Four-Channel I2C-Bus Switch with Interrupt Logic and Reset

PCA9545A_45B_45C

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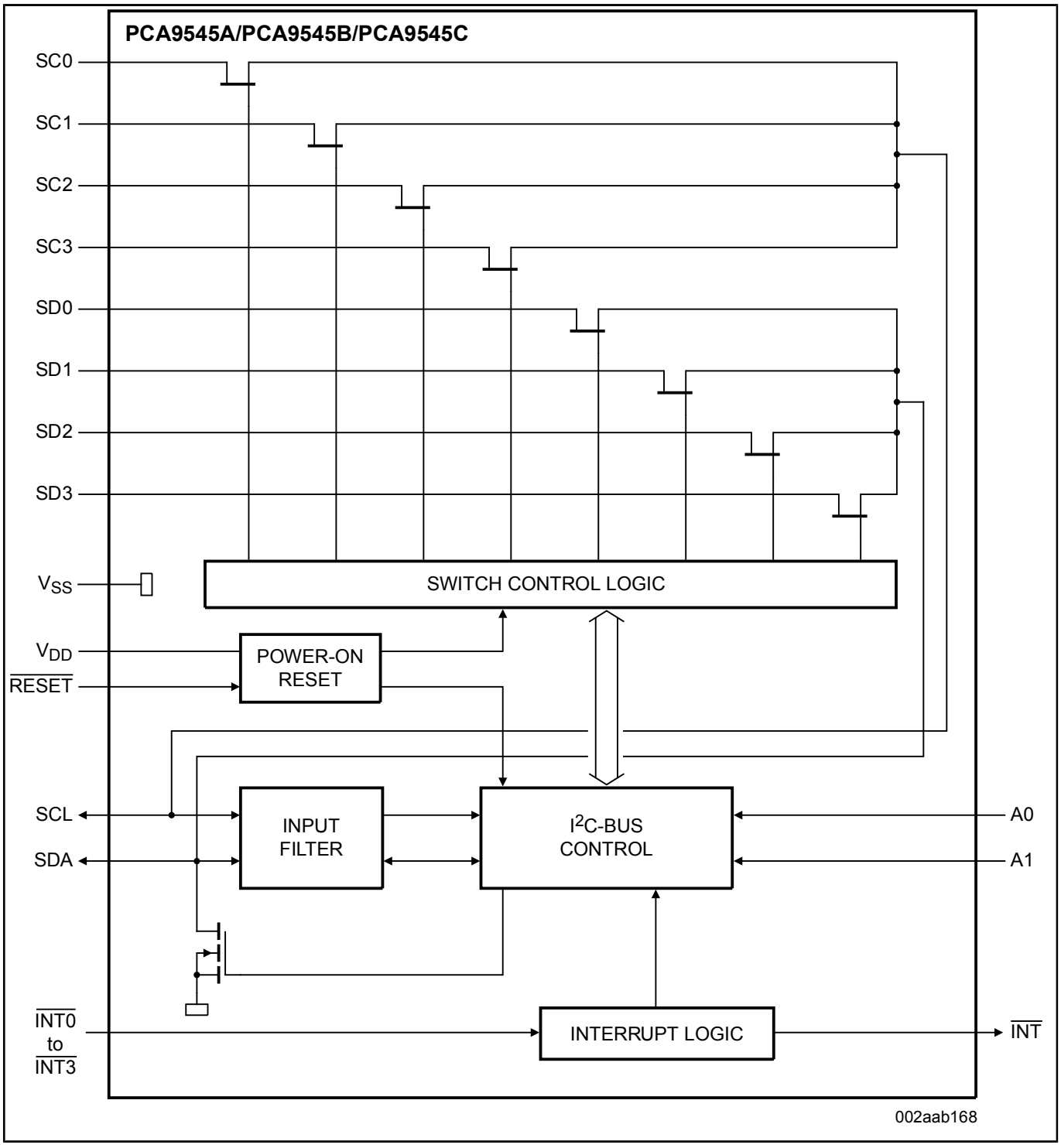
The PCA9545A/45B/45C is a quad bidirectional translating switch controlled via the I²C-bus. The SCL/SDA upstream pair fans out to four downstream pairs, or channels. Any individual SCx/SDx channel or combination of channels can be selected, determined by the contents of the programmable control register. Four interrupt inputs, INT0 to INT3, one for each of the downstream pairs, are provided. One interrupt output, INT, acts as an AND of the four interrupt inputs.

An active LOW reset input allows the PCA9545A/45B/45C to recover from a situation where one of the downstream I²C-buses is stuck in a LOW state. Pulling the RESET pin LOW resets the I²C-bus state machine and causes all the channels to be deselected as does the internal power-on reset function.

The pass gates of the switches are constructed such that the VDD pin can be used to limit the maximum high voltage which is passed by the PCA9545A/45B/45C. This allows the use of different bus voltages on each pair, so that 1.8 V or 2.5 V or 3.3 V parts can communicate with 5 V parts without any additional protection. External pull-up resistors pull the bus up to the desired voltage level for each channel. All I/O pins are 5 V tolerant.

The PCA9545A, PCA9545B and PCA9545C are identical except for the fixed portion of the target address.

PCA9545A_45B_45C Block Diagram



View additional information for Four-Channel I2C-Bus Switch with Interrupt Logic and Reset.

Note: The information on this document is subject to change without notice.

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