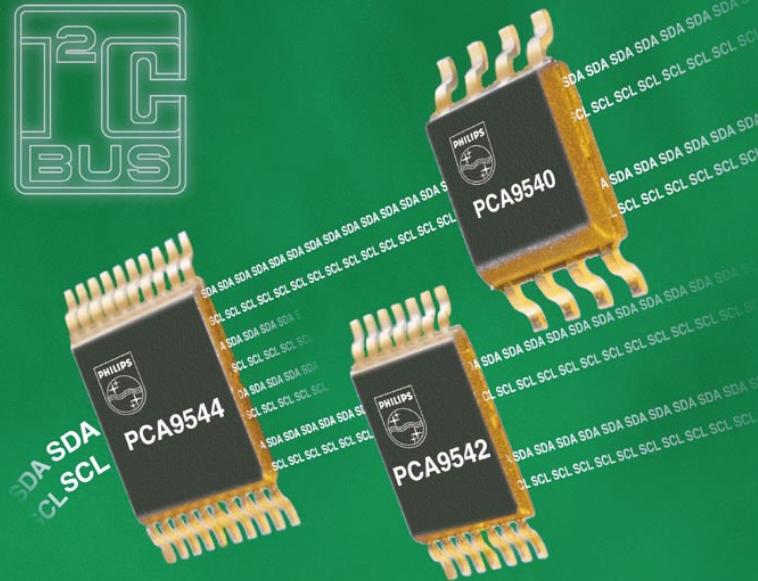
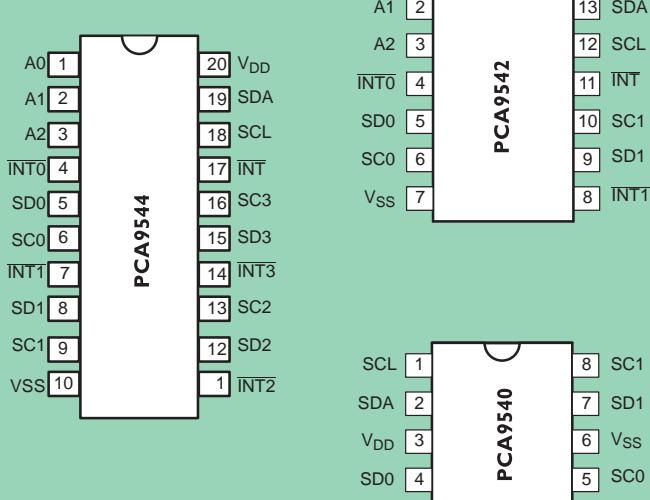


## Philips Family of I<sup>2</sup>C Multiplexers



The 4-Channel PCA9544, 2-Channel PCA9542 and the low-cost 2-Channel PCA9540 complete the family of Philips Configuration I<sup>2</sup>C Multiplexers.

## Pin Configurations



## PCA9544

4-Channel I<sup>2</sup>C Multiplexer & Interrupt Controller

## PCA9542

2-Channel I<sup>2</sup>C Multiplexer & Interrupt Controller

## PCA9540

2-Channel I<sup>2</sup>C Multiplexer

## Description

The PCA9544, PCA9542, and PCA9540 are I<sup>2</sup>C multiplexers used to address multiple I<sup>2</sup>C/SMBus system management buses as well as multiple I<sup>2</sup>C devices with the same address, different voltage levels, or higher loads than what their I<sup>2</sup>C masters can handle. The PCA9540 is a low-cost 2-channel I<sup>2</sup>C multiplexer that switches between two I<sup>2</sup>C devices or buses without interrupts. For switching between more than two I<sup>2</sup>C devices or buses, the PCA9542 contains three address pins allowing up to eight PCA9542s to be used on the same bus. Eight PCA9542s can then switch up to sixteen I<sup>2</sup>C devices or buses. The PCA9542 also provides an interrupt controller in case the switched I<sup>2</sup>C devices or buses generate interrupts. A two-in-one PCA9542 called the PCA9544 is also available in case a single 4-channel I<sup>2</sup>C multiplexer is preferred over cascading two PCA9542s. The PCA9544 is also used for switching up to thirty-two I<sup>2</sup>C devices or buses.

## Philips Configuration I<sup>2</sup>C Multiplexer Advantages

- Integrated logic eliminates glue logic and general purpose I/O that previously handled multiplexing and interrupt controlling
- Integrated bus switches allow for up to eight I<sup>2</sup>C loads per channel
- Integrated level shifter interfaces 5V I<sup>2</sup>C slaves to 3.3V SMBus
- Bus isolation prevents system hang-ups due to rogue I<sup>2</sup>C slaves

## PCA9544 Advantages

- 4-channel bi-directional translating I<sup>2</sup>C multiplexer
- 4-channel interrupt controller with single interrupt output
- 3 address pins allows cascading of up to eight devices
- 3.3V operation
- 3.3V and 5V tolerant I<sup>2</sup>C channels
- 20-pin plastic TSSOP package

## PCA9542 Advantages

- 2-channel bi-directional translating I<sup>2</sup>C multiplexer
- 2-channel interrupt controller with single interrupt output.
- 3 address pins allows cascading of up to eight devices
- 3.3V operation
- 3.3V and 5V tolerant I<sup>2</sup>C channels
- 14-pin plastic TSSOP package

## PCA9540 Advantages

- 2-channel bi-directional translating I<sup>2</sup>C multiplexer
- 3.3V operation
- 3.3V and 5V tolerant I<sup>2</sup>C channels
- 8-pin plastic SO package

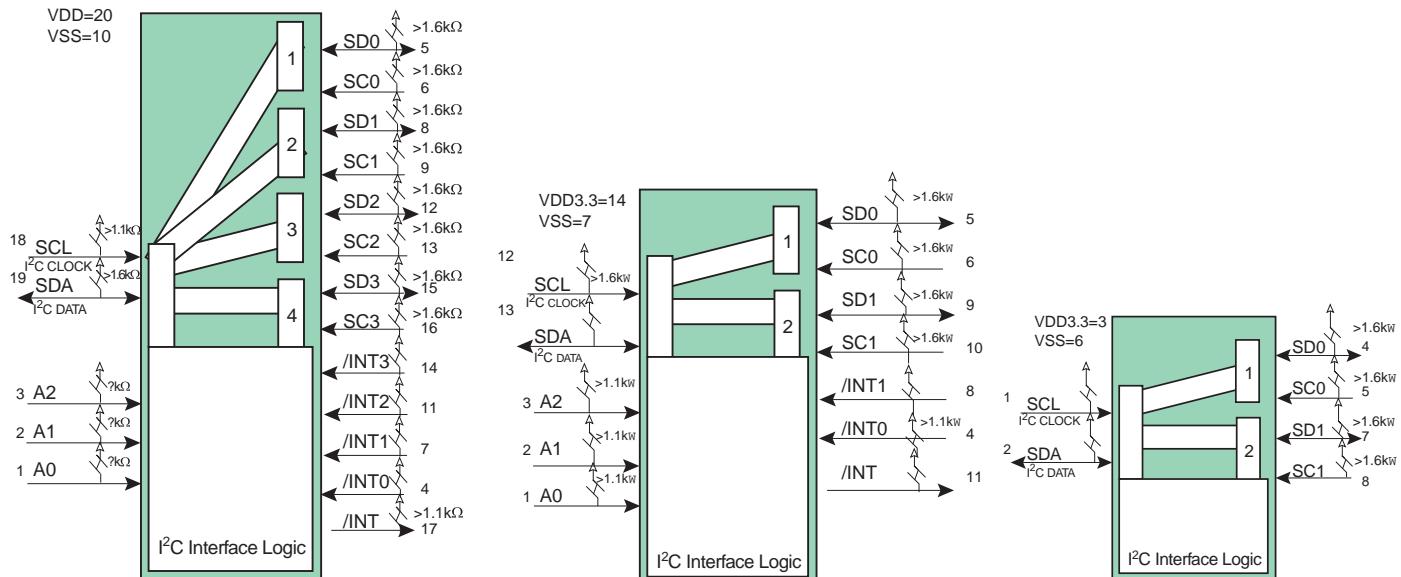
Let's make things better.



**PHILIPS**

**PCA9544 4-Channel I<sup>2</sup>C Multiplexer & Interrupt Controller**  
**PCA9542 2-Channel I<sup>2</sup>C Multiplexer & Interrupt Controller**  
**PCA9540 2-Channel I<sup>2</sup>C Multiplexer**

**PCA9544, PCA9542 and PCA9540 Block Diagrams**



**PCA9544**  
**4-Channel Multiplexer**  
**and Interrupt Controller**

**PCA9542**  
**2-Channel Multiplexer**  
**and Interrupt Controller**

**PCA9540**  
**2-Channel Multiplexer**

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Printed in the USA

xxxxx/10K/FP/2pp/1099

9397-750-xxxxx