquiry](#)

### General Description

The TCA4311A is a hot-swappable I2C bus buffer that supports I/O card insertion into a live backplane without corruption of the data and clock busses. Control circuitry prevents the backplane from being connected to the card until a stop command or bus idle occurs on the backplane without bus contention on the card. When the connection is made, this device provides bidirectional buffering, keeping the backplane and card capacitances isolated. During insertion, the SDA and SCL lines are pre-charged to 1 V to minimize the current required to charge the parasitic capacitance of the chip. When the I2C bus is idle, the TCA4311A can be put into shutdown mode by setting the EN pin low. When EN is high, the TCA4311A resumes normal operation. It also includes an open drain READY output pin, which indicates that the backplane and card sides are reconnected together. When READY is high, the SDA<sub>IN</sub> and SCL<sub>IN</sub> are connected to SDA<sub>OUT</sub> and SCL<sub>OUT</sub>. When the two sides are disconnected, READY is low. Both the backplane and card may be powered with supply voltages ranging from 2.7 V to 5.5V, with no restrictions on which supply voltage is higher. The TCA4311A has standard open-drain I/Os. The size of the pull-up resistors to the I/Os depends on the system, but each side of this buffer must have a pull-up resistor. The device is designed to work with Standard Mode and Fast Mode I2C devices in addition to SMBus devices. Standard Mode I2C devices only specify 3 mA in a generic I2C system where Standard Mode devices and multiple masters are possible. Under certain conditions, high termination currents can be used.

## Key Features

Operating Power-Supply Voltage Range of 2.7 V to 5.5 V

Supports Bidirectional Data Transfer of I2C Bus Signals

1-V Precharge on all SDA and SCL Lines Prevents Corruption During Live Board Insertion and Removal From Backplane

SDA and SCL Input Lines are Isolated From Outputs

Accommodates Standard Mode and Fast Mode I2C Devices

Improved Noise Immunity

Applications Include Hot Board Insertion and Bus Extension

Low ICC Chip Disable of  $< 1 \mu\text{A}$

READY Open-Drain Output

Supports Clock Stretching, Arbitration, and Synchronization

Powered-Off High-Impedance I2C Pins

Open-Drain I2C Pins

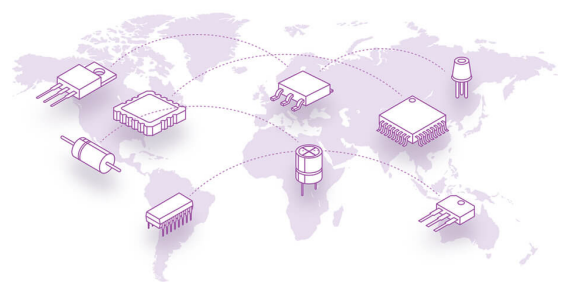
Latch-Up Performance Exceeds 100 mA Per JESD 78, Class II

ESD Protection Exceeds JESD 22

8000-V Human-Body Model (A114-A)

200-V Machine Model (A115-A)

1000-V Charged-Device Model (C101)



## Recommended For You

**TCA9534PWR**

Texas Instruments, Inc  
TSSOP16

**TCA9517DR**

Texas Instruments, Inc  
SOP8

**TCA6416APWR**

Texas Instruments, Inc  
TSSOP24

**TCA6416ARTWR**

Texas Instruments, Inc  
WQFN24

**TCA9554APWR**

Texas Instruments, Inc  
TSSOP16

**TCA9539QPWRQ1**

Texas Instruments, Inc  
TSSOP24

**TCA6408APWR**

Texas Instruments, Inc  
TSSOP16

**TCA9535DBR**

Texas Instruments, Inc  
SSOP24

**TCA9517DGKRQ1**

Texas Instruments, Inc  
VSSOP8

**TCA6408AQPWRQ1**

Texas Instruments, Inc  
TSSOP16

**TCA9535DBT**

Texas Instruments, Inc  
SSOP24

**TCA9803DGKR**

Texas Instruments, Inc  
MSOP8

**TCA9554ADBQR**

Texas Instruments, Inc  
SSOP16

**TCA9534APWR**

Texas Instruments, Inc  
TSSOP16

**TCA9536DGKR**

Texas Instruments, Inc  
VSSOP-8