

16 bit I2C IO-Expander with 3.3 V Voltage Regulator

Features

- 0-400 kHz I2C interface
- 16 individual input/output signals
- ESD protected (2000 V HBM)
- 3.3 V power supply
- short circuit protection
- overheat protection
- 2.54 mm (0.1 inch) stripboard and breadboard compatible pin spacing

General Description

This board features the PCA9555 IO expander IC for 16 individually as input or output programmable signals. Each of the 16 IO line is protected by a 680 Ω serial resistor.

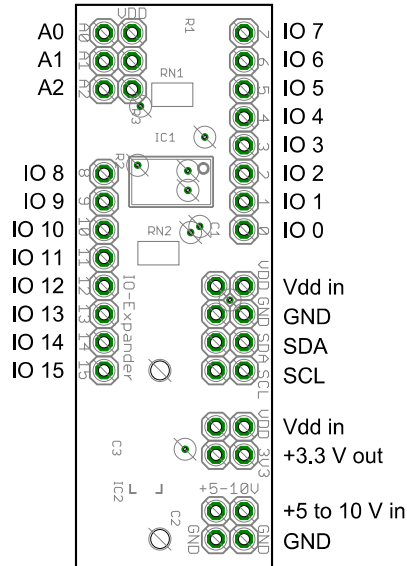
The lower 3 bits of the I2C address can be changed by connecting A0 to A2 to Vdd with jumpers on the pin headers, for up to 8 boards on the same I2C bus. All address pins have pull-down resistors, so with no jumper the I2C address of the device is 0x20.

Optionally the MCP1703 on-board 3.3 V voltage regulator can be used. The regulator provides up to 250 mA for the IO expander and external components together and has an integrated short circuit and overheat protection.

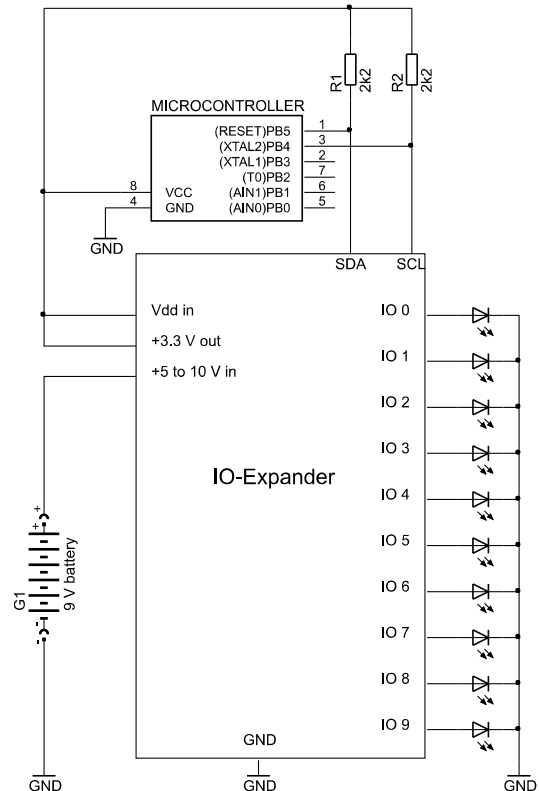
Applications

- microcontroller input/output port extender
- breadboard lab 3.3 V power supply
- ESD protected input/output buffer
- flicker free LED driver
- buttons and switch input

Board Connections



Typical Application Circuit



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Absolute Maximum Ratings and Electrical Characteristics

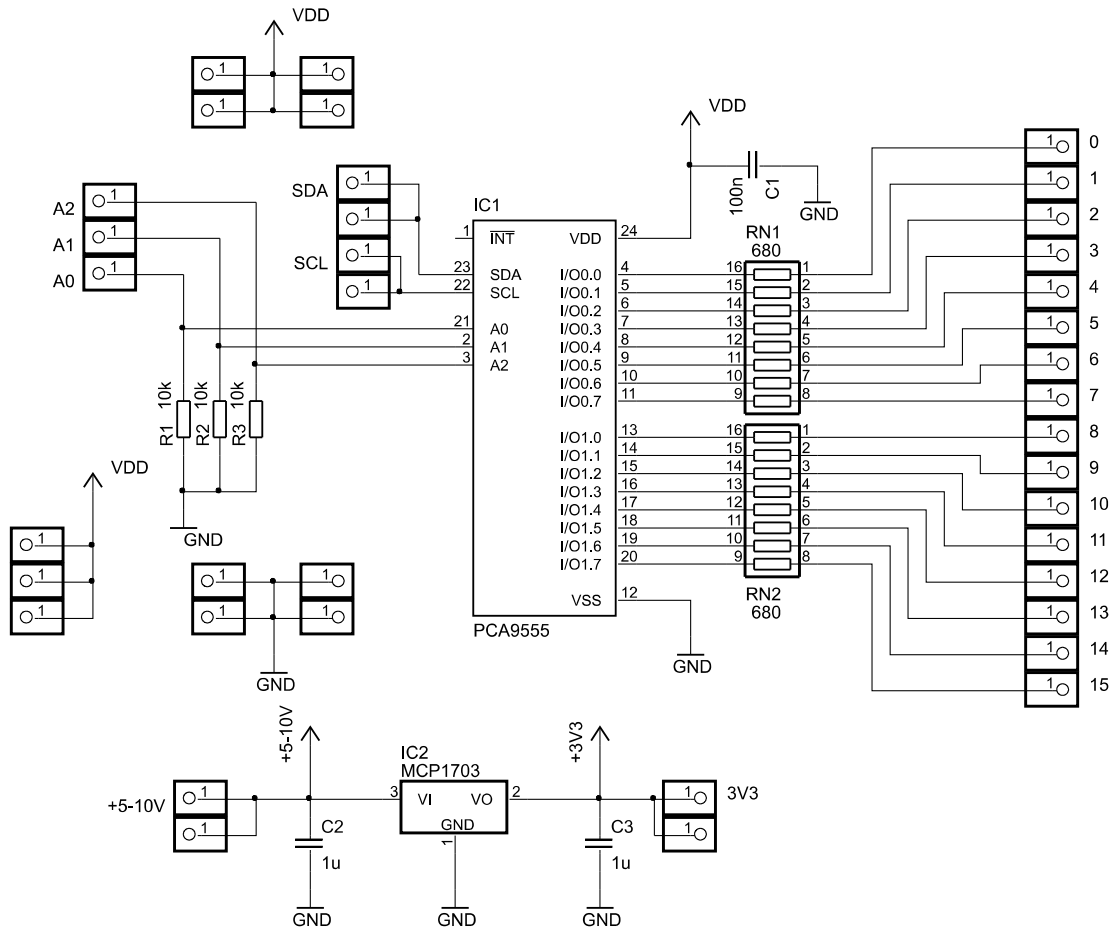
See datasheets of the PCA9555 and MCP1703:

MCP1703: <http://ww1.microchip.com/downloads/en/DeviceDoc/22049f.pdf>

PCA9555: http://www.nxp.com/documents/data_sheet/PCA9555.pdf

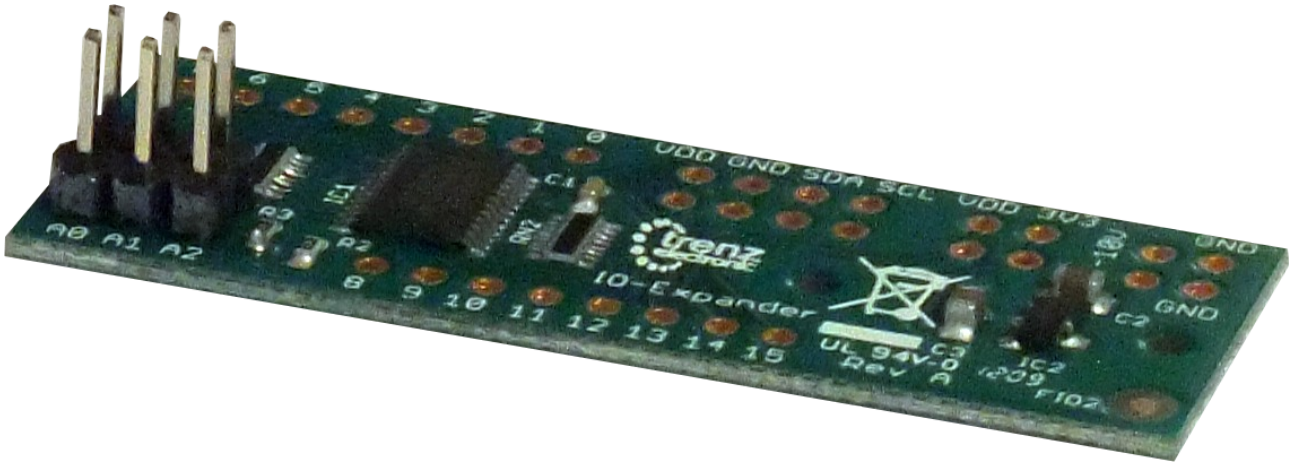
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Schematic

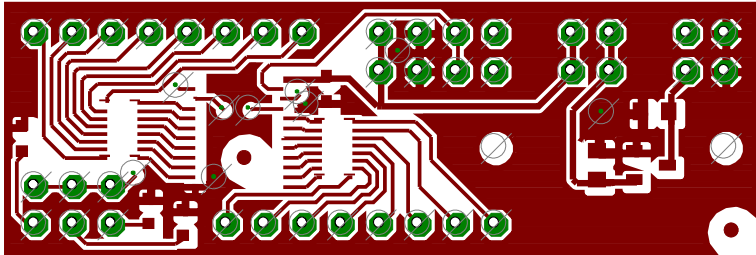


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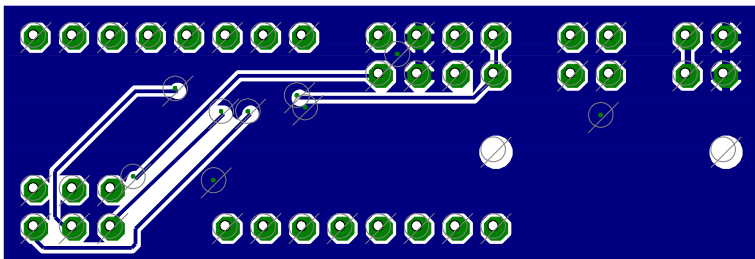
Condition on delivery



Top layout



Bottom layout



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Dimensions (in inches, unless otherwise specified)

