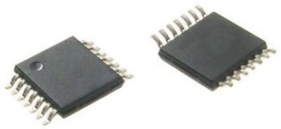
LSF0204QPWRQ1

Voltage Level Translator 4-CH Bidirectional Automotive 14-Pin TSSOP T/R

Manufacturer:	Texas Instruments, Inc
Package/Case:	TSSOP14
Product Type:	Logic ICs
RoHS:	RoHS Compliant/Lead free
Lifecycle:	Active



Images are for reference only

Inquiry

General Description

The LSF0204-Q1 is automotive qualified four channel auto bidirectional voltage translator that operate from 0.8 V 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 5.5 V without the need for a direction pin.

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 R_{on} of the switch allows connections to be made with minimal propagation delay and minimal 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 5.5 V

The supply voltage (V_{PUn}) 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

AEC-Q100 qualified for automotive applications
Temperature grade 1: –40°C ≤ T_A ≤ 125°C

Device HBM ESD classification level 2

CDM ESD classification level C6

Provides auto-bidirectional voltage translation without direction pin

Supports open drain or push-pull applications such as I^2C, I2S, SPI, UART, JTAG, MDIO, SDIO, and GPIO

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 I_{off}, partial power down mode (see *Section 7.3*)

Allows bidirectional voltage level translation between
0.95 V 1.8, 2.5, 3.3, 5.5 V

1.2 V 1.8, 2.5, 3.3, 5.5 V

1.8 V 2.5, 3.3, 5.5 V

2.5 V 3.3, 5.5 V

3.3 V 5.5 V

5-V tolerance on I/O ports

Low R_{on} enables better signal integrity

Flow-through pinout for easy PCB trace routing

Latch-up performance exceeds 100 mA per JESD17

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