

Voltage Level Translator 1-CH Bidirectional 6-Pin SOT-23
T/R

Manufacturer:	Texas Instruments, Inc	SN74AVC1T45DBVR Image
Package/Case:	SOT23-6	Images are for reference only
Product Type:	Logic ICs	Inquiry
RoHS:	RoHS Compliant/Lead free 	
Lifecycle:	Active	

General Description

This single-bit noninverting bus transceiver uses two separate configurable power-supply rails. The SN74AVC1T45 is optimized to operate with VCCA/VCCB set at 1.4 V to 3.6 V. It 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 SN74AVC1T45 is designed for asynchronous communication between two data buses. The logic levels of the direction-control (DIR) input activate either the B-port outputs or the A-port outputs. The device transmits data from the A bus to the B bus when the B-port outputs are activated and from the B bus to the A bus when the A-port outputs are activated. The input circuitry on both A and B ports always is active and must have a logic HIGH or LOW level applied to prevent excess ICC and ICCZ.

The SN74AVC1T45 is designed so that the DIR input is powered 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, then both ports are in the high-impedance state.

NanoFree package technology is a major breakthrough in IC packaging concepts, using the die as the package.

Key Features

Available in the Texas Instruments NanoFree Package

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

VCC Isolation Feature - If Either VCC Input Is At GND, Both Ports Are In The High-Impedance State

DIR Input Circuit Referenced to VCCA

±12-mA Output Drive at 3.3 V

I/Os Are 4.6-V Tolerant

Ioff Supports Partial-Power-Down Mode Operation

Typical Max Data Rates

500 Mbps (1.8-V to 3.3-V Translation)

320 Mbps (<1.8-V to 3.3-V Translation)

320 Mbps (Translate to 2.5 V or 1.8 V)

280 Mbps (Translate to 1.5 V)

240 Mbps (Translate to 1.2 V)

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

ESD Protection Exceeds JESD 22

±2000-V Human Body Model (A114-A)

200-V Machine Model (A115-A)

±1000-V Charged-Device Model (C101)

Description

This single-bit noninverting bus transceiver uses two separate configurable power-supply rails. The SN74AVC1T45 is optimized to operate with VCCA/VCCB set at 1.4 V to 3.6 V. It 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.

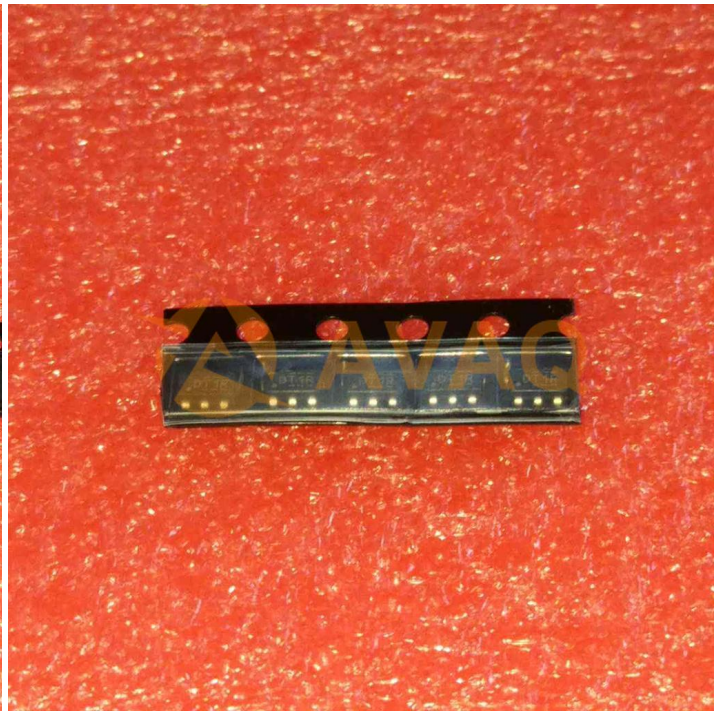
The SN74AVC1T45 is designed for asynchronous communication between two data buses. The logic levels of the direction-control (DIR) input activate either the B-port outputs or the A-port outputs. The device transmits data from the A bus to the B bus when the B-port outputs are activated and from the B bus to the A bus when the A-port outputs are activated. The input circuitry on both A and B ports always is active and must have a logic HIGH or LOW level applied to prevent excess ICC and ICCZ.

The SN74AVC1T45 is designed so that the DIR input is powered 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, then both ports are in the high-impedance state.

NanoFree? package technology is a major breakthrough in IC packaging concepts, using the die as the package.



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

SN74CBILV3257D

Texas Instruments, Inc

SOP-16P

SN74HC138DR

Texas Instruments, Inc

SOP16

SN74LS14N

Texas Instruments, Inc

DIP

SN74HC139N

Texas Instruments, Inc

DIP

SN74AVC16T245DGGR

Texas Instruments, Inc

TSSOP48