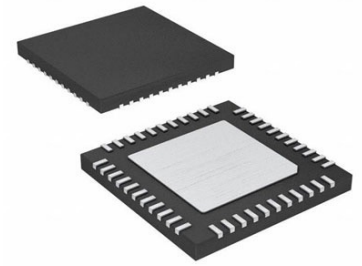


Voltage Level Translator 4-CH Bidirectional Automotive 12-Pin UQFN T/R



Images are for reference only

[Inquiry](#)

Manufacturer: [Texas Instruments, Inc](#)

Package/Case: UQFN12

Product Type: Logic ICs

RoHS: RoHS Compliant/Lead free 

Lifecycle: Active

General Description

The LSF family consists of bidirectional voltage level translators that operate from 0.8V to 4.5 V (Vref_A) and 1.8 V to 5.5 V (Vref_B). This range allows for bidirectional voltage translations between 0.8 V and 5.0 V without the need for a direction terminal in open-drain or push-pull applications. The LSF family supports level translation applications with transmission speeds greater than 100 MHz for open-drain systems that utilize a 15-pF capacitance and 165-Ω pull-up resistor.

When the An or Bn port is LOW, the switch is in the ON-state and a low resistance connection exists between the An and Bn ports. The low Ron of the switch allows connections to be made with minimal propagation delay and signal distortion. The voltage on the A or B side will be limited to Vref_A and can be pulled up to any level between Vref_A and 5 V. This functionality allows a seamless translation between higher and lower voltages selected by the user without the need for directional control.

The supply voltage (Vpu#) for each channel may be individually set up with a pull up resistor. For example, CH1 may be used in up-translation mode (1.2 V 3.3 V) and CH2 in down-translation mode (2.5 V 1.8 V).

When EN is HIGH, the translator switch is on, and the An I/O is connected to the Bn I/O, respectively, allowing bidirectional data flow between ports. When EN is LOW, the translator switch is off, and a high-impedance state exists between ports. The EN input circuit is designed to be supplied by Vref_A. EN must be LOW to ensure the high-impedance state during power-up or power-down.

Key Features

Provides bidirectional voltage translation with no direction terminal

Supports up to 100-MHz up translation and greater than 100-MHz down translation at ≤ 30 -pF capacitor load and up to 40-MHz up/down translation at 50-pF capacitor load

Supports Ioff, partial power-down mode (refer to Feature Description)

Allows bidirectional voltage level translation between
0.8 V ? 1.8, 2.5, 3.3, 5 V

1.2 V ? 1.8, 2.5, 3.3, 5 V

1.8 V ? 2.5, 3.3, 5V

2.5 V ? 3.3, 5 V

3.3 V ? 5V

Low standby current

5 V Tolerance I/O port to support TTL

Low Ron provides less signal distortion

High-impedance I/O terminals for EN = Low

Flow-through pinout for easy PCB trace routing

Latch-up performance exceeds 100 mA per JESD17

-40°C to 125°C operating temperature range

ESD performance tested per JESD 22
2000-V human-body model (A114-B, Class II)

200-V machine model (A115-A)

1000-V charged-device model (C101)

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Recommended For You

SN74LS257BN

Texas Instruments, Inc
DIP16

SN74LS245DW

Texas Instruments, Inc
SOP20

SN74LS74AN

Texas Instruments, Inc
DIP

SN74LS14N

Texas Instruments, Inc
DIP

SN74LS244N

Texas Instruments, Inc
DIP

SN74LS32D

Texas Instruments, Inc
SOP14

SN74LS26N

Texas Instruments, Inc
DIP

SN74LS266N

Texas Instruments, Inc
DIP14

SN74LS157N

Texas Instruments, Inc
DIP16

SN74LS273N

Texas Instruments, Inc
DIP20

SN74LS145DR

Texas Instruments, Inc
SOP16

SN74LS38N

Texas Instruments, Inc
DIP14

SN74LS07N

Texas Instruments, Inc
DIP14

SN74LS75N

Texas Instruments, Inc
DIP

SN74LS378N

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DIP