Low-Voltage 16-Bit I²C-Bus I/O Port with Interrupt

PCA9535A

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The PCA9535A is a low-voltage 16-bit General Purpose Input/Output (GPIO) expander with interrupt and reset for I²C-bus/SMBus applications. NXP I/O expanders provide a simple solution when additional I/Os are needed while keeping interconnections to a minimum, for example, in ACPI power switches, sensors, push buttons, LEDs, fan control, etc.

In addition to providing a flexible set of GPIOs, the wide VDD range of 1.65 V to 5.5 V allows the PCA9535A to interface with next-generation microprocessors and microcontrollers where supply levels are dropping down to conserve power.

The PCA9535A contains the PCA9535 register set of four pairs of 8-bit Configuration, Input, Output, and Polarity Inversion registers.

The PCA9535A is a pin-to-pin replacement to the PCA9535 and other industry-standard devices. A more fully featured device, the PCAL9535A, is available with Agile I/O features. See the respective data sheet for more details.

The PCA9535A 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 controller that an input state has changed.

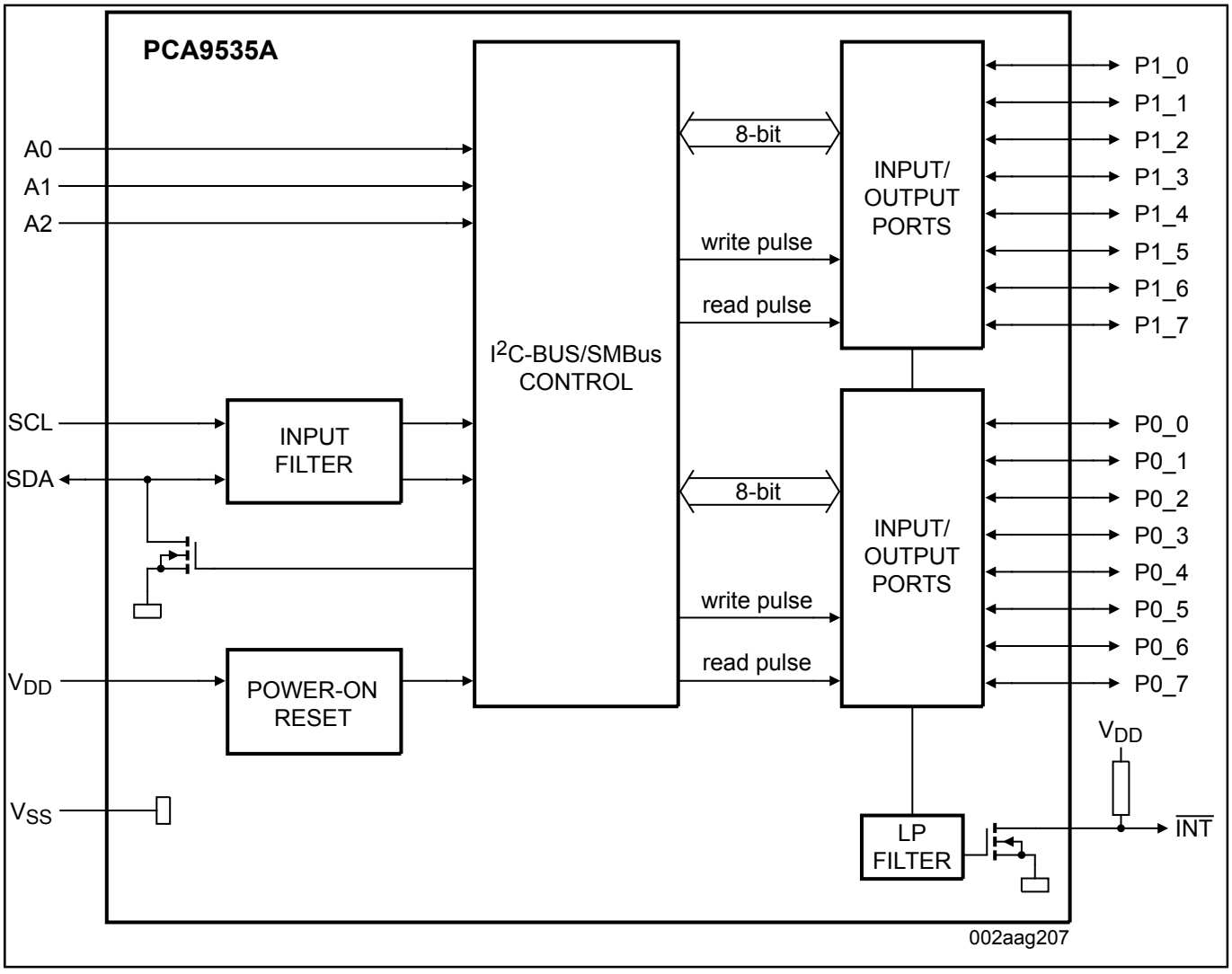
INT can be connected to the interrupt input of a microcontroller. By sending an interrupt signal on this line, the remote I/O can inform the microcontroller if there is incoming data on its ports without having to communicate via the I²C-bus. Thus, the PCA9535A can remain a simple target device.

The device outputs have 25 mA sink capabilities for directly driving LEDs while consuming low device current.

The power-on reset sets the registers to their default values and initializes the device state machine.

Three hardware pins (A0, A1, A2) select the fixed I²C-bus address and allow up to eight devices to share the same I²C-bus/SMBus.

PCA9535A Block Diagram Block Diagram



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

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