Voltage Level Translator 16-CH Bidirectional 48-Pin TSSOP T/R

Manufacturer:	Texas Instruments, Inc
Package/Case:	TSSOP48
Product Type:	Logic ICs
RoHS:	RoHS Compliant/Lead free RoHS
Lifecycle:	Active

SN74AVC16T245DGGR Image

Images are for reference only

Inquiry

General Description

This 16-bit noninverting bus transceiver uses two separate configurable power-supply rails. The SN74AVC16T245 device is optimized to operate with VCCA/VCCB set at 1.4 V to 3.6 V. The device is operational with VCCA/VCCB as low as 1.2 V. The A port is designed to track VCCA. VCCA accepts any supply voltage from 1.2 V to 3.6 V. The B port is designed to track VCCB. VCCB accepts any supply voltage from 1.2 V to 3.6 V. This allows for universal low-voltage bidirectional translation between any of the 1.2-V, 1.5-V, 1.8-V, 2.5-V, and 3.3-V voltage nodes.

The SN74AVC16T245 device is designed for asynchronous communication between data buses. The device transmits data from the A bus to the B bus or from the B bus to the A bus, depending on the logic level at the direction-control (DIR) input. The output-enable (OE) input can be used to disable the outputs so the buses effectively are isolated.

The SN74AVC16T245 control pins (1DIR, 2DIR, 1OE, and 2OE) are supplied by VCCA.

This device is fully specified for partial-power-down applications using Ioff. The Ioff circuitry disables the outputs, preventing damaging current backflow through the device when it is powered down.

The VCC isolation feature ensures that if either VCC input is at GND, both ports are in the high-impedance state.

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

Key Features

Control Inputs VIH/VIL Levels Are Referenced to VCCA Voltage

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

Overvoltage-Tolerant Inputs and Outputs Allow Mixed-Voltage-Mode Data Communications

Fully Configurable Dual-Rail Design Allows Each Port to Operate Over the Full 1.2 V to 3.6 V Power-Supply Range

Ioff Supports Partial-Power-Down Mode Operation

I/Os Are 4.6 V Tolerant

Maximum Data Rates
380 Mbps (1.8 V to 3.3 V Level-Shifting)

200 Mbps (<1.8 V to 3.3 V Level-Shifting)

200 Mbps (Level-Shifting to 2.5 V or 1.8 V)

150 Mbps (Level-Shifting to 1.5 V)

100 Mbps (Level-Shifting to 1.2 V)

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)

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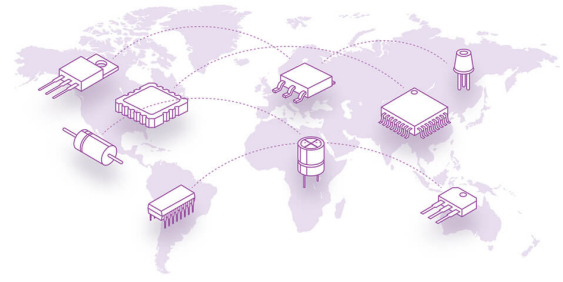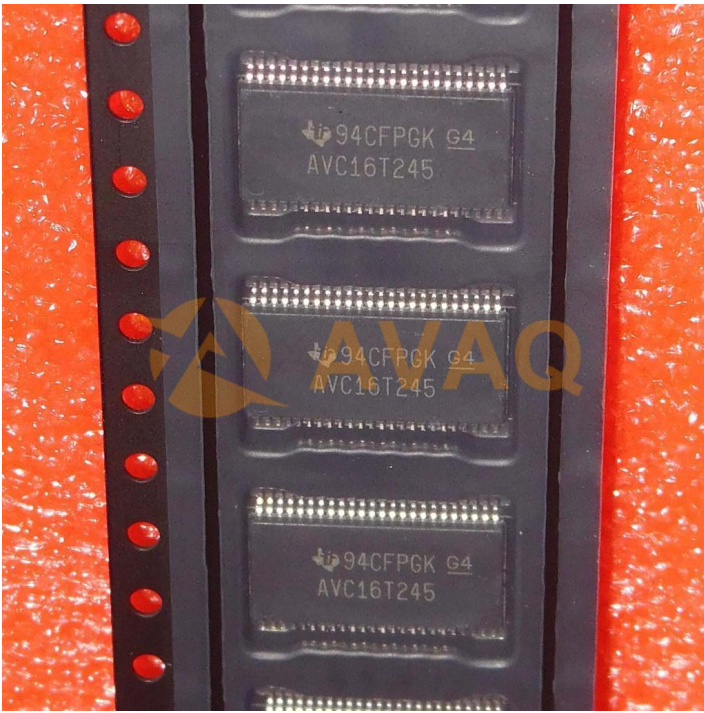
Recommended For You

SN74S38N

Texas Instruments, Inc

DIP

SN7438N

Texas Instruments, Inc

DIP14

SN75462P

Texas Instruments, Inc

DIP8

SN74F08D

Texas Instruments, Inc

SOP-14

SN74LS257BN

Texas Instruments, Inc

DIP16

SN75452BP

Texas Instruments, Inc

DIP8

SN74LS245DW

Texas Instruments, Inc

SOP20

SN74LS74AN

Texas Instruments, Inc

DIP

SN74S74N

Texas Instruments, Inc

DIP

SN7406N

Texas Instruments, Inc

DIP-14

SN74CBTLV3257D

Texas Instruments, Inc

SOP-16P

SN74HC138DR

Texas Instruments, Inc

SOP16

SN74LS14N

Texas Instruments, Inc

DIP

SN74HC139N

Texas Instruments, Inc

DIP

SN74LS244N

Texas Instruments, Inc

DIP