AVAQ

I2C/SMBus Interface 400kHz 5.5V 24-Pin SOIC Tube

Manufacturer:	Texas Instruments, Inc
Package/Case:	SOIC(DW)
Product Type:	Drivers
RoHS:	RoHS Compliant/Lead free RoHS
Lifecycle:	Active
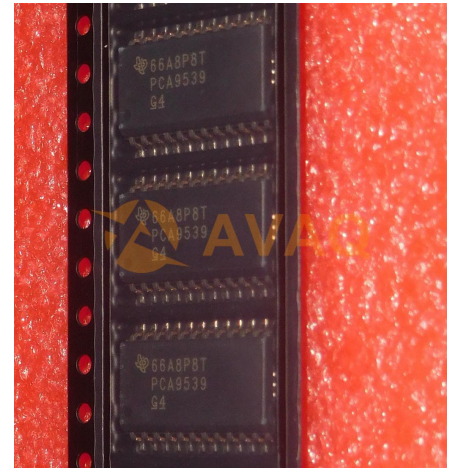
Images are for reference only

Inquiry

General Description

This 16-bit I/O expander for the two-line bidirectional bus (I2C) is designed for 2.3-V to 5.5-V VCC operation. It provides general-purpose remote I/O expansion for most microcontroller families via the I2C interface [serial clock (SCL), serial data (SDA)].

The PCA9539 consists of two 8-bit Configuration (input or output selection), Input Port, Output Port, and Polarity Inversion (active-high or active-low operation) registers. At power-on, the I/Os are configured as inputs. The system master can enable the I/Os as either inputs or outputs by writing to the I/O configuration bits. The data for each input or output is kept in the corresponding Input or output register. The polarity of the Input Port register can be inverted with the Polarity Inversion register. All registers can be read by the system master.

The system master can reset the PCA9539 in the event of a time-out or other improper operation by asserting a low in the RESET input. The power-on reset puts the registers in their default state and initializes the I2C/SMBus state machine. Asserting RESET causes the same reset/initialization to occur without de-powering the part.

The PCA9539 open-drain interrupt (INT) output is activated when any input state differs from its corresponding Input Port register state and is used to indicate to the system master that an input state has changed.

INT can be connected to the interrupt input of a microcontroller. By sending an interrupt signal on this line, the remote I/O can inform the microcontroller if there is incoming data on its ports without having to communicate via the I2C bus. Thus, the PCA9539 can remain a simple slave device.

The device outputs (latched) have high-current drive capability for directly driving LEDs. The device has low current consumption.

The PCA9539 is identical to the PCA9555, except for the removal of the internal I/O pullup resistor, which greatly reduces power consumption when the I/Os are held low, replacement of A2 with RESET, and a different address range.

Two hardware pins (A0 and A1) are used to program and vary the fixed I2C address and allow up to four devices to share the same I2C bus or SMBus.

Key Features

Low Standby-Current Consumption of 1μAMax

I2C to Parallel Port Expander

Open-Drain Active-Low Interrupt Output

Active-Low Reset Input

5-V Tolerant I/O Ports

Compatible With Most Microcontrollers

400-kHz Fast I2C Bus

Polarity Inversion Register

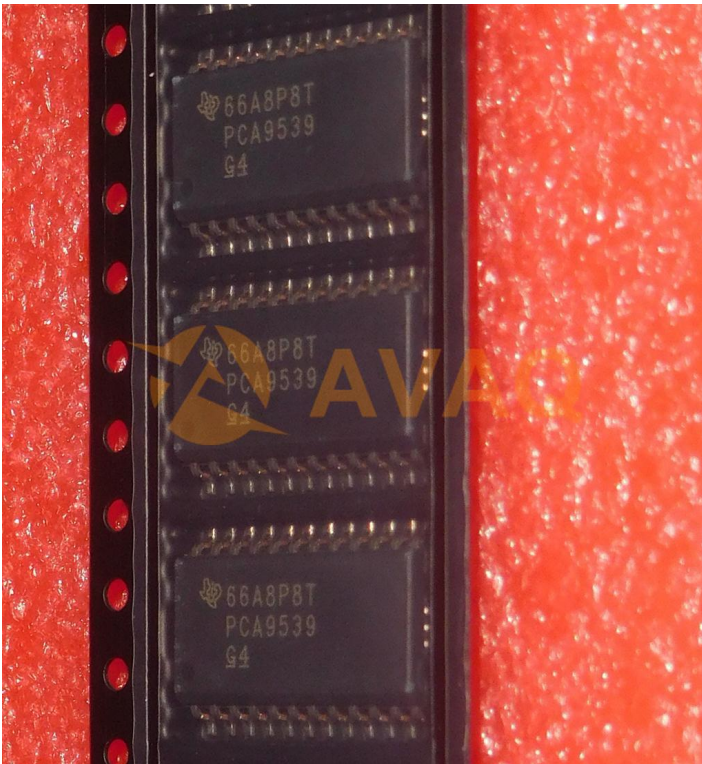Address by Two Hardware Address Pins for Use of up to Four Devices

Latched Outputs With High-Current Drive Capability for Directly Driving LEDs

Latch-Up Performance Exceeds 100mA Per JESD78, ClassII

ESD Protection Exceeds JESD22
2000-V Human-Body Model (A114-A)

1000-V Charged-Device Model (C101)

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Recommended For You

PCA9534APWR	**PCA9557PW**	**PCA9538PWR**
Texas Instruments, Inc	Texas Instruments, Inc	Texas Instruments, Inc
TSSOP16	TSSOP16	TSSOP16
PCA9515AD	**PCM2904DB**	**PCM3000E**
Texas Instruments, Inc	Texas Instruments, Inc	Texas Instruments, Inc
SOP8	SSOP	SSOP28
PCF8574N	**PCA9515BDGKR**	**PCM3500E**
Texas Instruments, Inc	Texas Instruments, Inc	Texas Instruments, Inc
DIP16	MSOP8	SSOP24
PCF8574RGTR	**PCI2050PDV**	**PCI1510GGU**
Texas Instruments, Inc	Texas Instruments, Inc	Texas Instruments, Inc
QFN16	QFP208	BGA144
PCM2900CDBR	**PCF8575PWR**	**PCI2050BPDV**
Texas Instruments, Inc	Texas Instruments, Inc	Texas Instruments, Inc
SSOP28	TSSOP24	QFP208