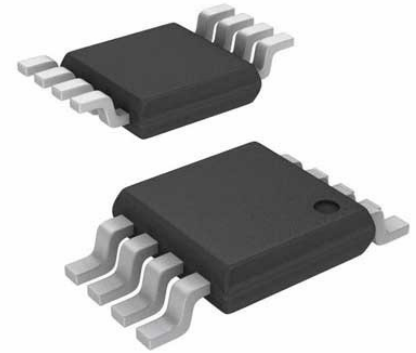


I2C Logic Repeater 2.5V/3.3V 8-Pin VSSOP T/R



Images are for reference only

[Inquiry](#)

Manufacturer: [Texas Instruments, Inc](#)

Package/Case: MSOP8

Product Type: Drivers

RoHS: RoHS Compliant/Lead free 

Lifecycle: NRND

General Description

The PCA9515A is a CMOS integrated circuit intended for application in I2C-bus and SMBus systems. While retaining all the operating modes and features of the I2C-bus system, it permits extension of the I2C-bus by buffering both the data (SDA) and the clock (SCL) lines, thus enabling two buses of 400 pF. The I2C-bus capacitance limit of 400 pF restricts the number of devices and bus length. Using the PCA9515A enables the system designer to isolate two halves of a bus, thus more devices or longer length can be accommodated. It can also be used to run two buses, one at 5 V and the other at 3.3 V or a 400 kHz and 100 kHz bus, where the 100 kHz bus is isolated when 400 kHz operation of the other is required. Two or more PCA9515As cannot be put in series. The PCA9515A design does not allow this configuration. Since there is no direction pin, slightly different 'legal' low voltage levels are used to avoid lock-up conditions between the input and the output. A 'regular LOW' applied at the input of a PCA9515A will be propagated as a 'buffered LOW' with a slightly higher value. When this 'buffered LOW' is applied to another PCA9515A, PCA9516A or PCA9518/A in series, the second PCA9515A, PCA9516A or PCA9518/A will not recognize it as a 'regular LOW' and will not propagate it as a 'buffered LOW' again. The PCA9510/A, PCA9511/A, PCA9512/A, PCA9513/A, PCA9514/A cannot be used in series with the PCA9515A, PCA9516A or PCA9518/A, but can be used in series with themselves since they use shifting instead of static offsets to avoid lock-up conditions. The output pull-down of each internal buffer is set for approximately 0.5 V, while the input threshold of each internal buffer is set about 0.07 V lower, when the output is internally driven LOW. This prevents a lock-up condition from occurring.

Key Features

2-channel, bidirectional buffer

I2C-bus and SMBus compatible

Active HIGH repeater enable input

Open-drain input/outputs

Lock-up free operation

Supports arbitration and clock stretching across the repeater

Accommodates Standard-mode and Fast-mode I2C-bus devices and multiple controllers

Powered-off high-impedance I2C-bus pins

Operating supply voltage range of 2.3 V to 3.6 V

5.5 V tolerant I2C-bus and enable pins

0 Hz to 400 kHz clock frequency (the maximum system operating frequency may be less than 400 kHz because of the delays added by the repeater)

ESD protection exceeds 2000 V HBM per JESD22-A114 and 1000 V CDM per JESD22-C101

Latch-up testing is done to JEDEC Standard JESD78 which exceeds 100 mA

Packages offered: SO8, TSSOP8 (MSOP8), HWSO8

Recommended For You

PCA9534APWR

Texas Instruments, Inc

TSSOP16

PCA9557PW

Texas Instruments, Inc

TSSOP16

PCA9538PWR

Texas Instruments, Inc

TSSOP16

PCA9515AD

Texas Instruments, Inc

SOP8

PCM2904DB

Texas Instruments, Inc

SSOP

PCMB000E

Texas Instruments, Inc

SSOP28

PCF8574N

Texas Instruments, Inc

DIP16

PCA9515BDGKR

Texas Instruments, Inc

MSOP8

PCMB500E

Texas Instruments, Inc

SSOP24

PCF8574RGTR

Texas Instruments, Inc

QFN16

PCI2050PDV

Texas Instruments, Inc

QFP208

PCA9539DW

Texas Instruments, Inc

SOIC(DW)

PCI1510GGU

Texas Instruments, Inc

BGA144

PCM2900CDBR

Texas Instruments, Inc

SSOP28

PCF8575PWR

Texas Instruments, Inc

TSSOP24