Remote 8-Bit I/O Expander for Fm+ I²C-Bus with Interrupt

PCA9674_PCA9674A

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The PCA9674 and PCA9674A provides general purpose remote I/O expansion via the two-line bidirectional I²C#bus (serial clock (SCL), serial data (SDA)).

The devices consist of eight quasi-bidirectional ports, 1 MHz I²C#bus Fast-mode Plus (Fm +) family interface, with high speed data transfer it can support PWM dimming of LEDs and higher I²C#bus drive 30 mA for more devices can be on the bus without the need for bus buffers. Three hardware address inputs and interrupt output operating between 2.3 V and 5.5 V. The quasi-bidirectional port can be independently assigned as an input to monitor interrupt status or keypads, or as an output to activate indicator devices such as LEDs. The system controller can read from the input port or write to the output port through a single register.

The low current consumption of 4.5 µA (typical, static) is great for mobile applications and the latched output ports have 25 mA high current sink drive capability for directly driving LEDs.

The PCA9674 and PCA9674A are identical except for the different, non-overlapping target address. The three hardware selectable address pins can be decode to 64 addresses for the PCA9674 and 62 addresses for the PCA9674A, so there can be up to 126 of these I/O expanders PCA9674/74A together on the same I²C#bus without the need for bus buffers, supporting up to 1008 I/Os (for example, 1008 LEDs).

The active LOW open-drain interrupt output (INT) can be connected to the interrupt logic of the microcontroller and is activated when any input state differs from its corresponding input port register state. It is used to indicate to the microcontroller that an input state has changed and the device needs to be interrogated without the microcontroller continuously polling the input register via the I²C#bus.

The internal Power-On Reset (POR) initializes the I/Os as inputs with a weak internal pull-up 100 µA current source.

PCA9674-PCA9674A BLOCK DIAGRAM Block Diagram

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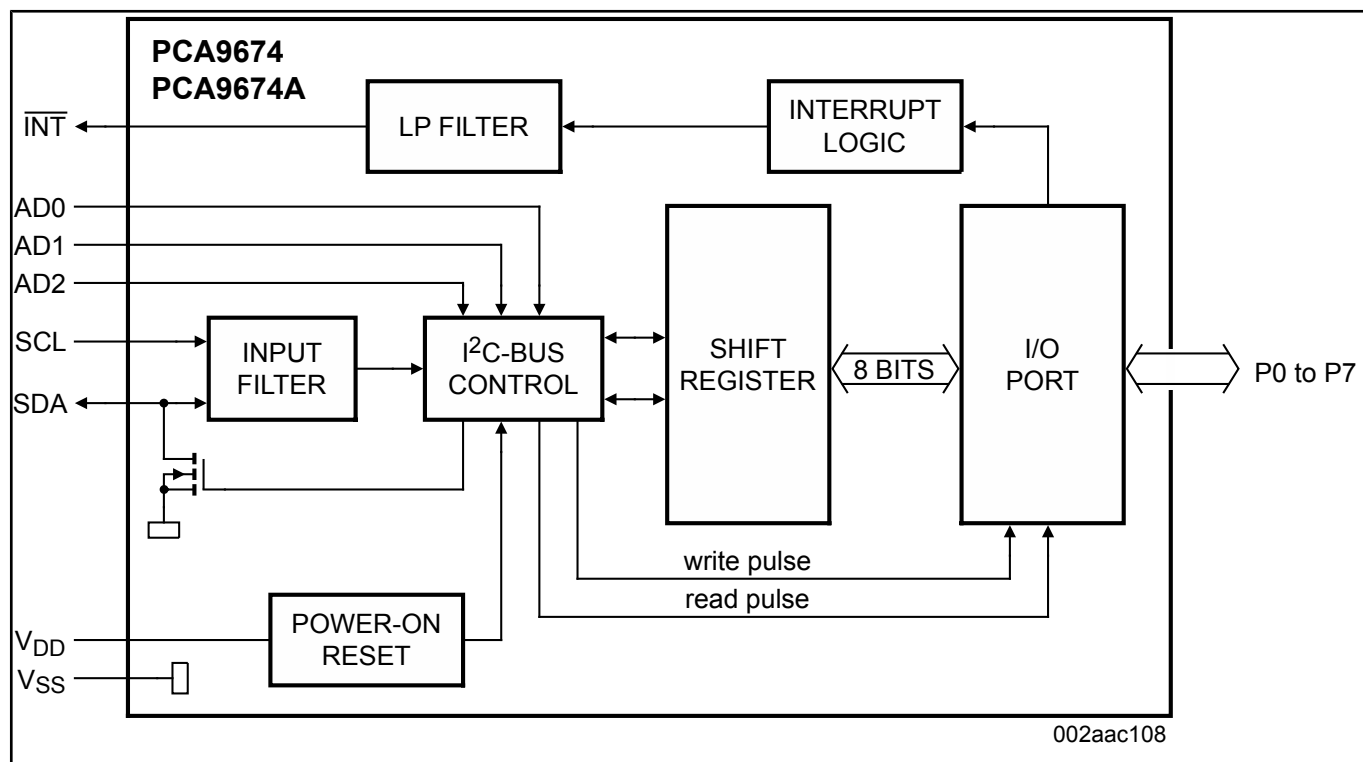
View additional information for Remote 8-Bit I/O Expander for Fm+ I²C-Bus with Interrupt.

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