

Arduino

Basic Connections



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1 Apresentação



BASIC CONNECTIONS

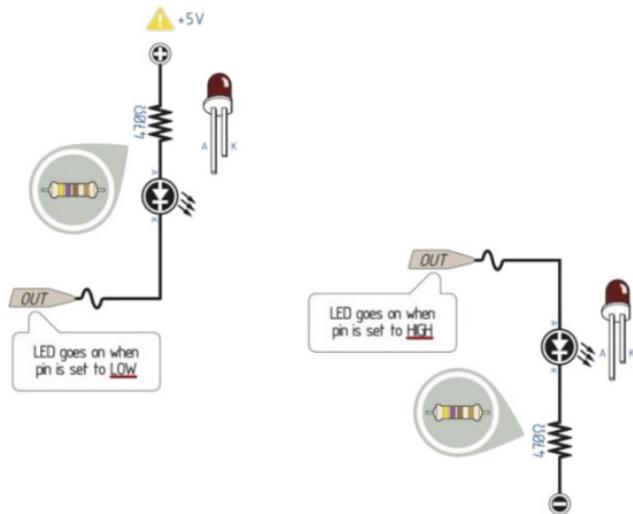


17 JUL 2014
ver 3 rev 0

2 Circuitos

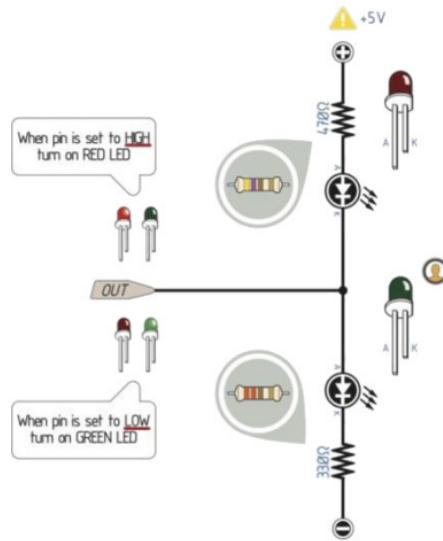
2.1 005

One LED



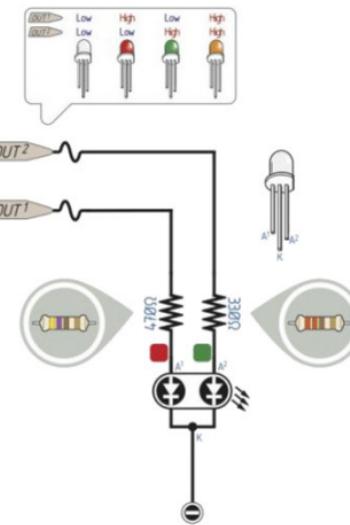
2.2 006

Two LEDs

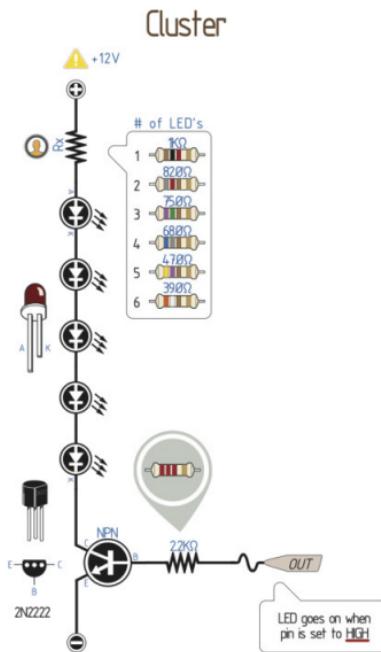


2.3 007

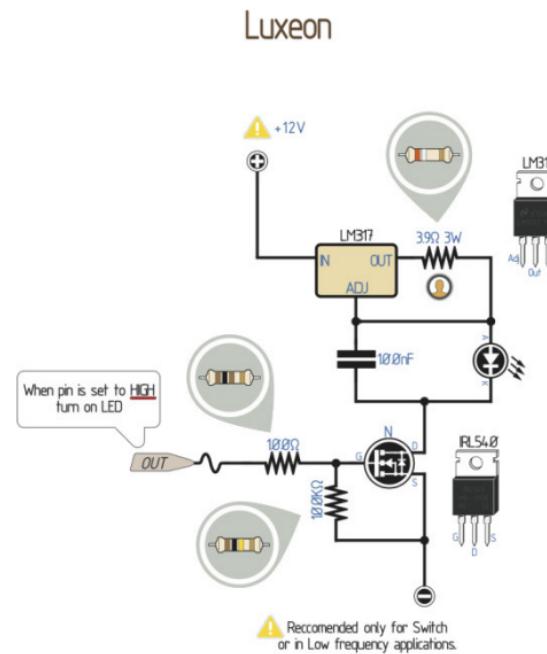
Bicolor LED



2.4 008

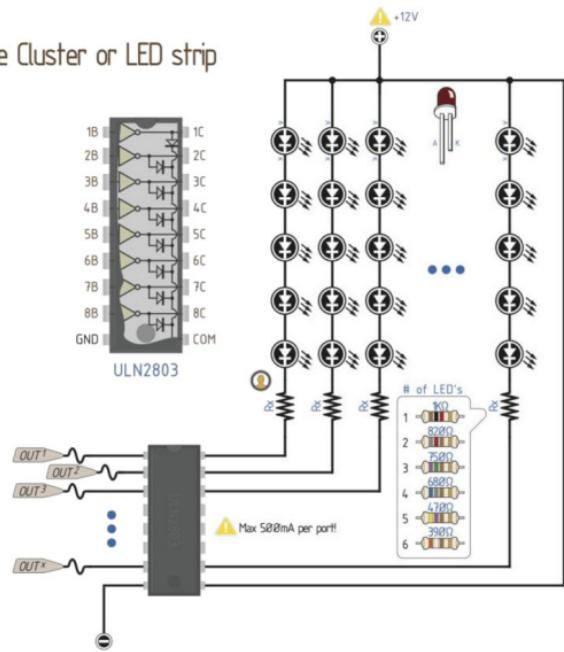


2.5 009



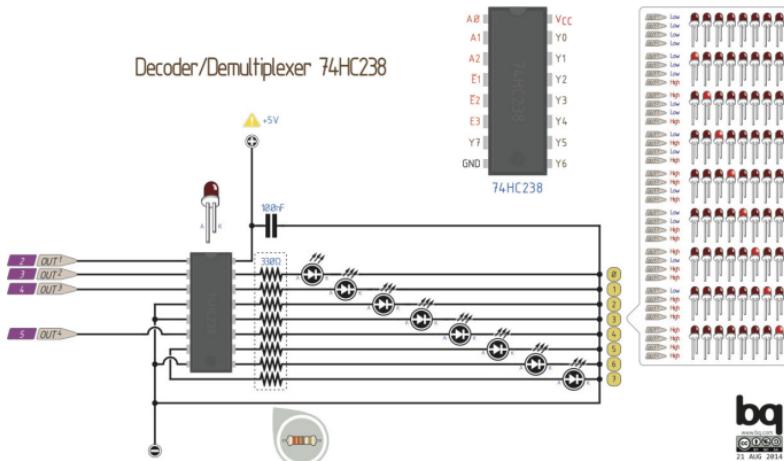
2.6 010

Multiple Cluster or LED strip



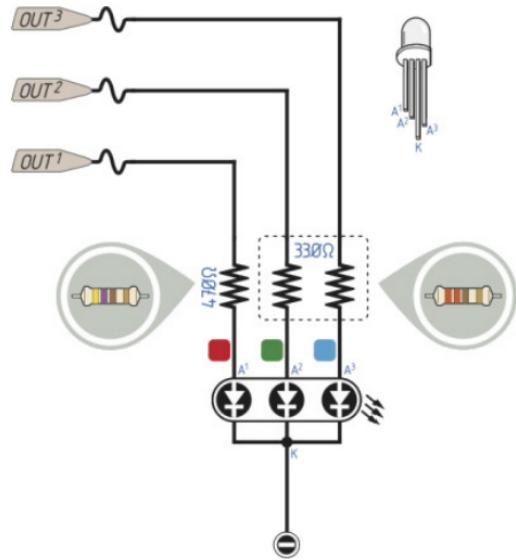
2.7 011

Decoder/Demultiplexer 74HC238



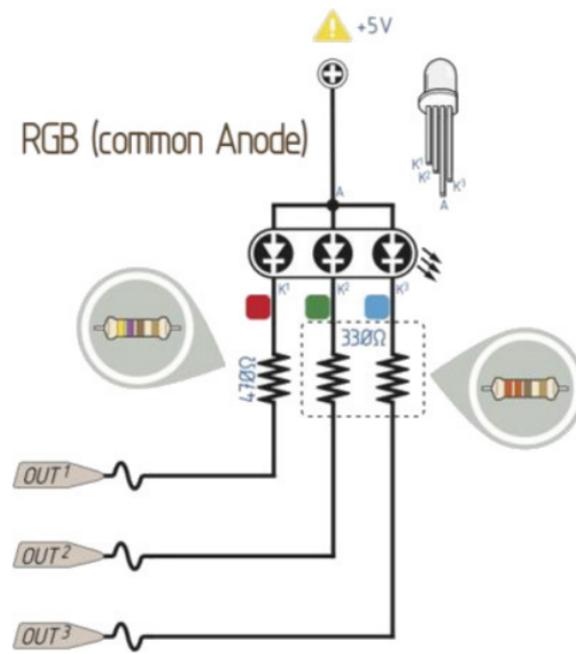
2.8 012

RGB (common Cathode)

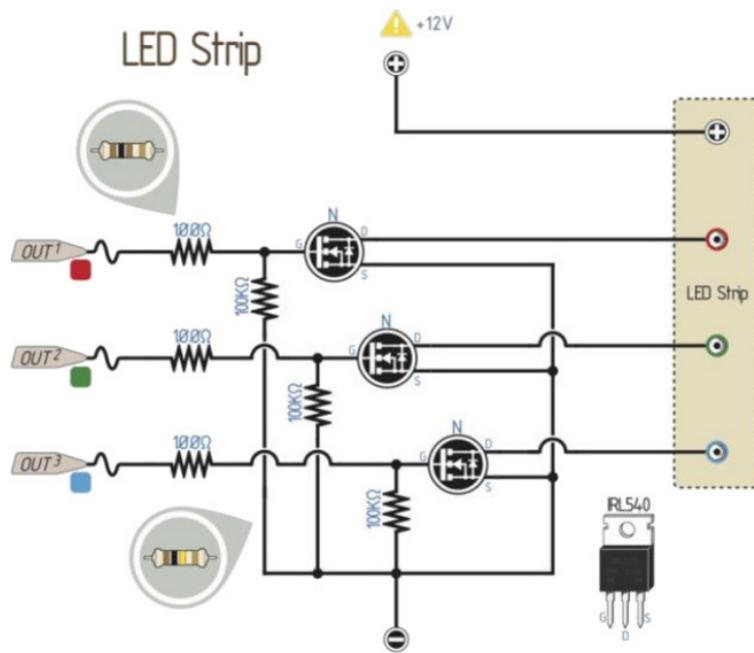


2.9 013

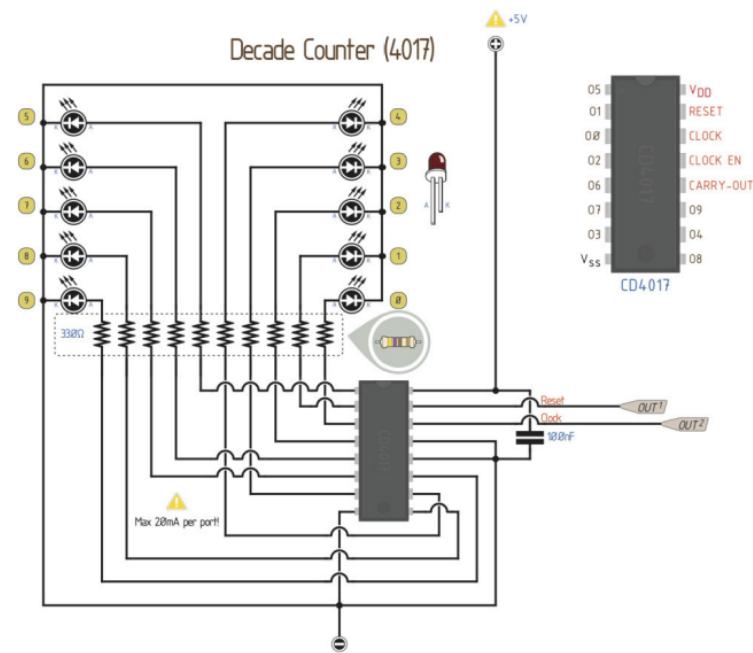
RGB (common Anode)



2.10 014

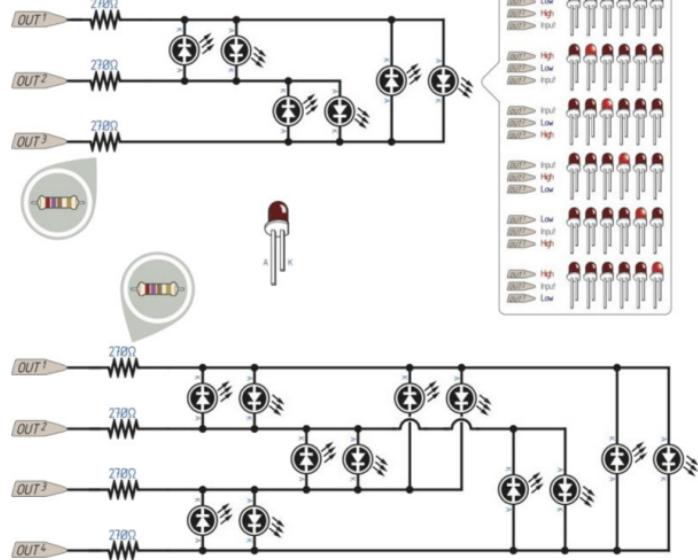


2.11 015

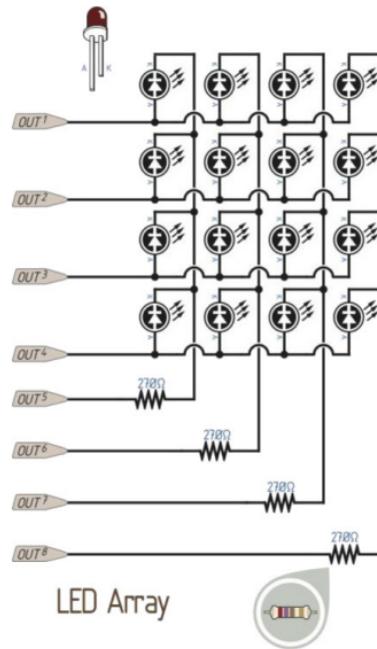


2.12 016

Charlieplexing

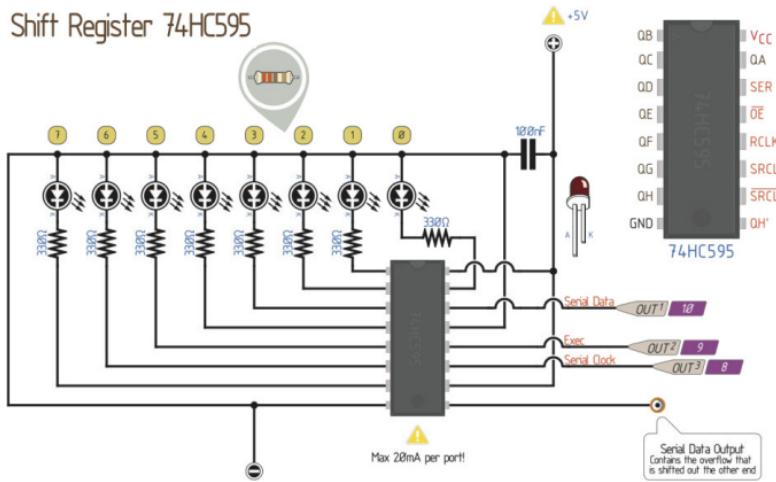


2.13 017



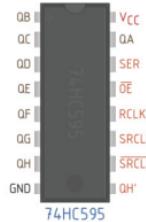
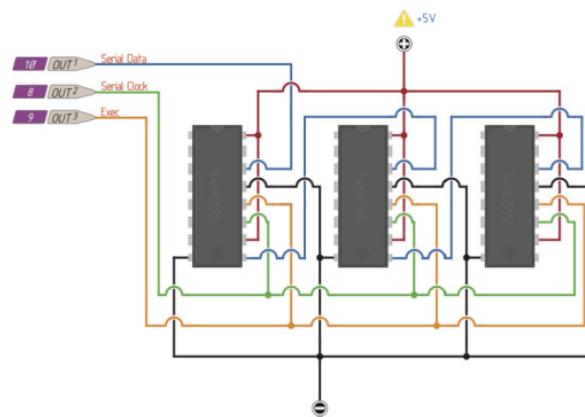
2.14 018

Shift Register 74HC595

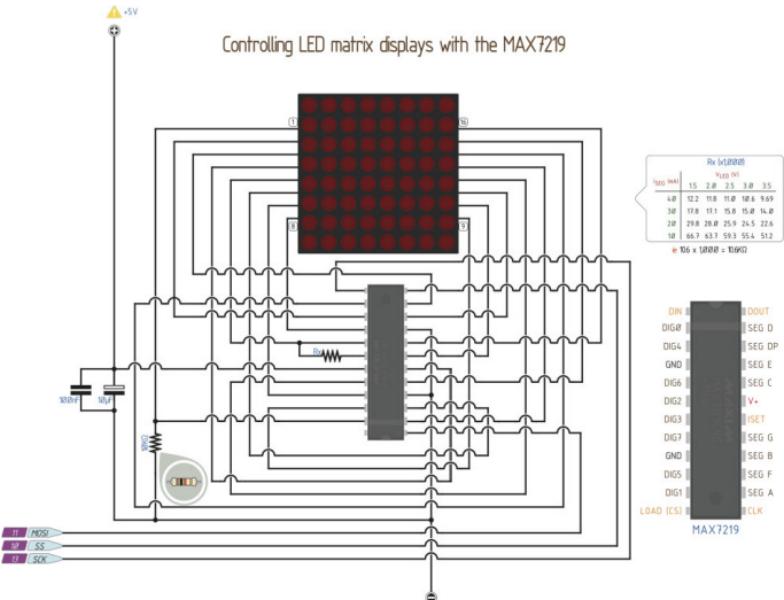


2.15 019

Connect multiple 74HC595

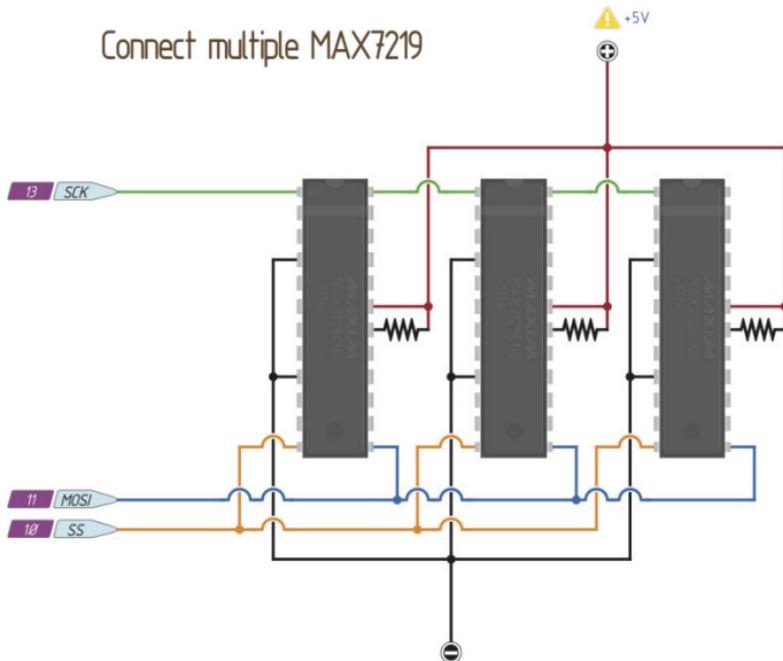


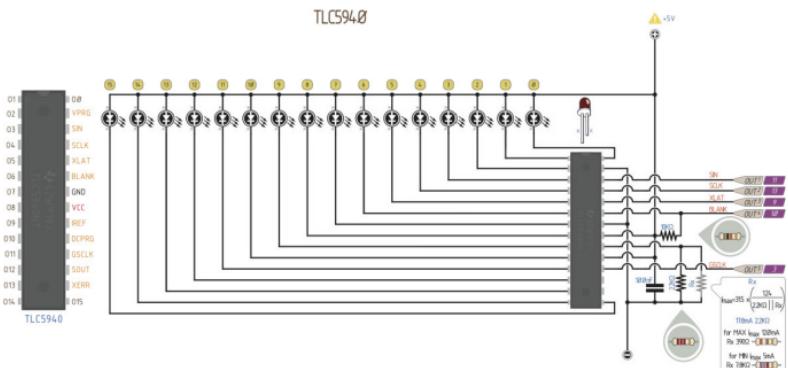
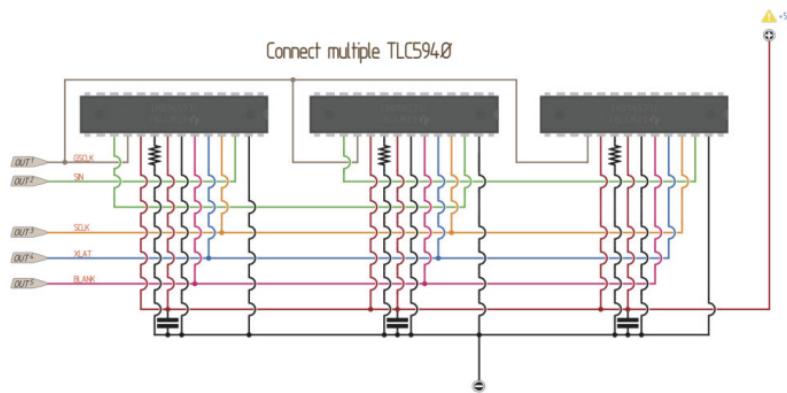
2.16 020



2.17 021

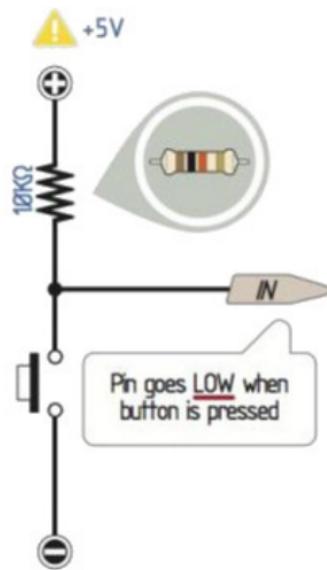
Connect multiple MAX7219



2.18 022**2.19 023**

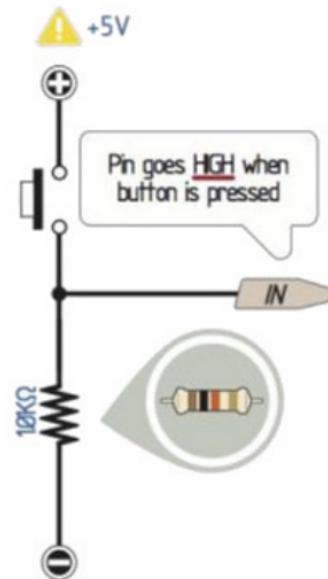
2.20 024

Pushbutton to GND



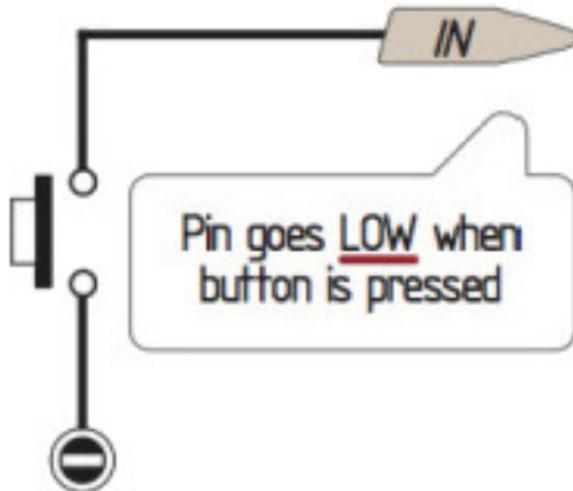
2.21 025

Pushbutton to 5V



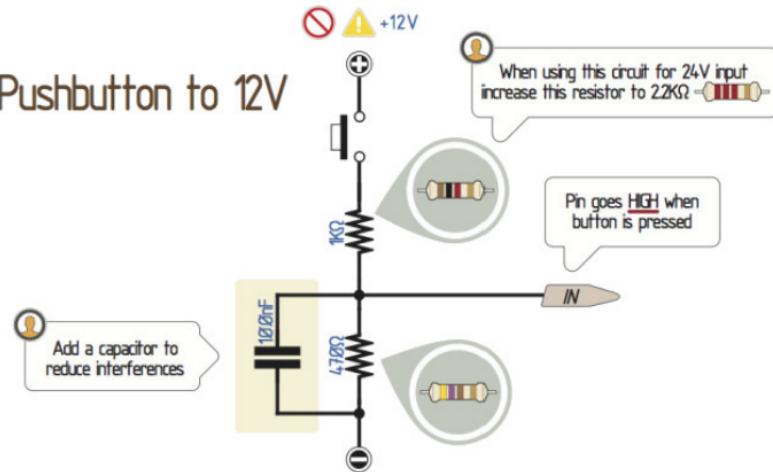
2.22 026

Using Internal pullup



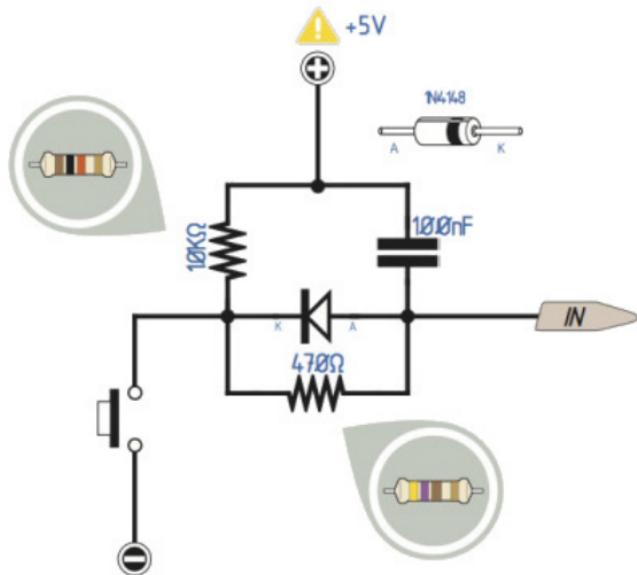
2.23 027

Pushbutton to 12V

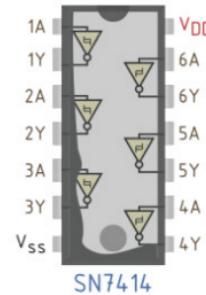
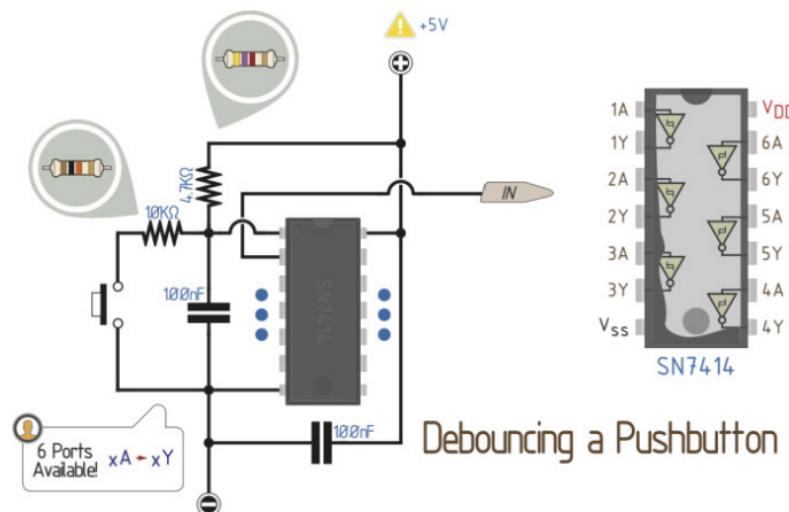


2.24 028

Simple Debouncer

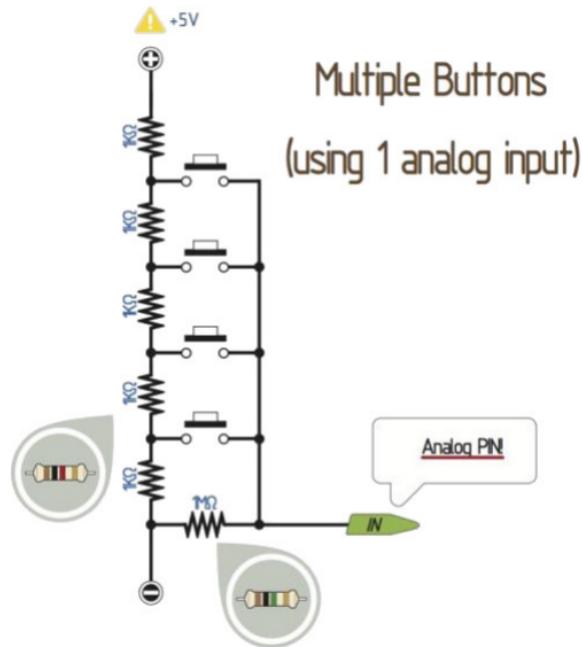


2.25 029

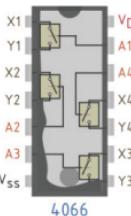
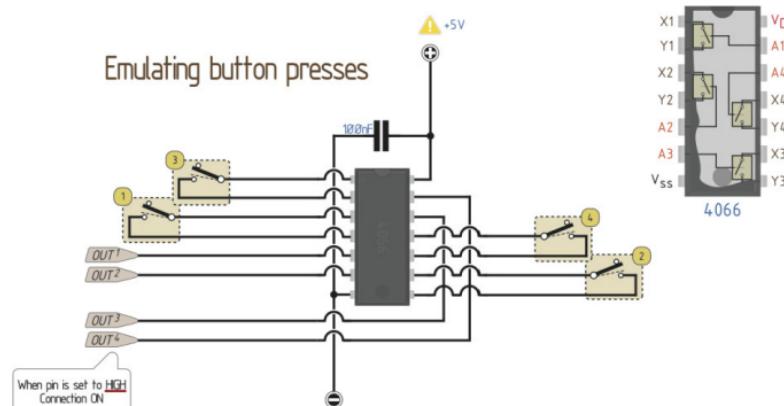


Debouncing a Pushbutton

2.26 030

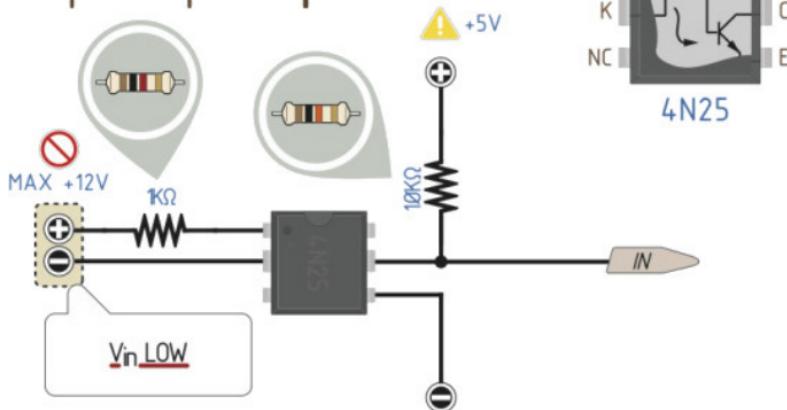


2.27 031



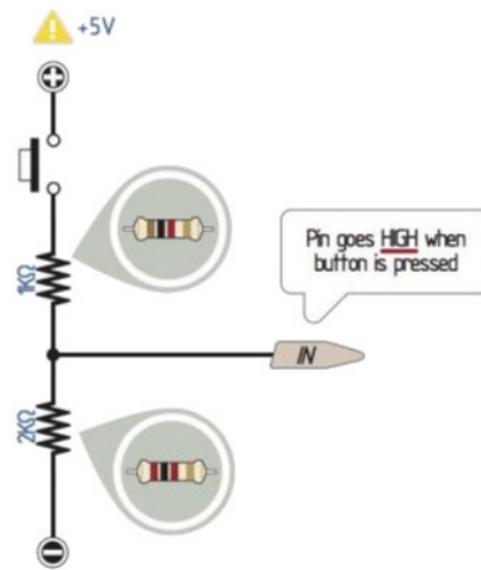
2.28 032

Optocoupled Input



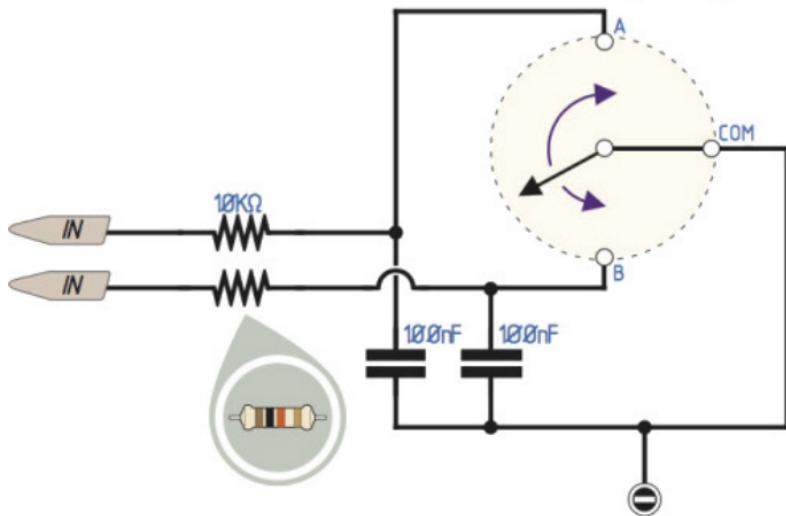
2.29 033

Pushbutton to 3V3 tolerant pins



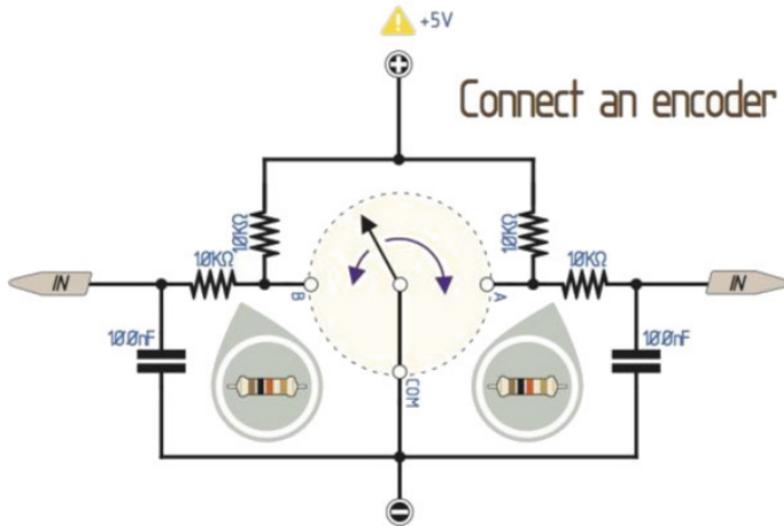
2.30 034

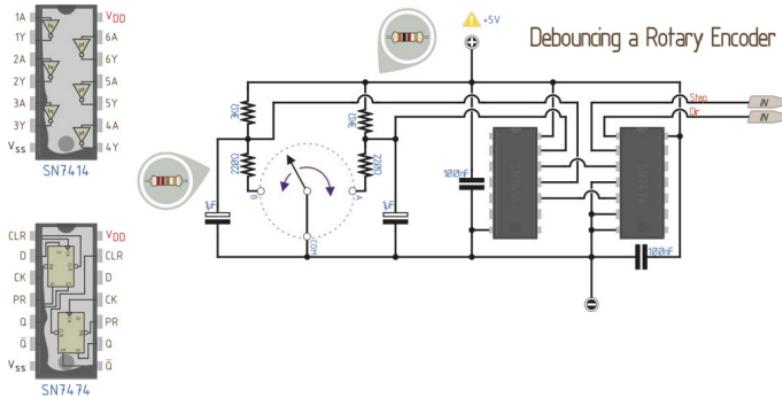
Connect an encoder (Internal pullup)



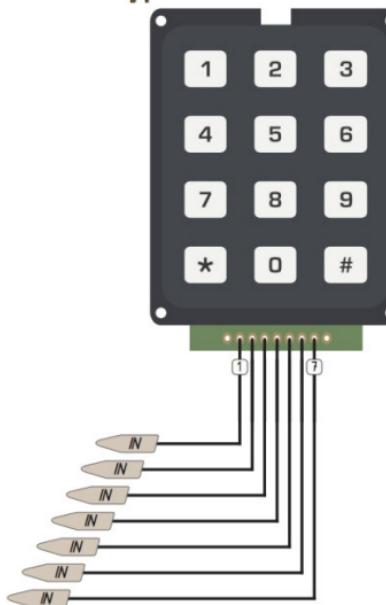
2.31 035

Connect an encoder

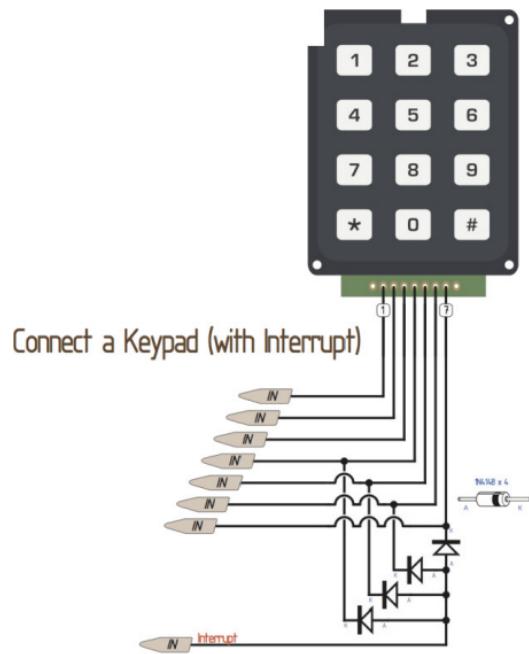


2.32 036**2.33 037**

Connect a Keypad



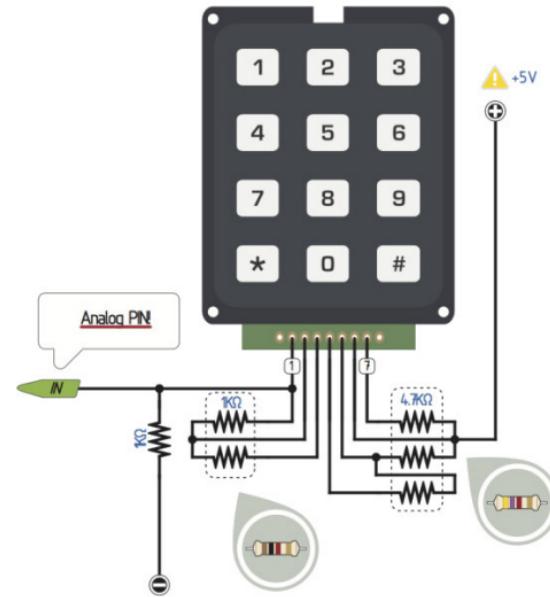
2.34 038



Connect a Keypad (with Interrupt)

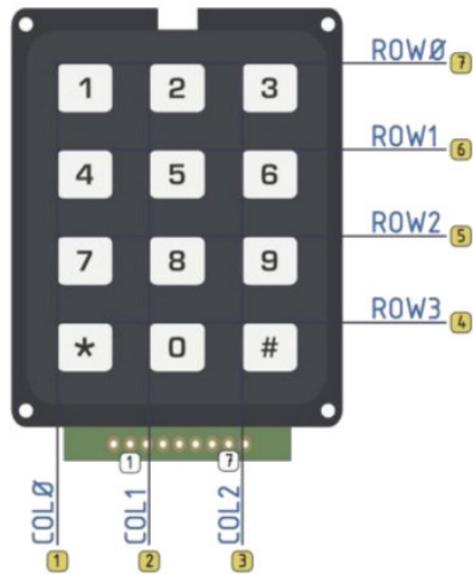
2.35 039

Connect a Keypad (using 1 analog input)



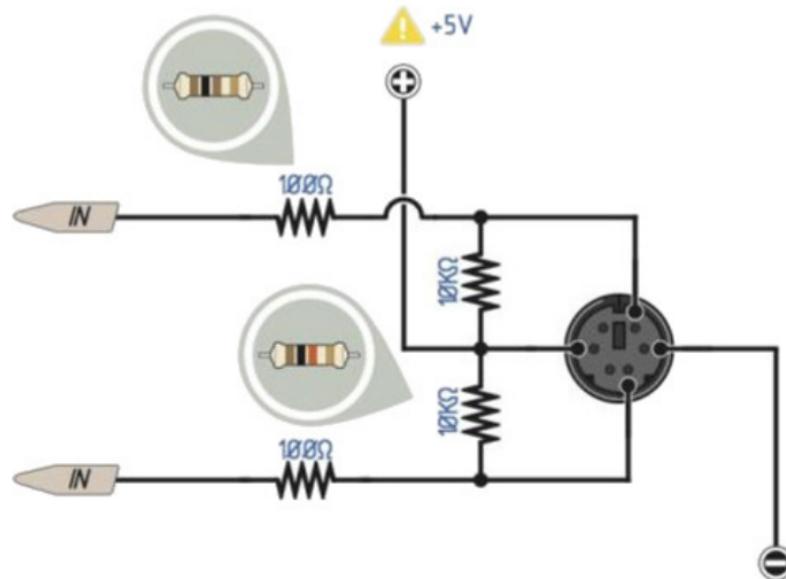
2.36 040

Keypad



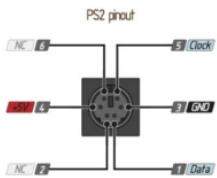
2.37 041

Connect a PS2 device



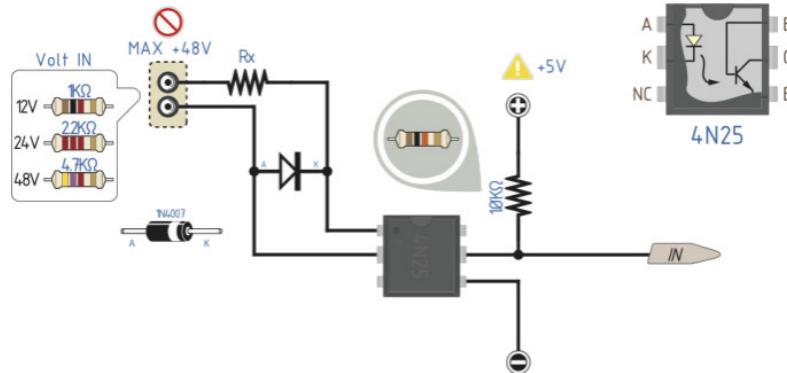
2.38 042

Keyboard scan codes



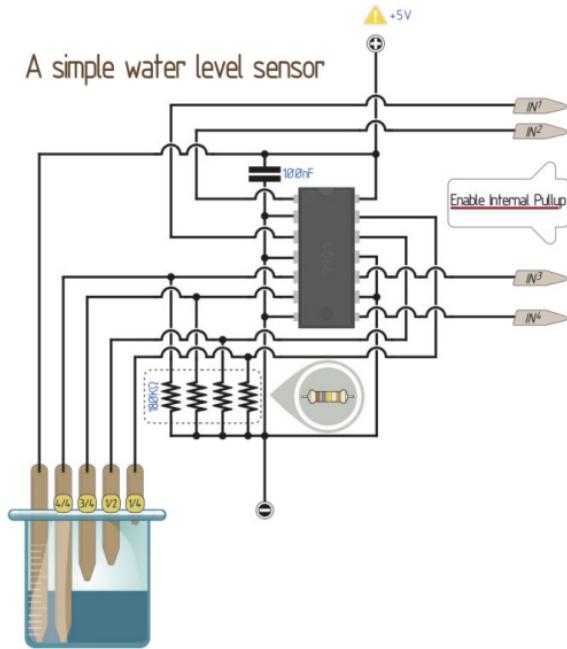
2.39 043

Optocoupled Input (AC Input)



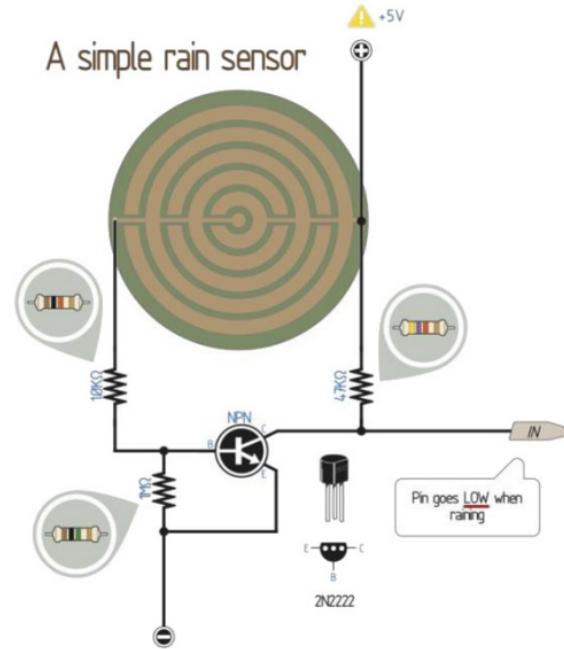
2.40 044

A simple water level sensor



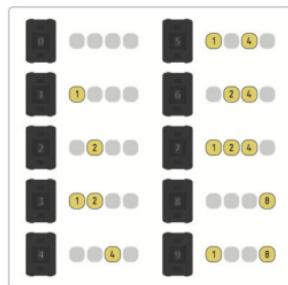
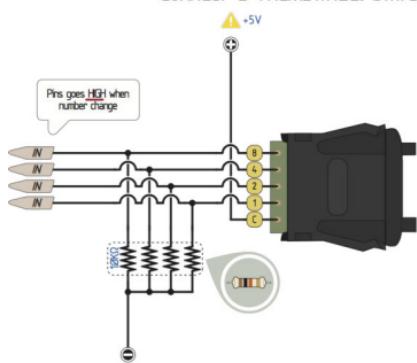
2.41 045

A simple rain sensor

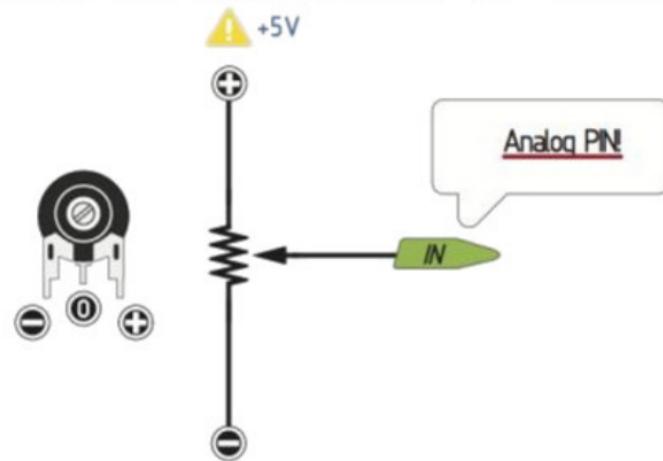


2.42 046

Connect a Thumbwheel switch

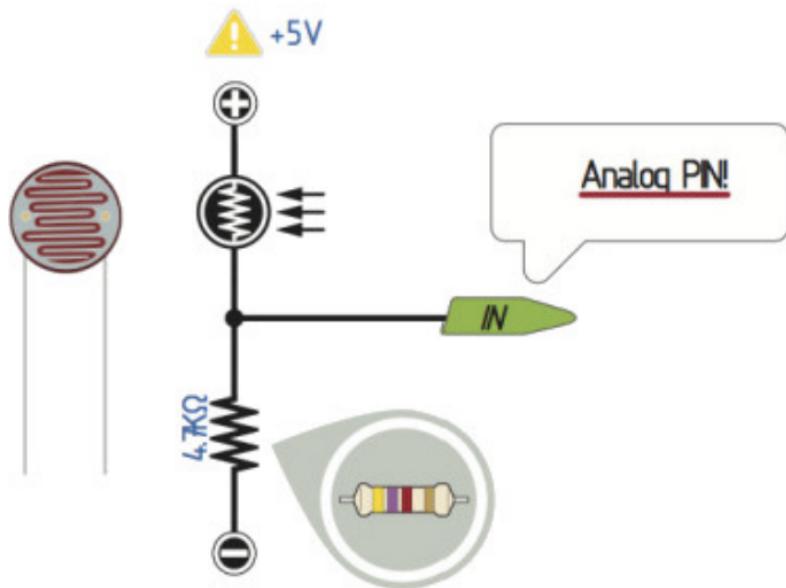
**2.43 047**

Connect a Potentiometer (or Trimmer)



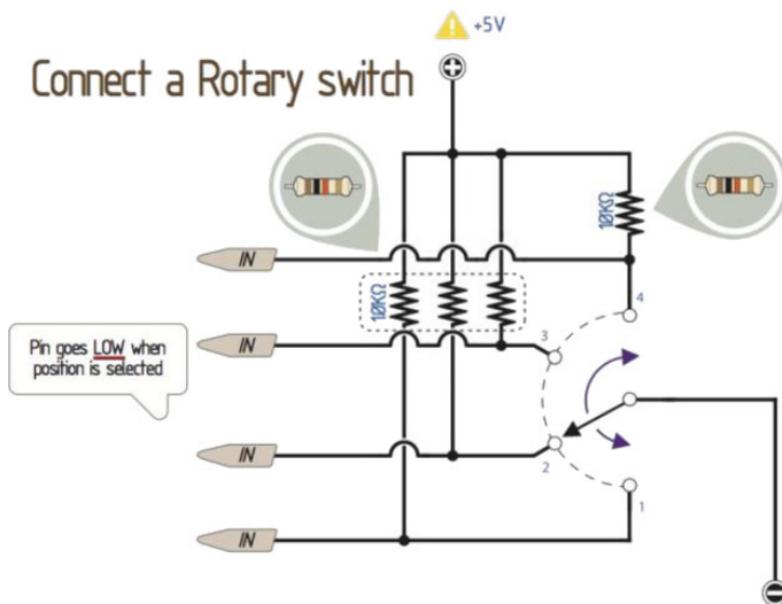
2.44 048

Connect a Photoresistor



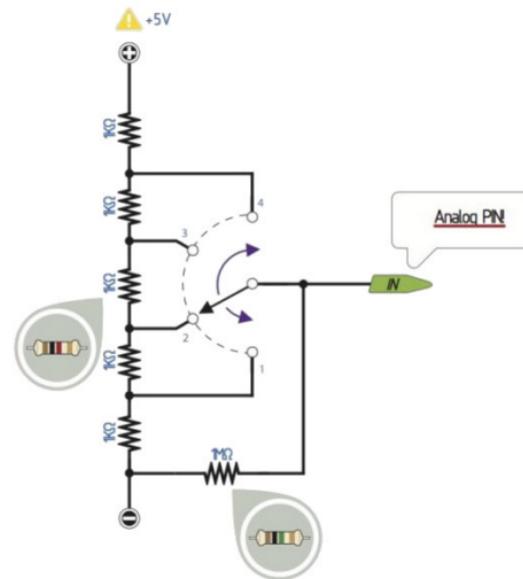
2.45 049

Connect a Rotary switch

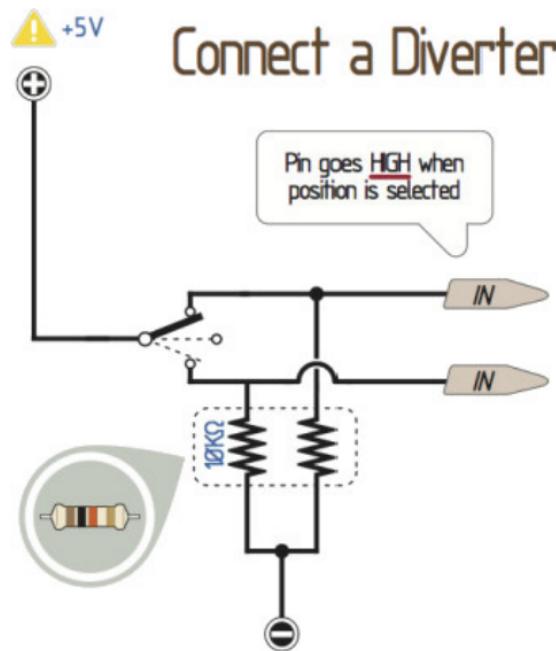


2.46 050

Connect a Rotary switch (using 1 analog input)

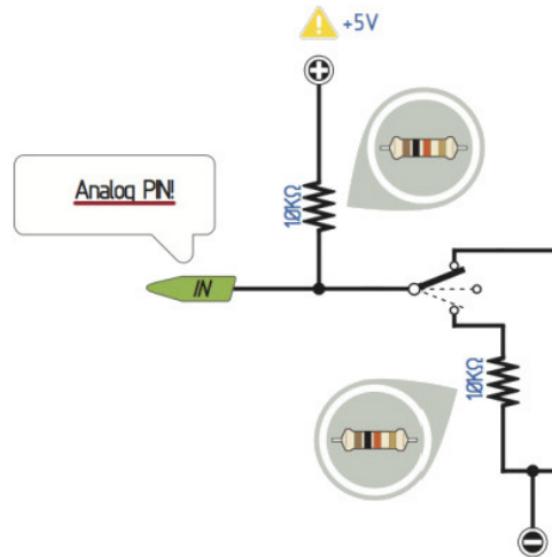


2.47 051

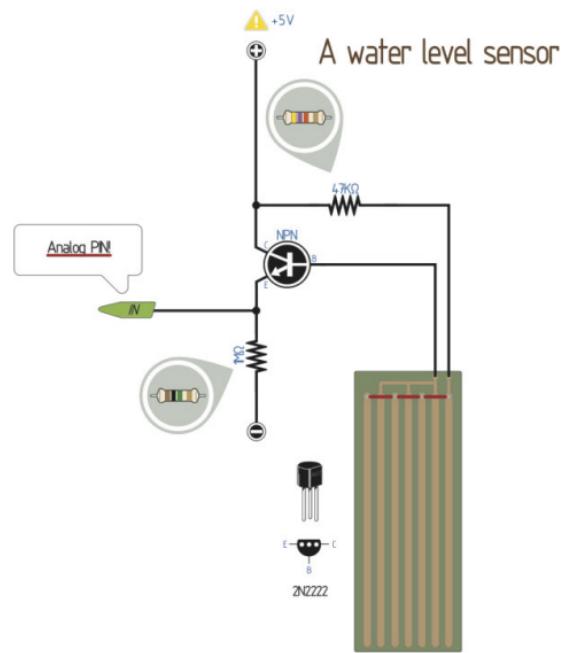


2.48 052

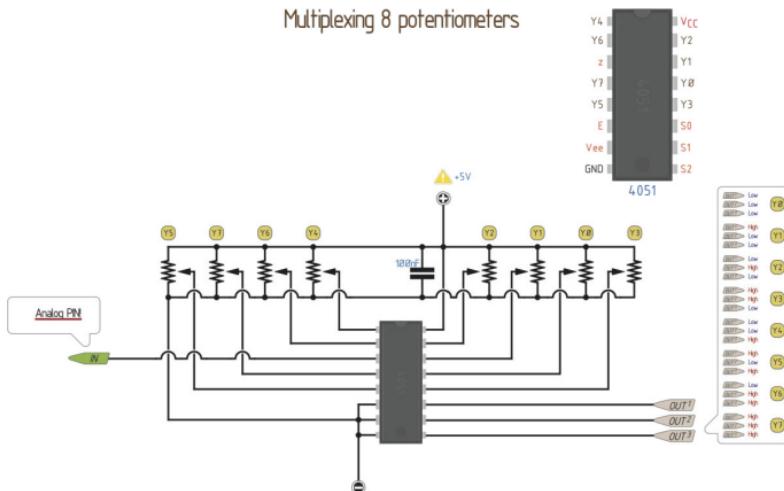
Connect a Diverter (using 1 analog input)

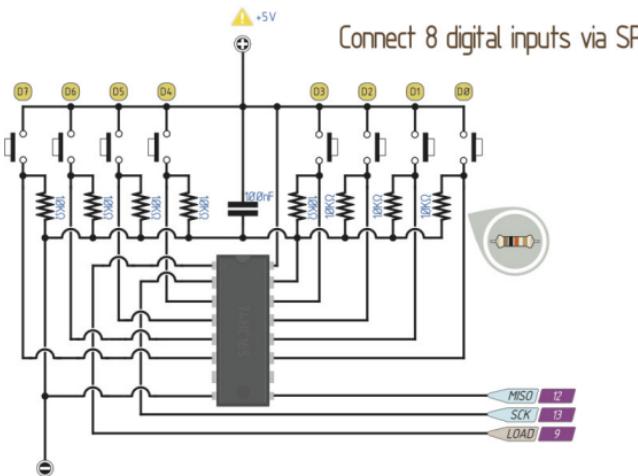
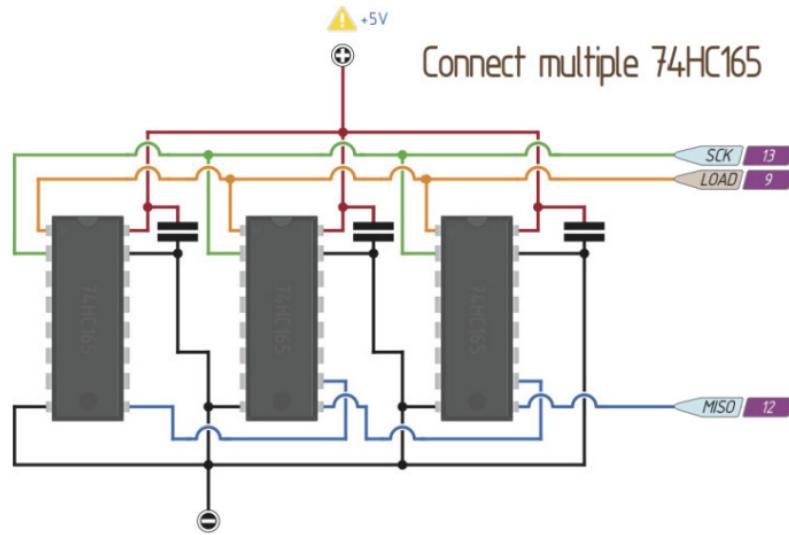


2.49 053



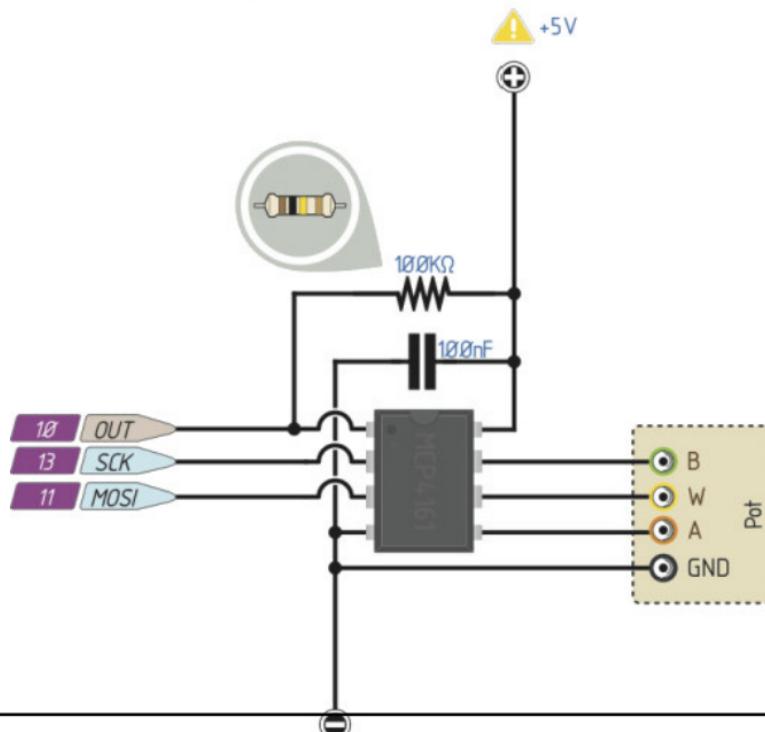
2.50 054



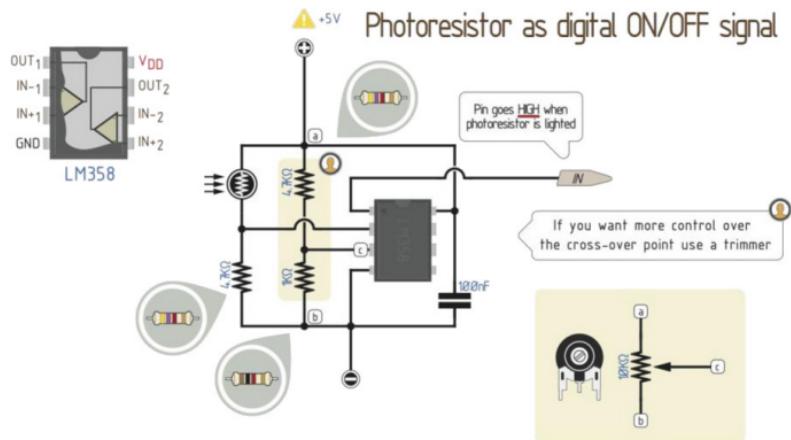
2.51 055**2.52 056**

2.53 057

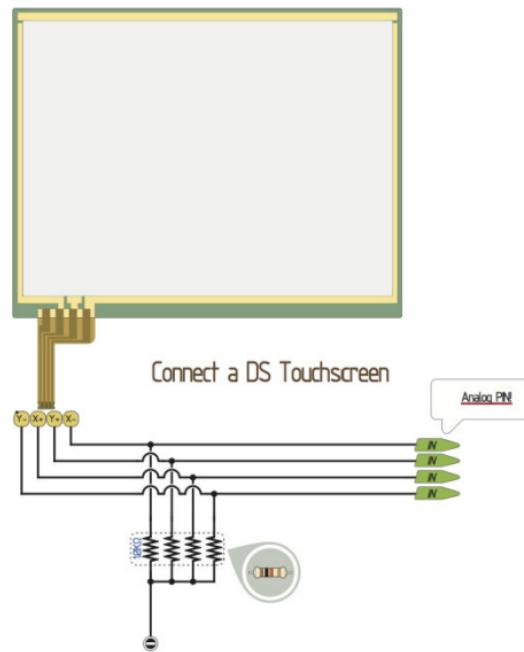
Connect a Digital Potentiometer (MCP4161)



2.54 058

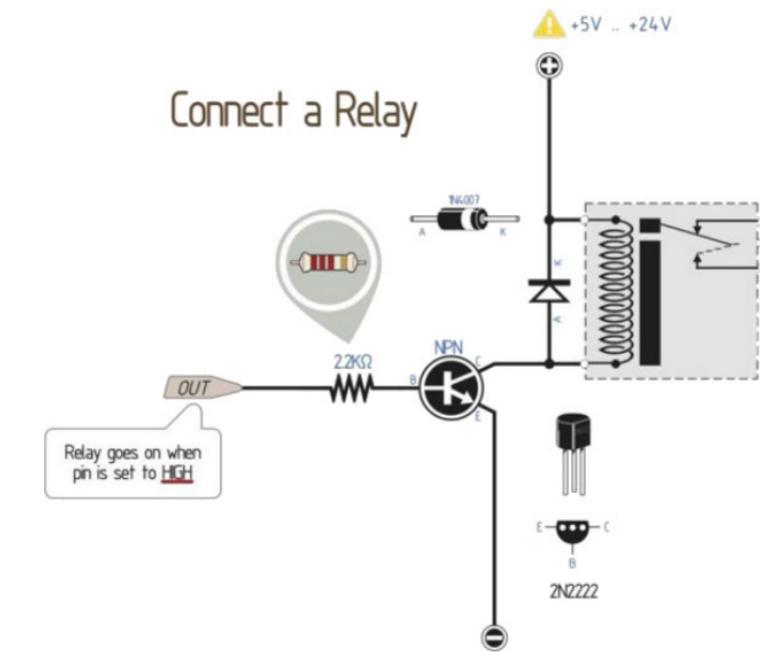


2.55 059



Analog PIN

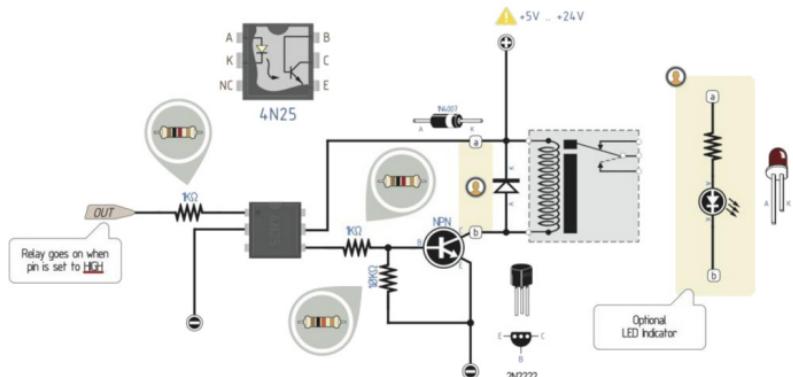
2.56 060



Connect a Relay

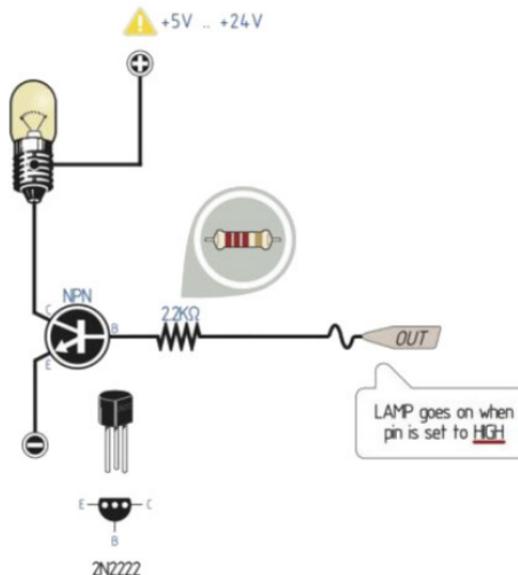
2.57 061

Connect a Relay (Optoisolated)



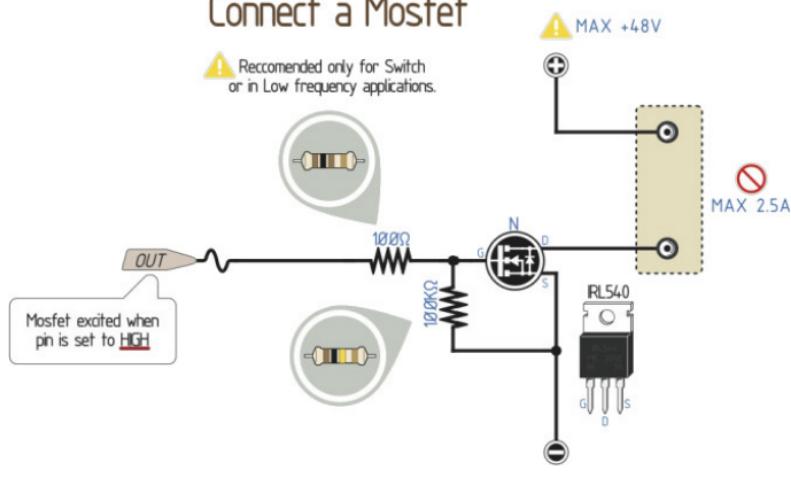
2.58 062

Connect a Lamp (DC LOW Voltage)



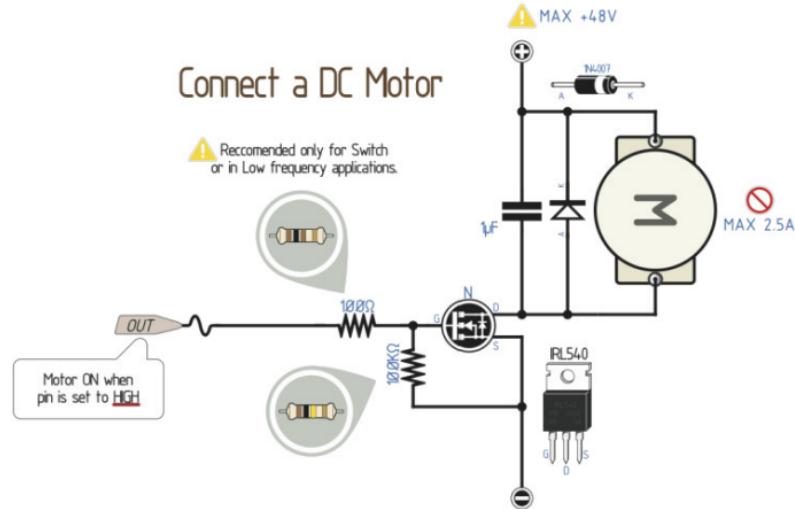
2.59 063

Connect a Mosfet

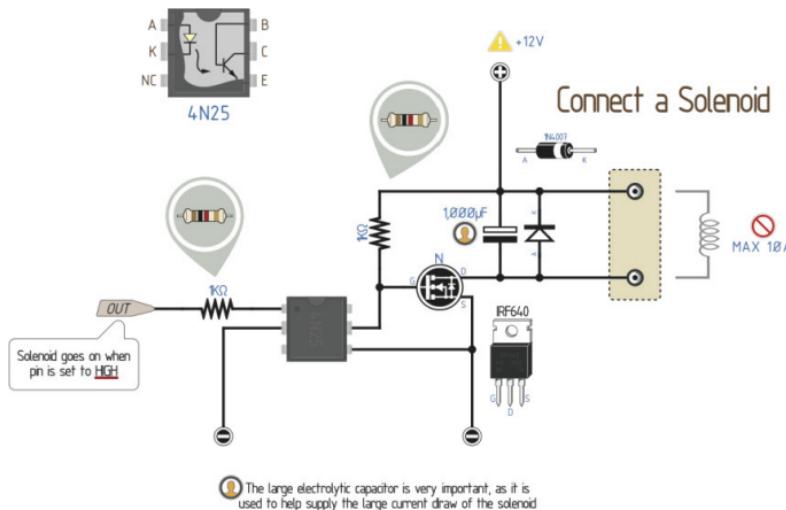


2.60 064

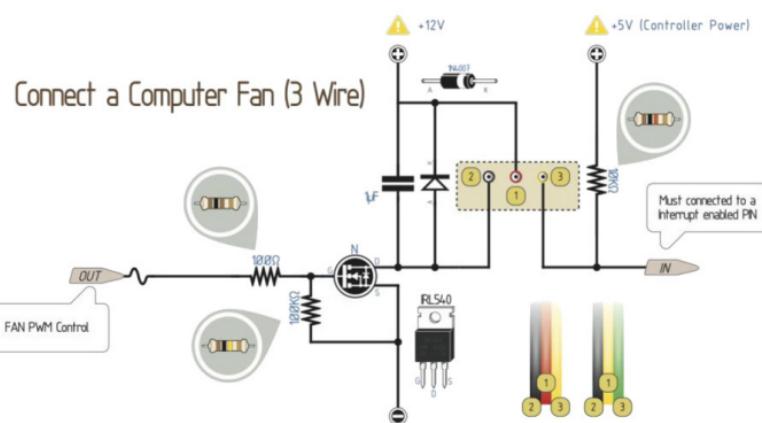
Connect a DC Motor



2.61 065

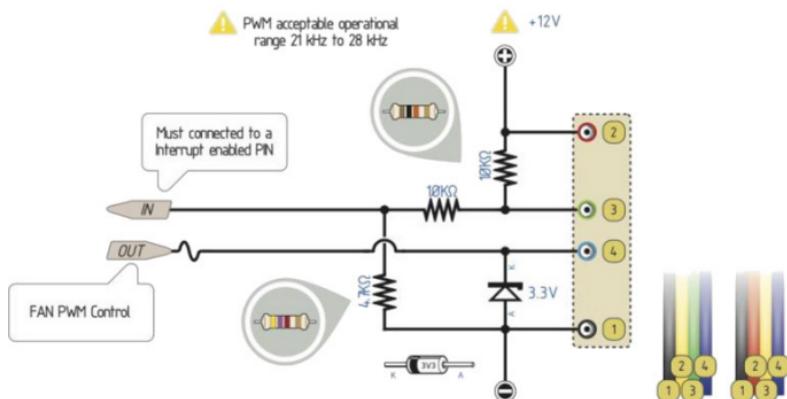


2.62 066



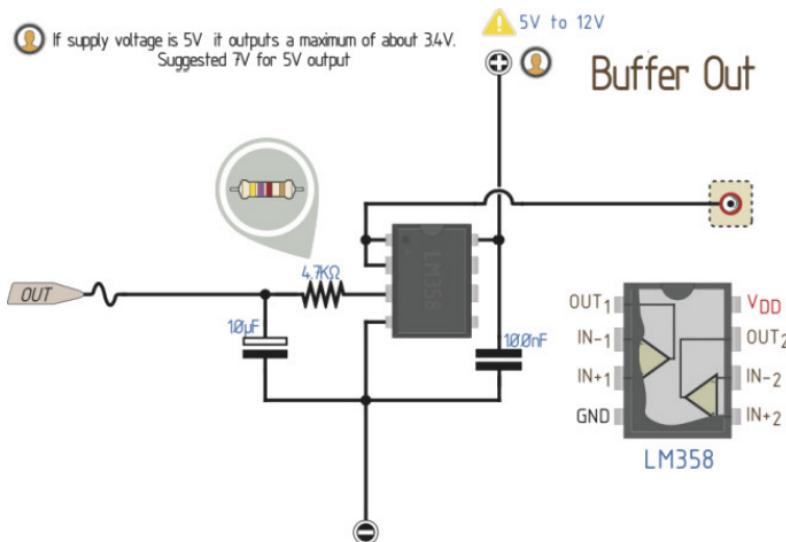
2.63 067

Connect a Computer Fan (4 Wire)



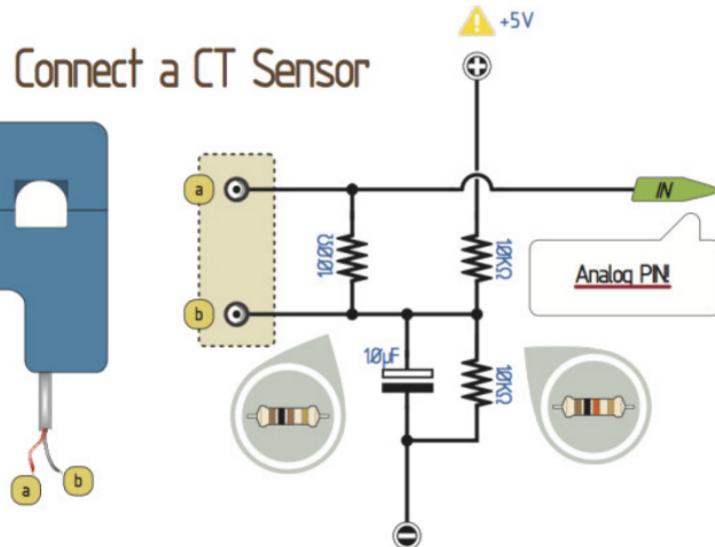
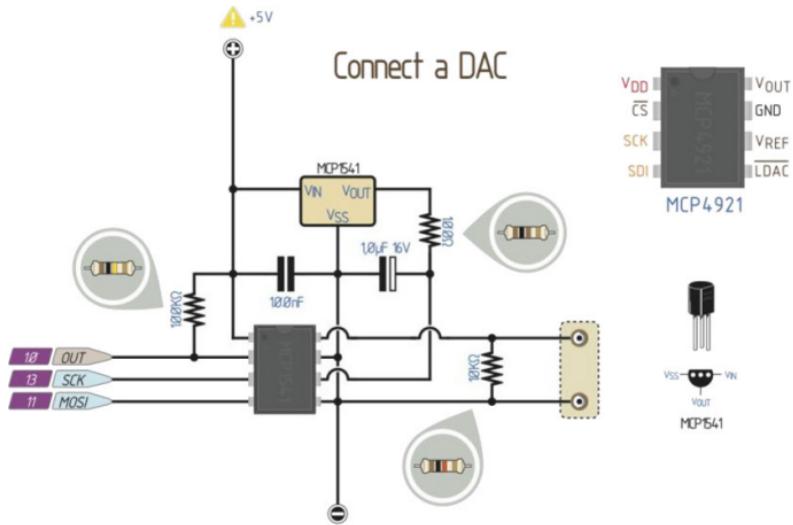
2.64 068

If supply voltage is 5V it outputs a maximum of about 3.4V.
Suggested 7V for 5V output

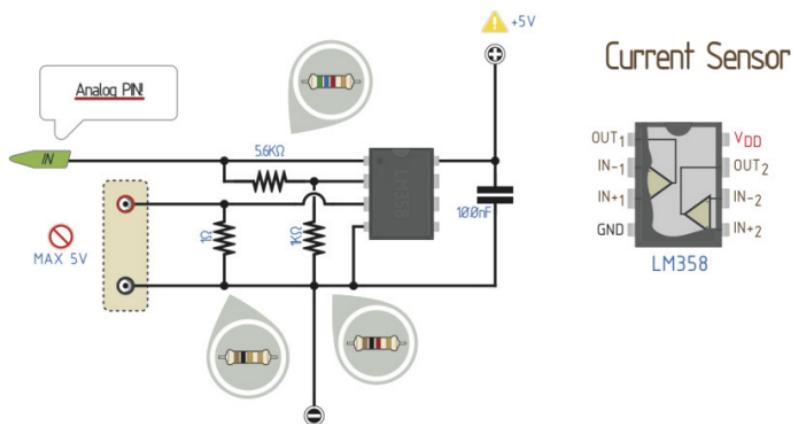


2.65 069

2.66 070

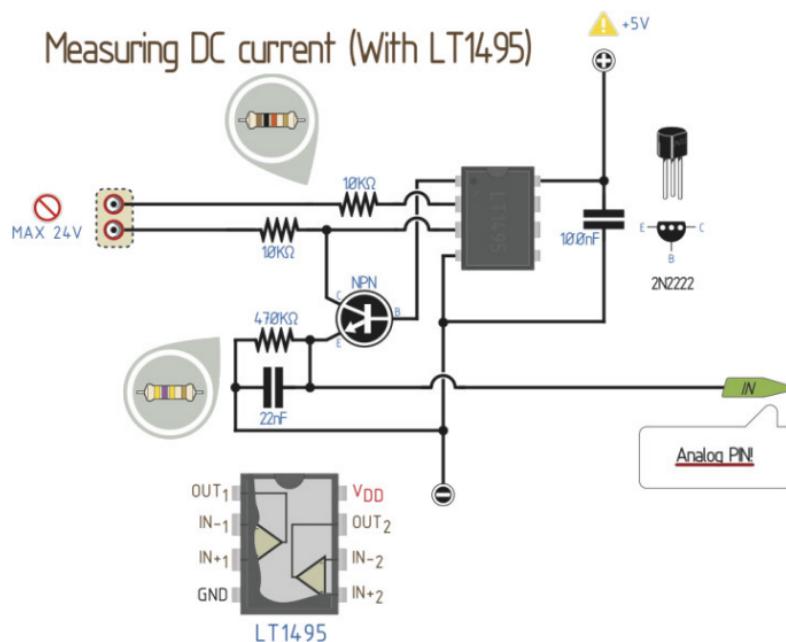


2.67 071



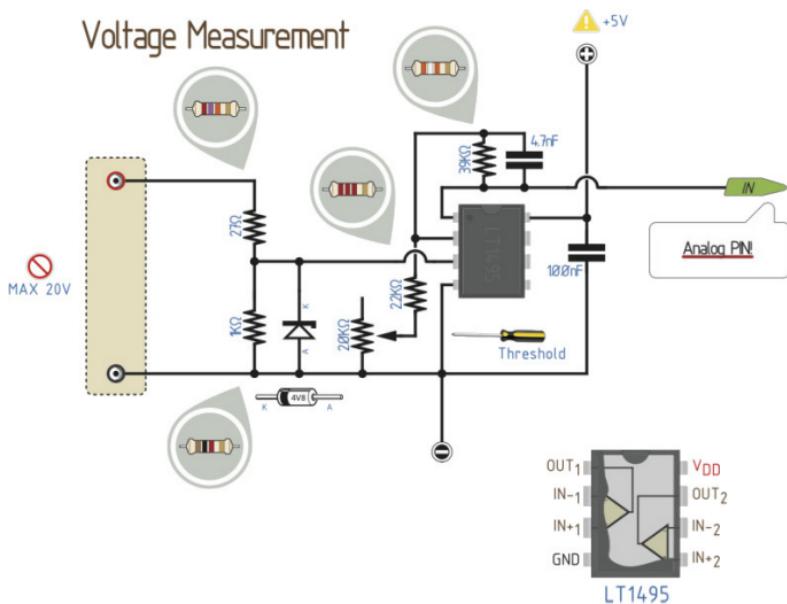
2.68 072

Measuring DC current (With LT1495)



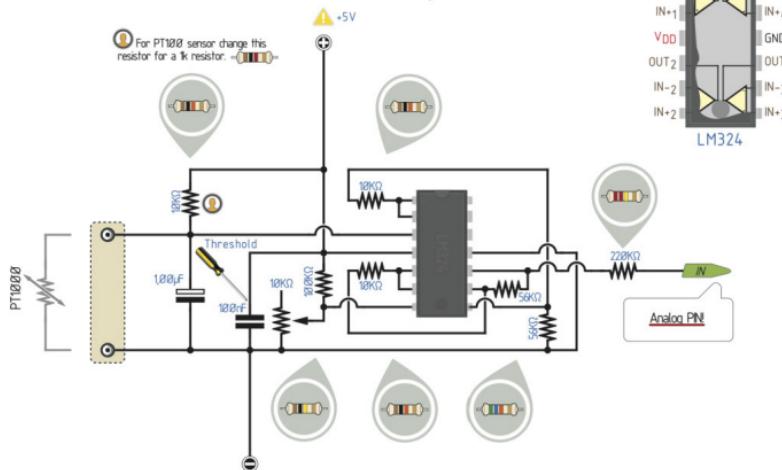
2.69 073

Voltage Measurement



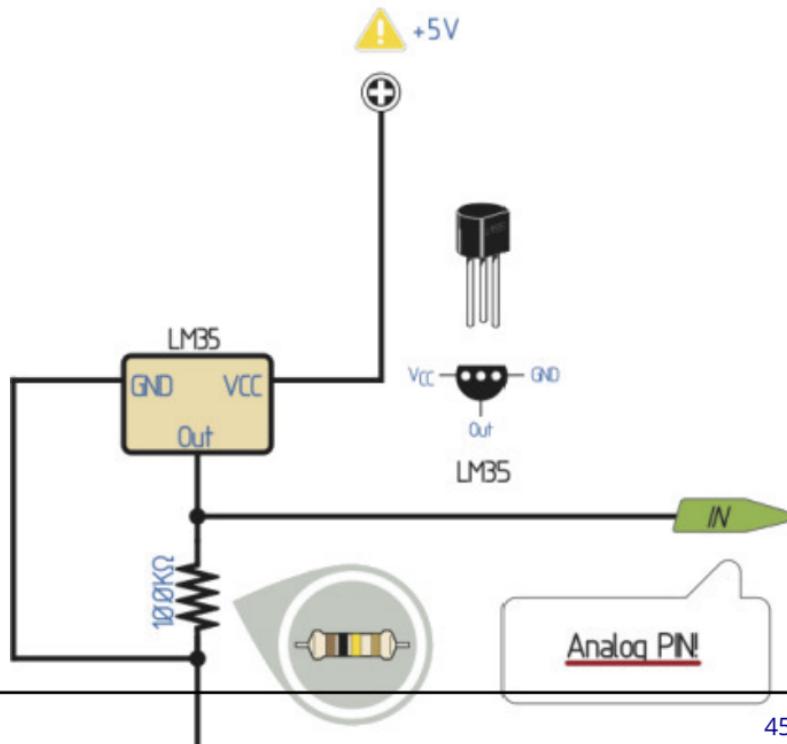
2.70 074

Connect a RTD Temperature Sensor



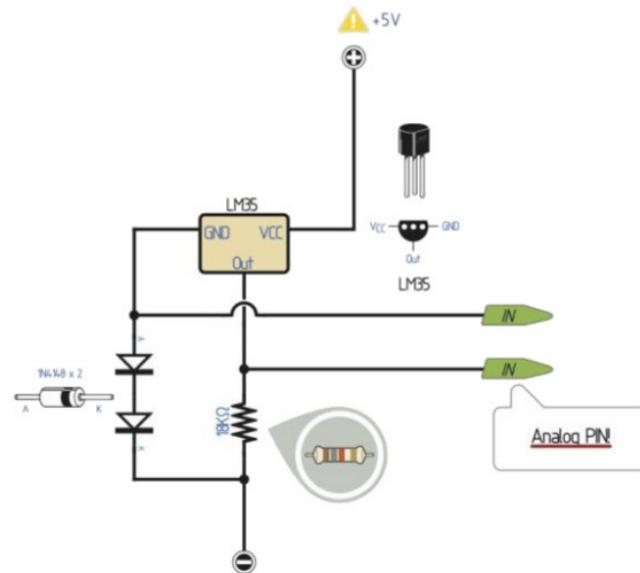
2.71 075

LM35 Temperature Sensor



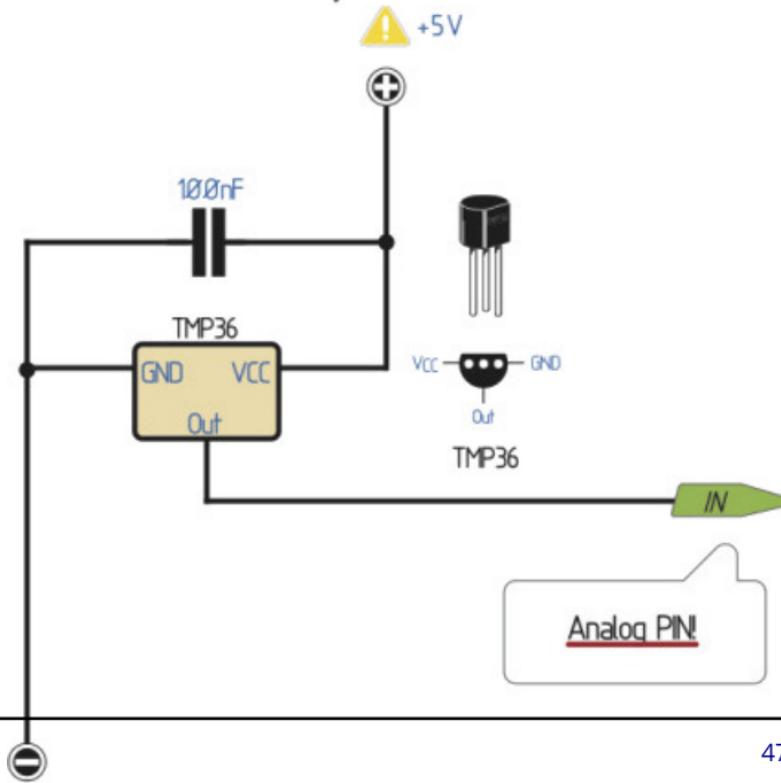
2.72 076

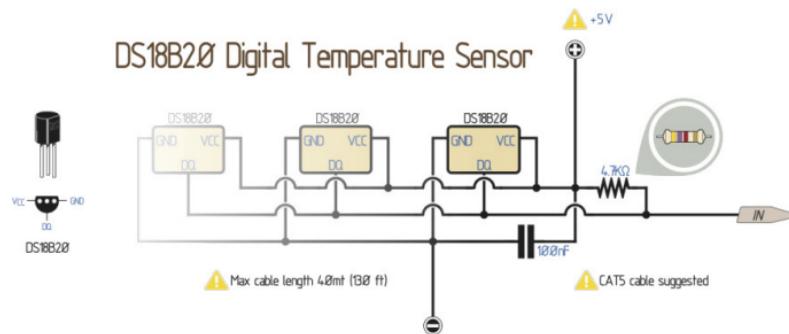
LM35 Temperature Sensor (Full range scale application)



2.73 077

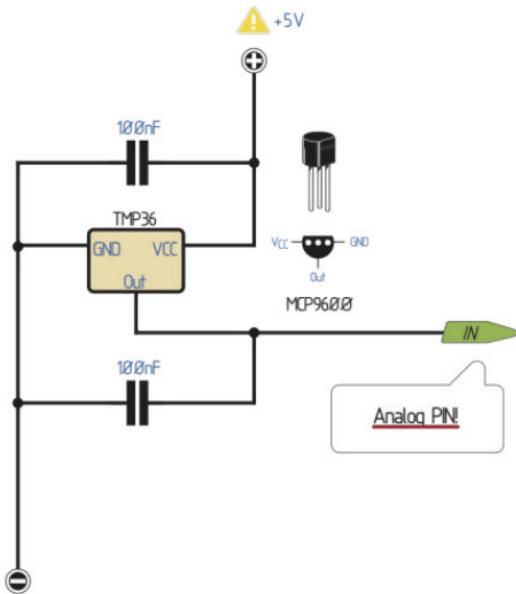
TMP36 Temperature Sensor



2.74 078

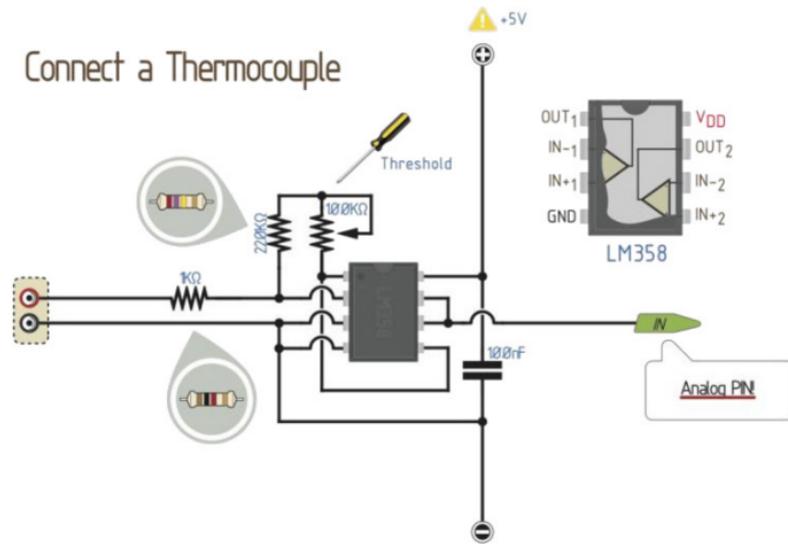
2.75 079

MCP9600 Temperature Sensor

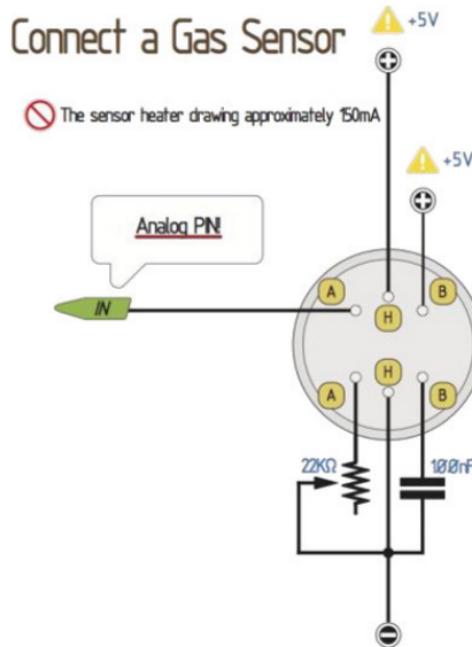


2.76 080

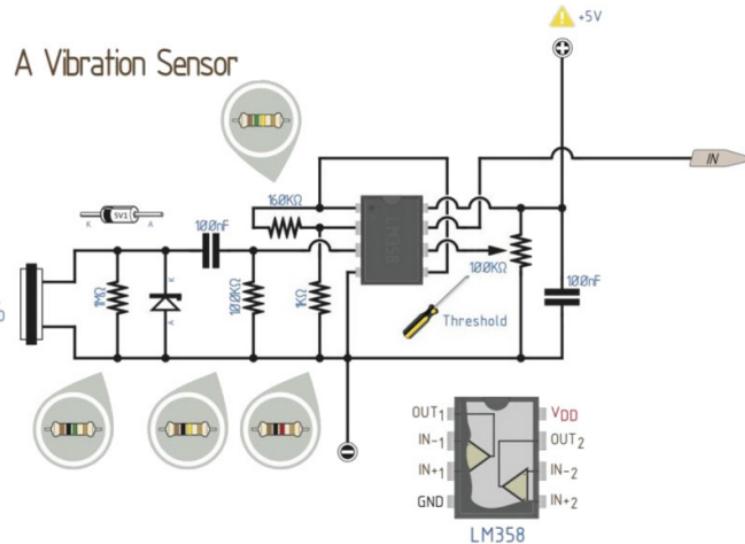
Connect a Thermocouple



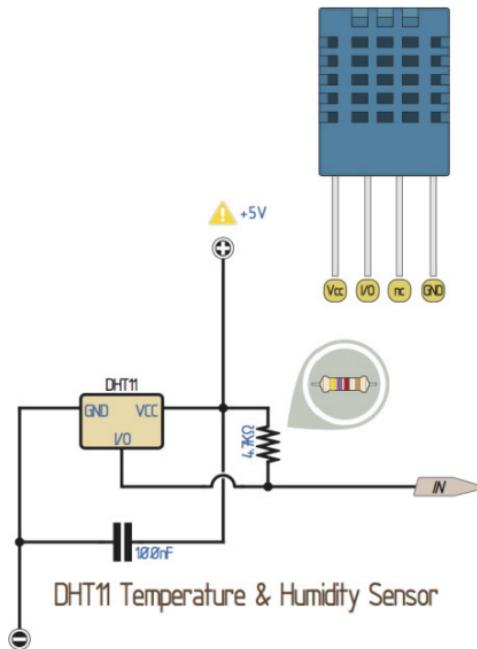
2.77 081



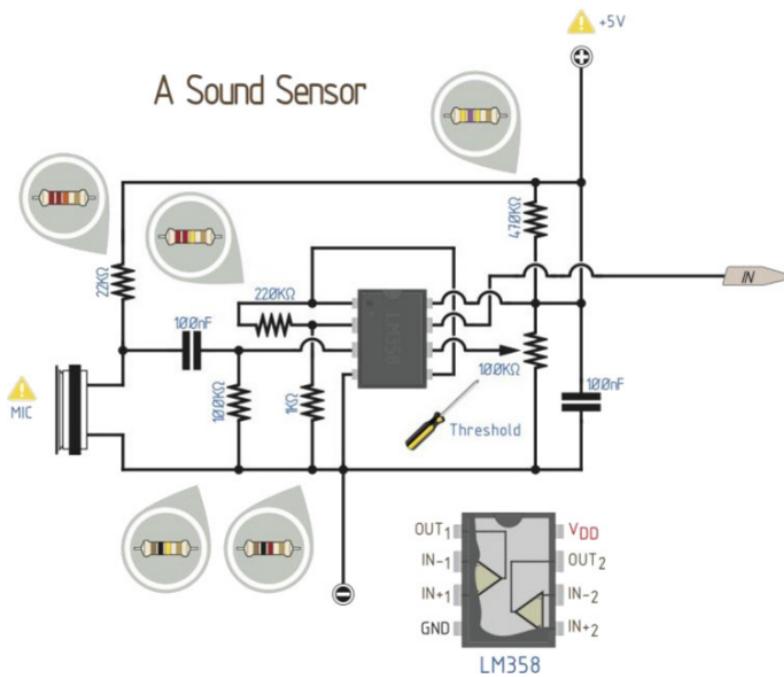
2.78 082



2.79 083

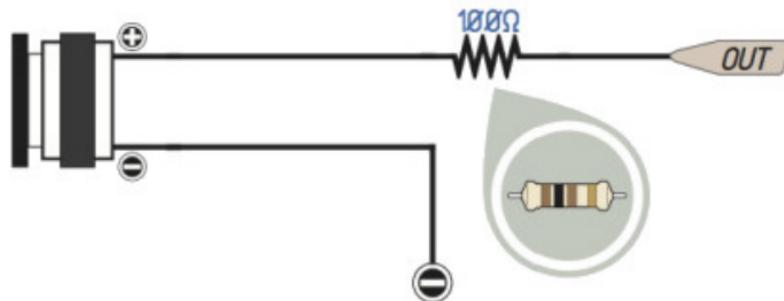


2.80 084



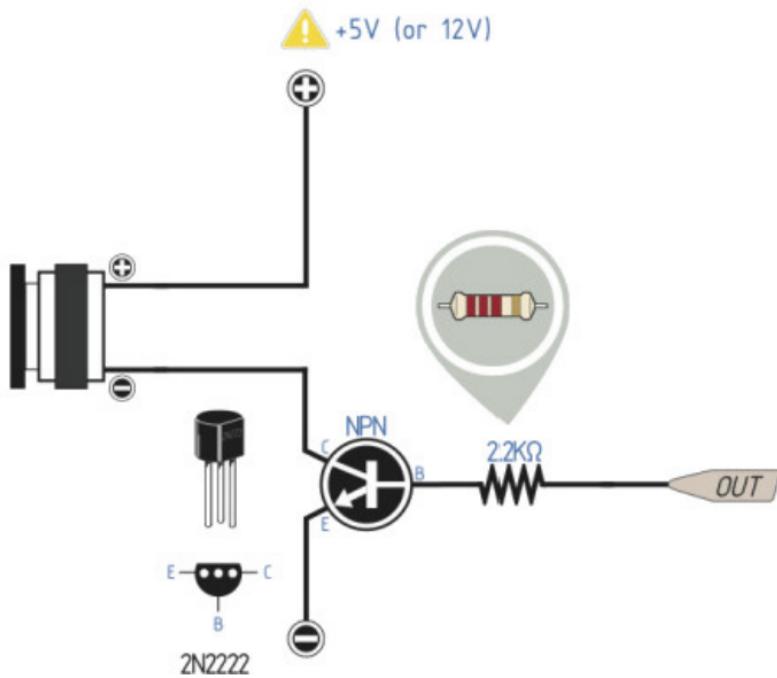
2.81 085

Connect a Buzzer



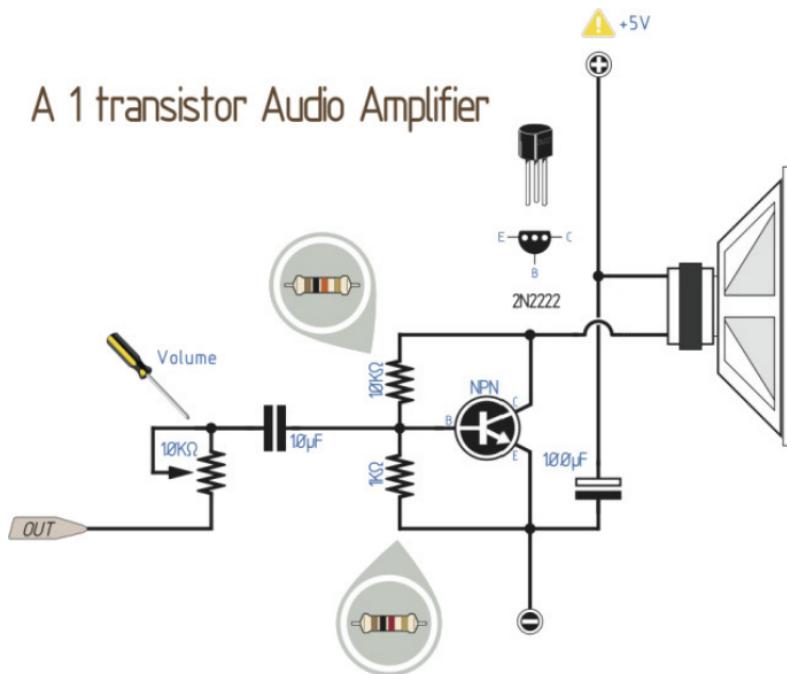
2.82 086

Connect a Buzzer (With Transistor)



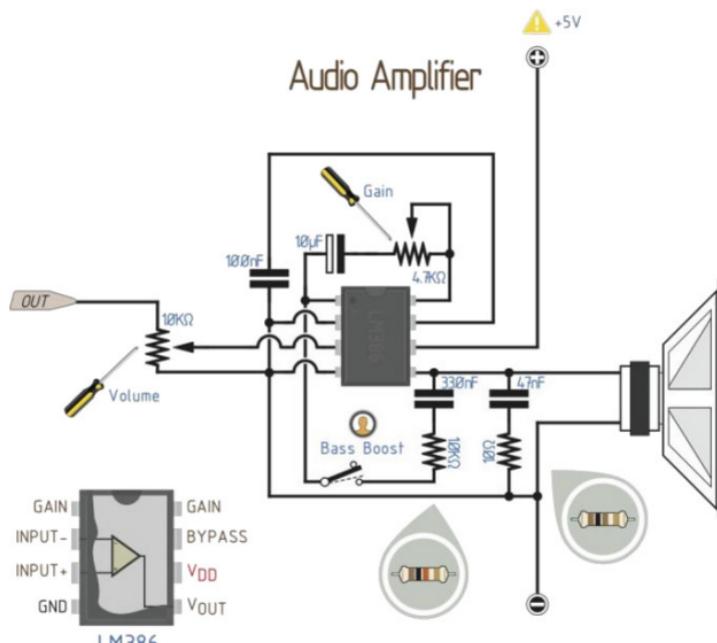
2.83 087

A 1 transistor Audio Amplifier



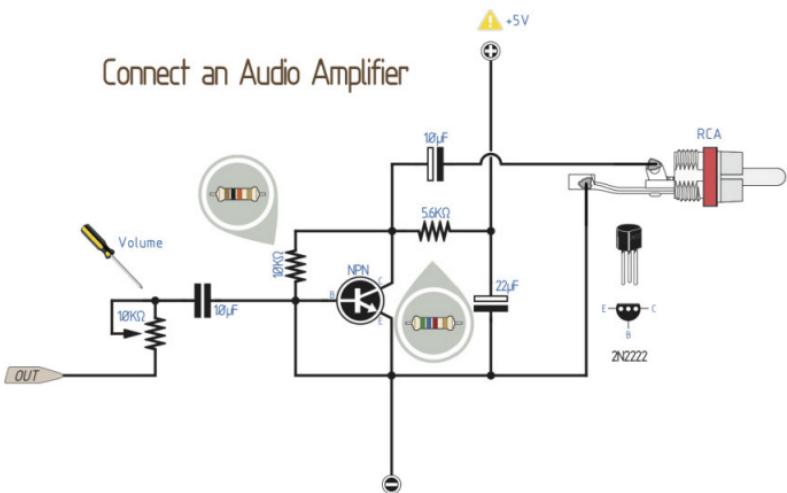
2.84 088

Audio Amplifier



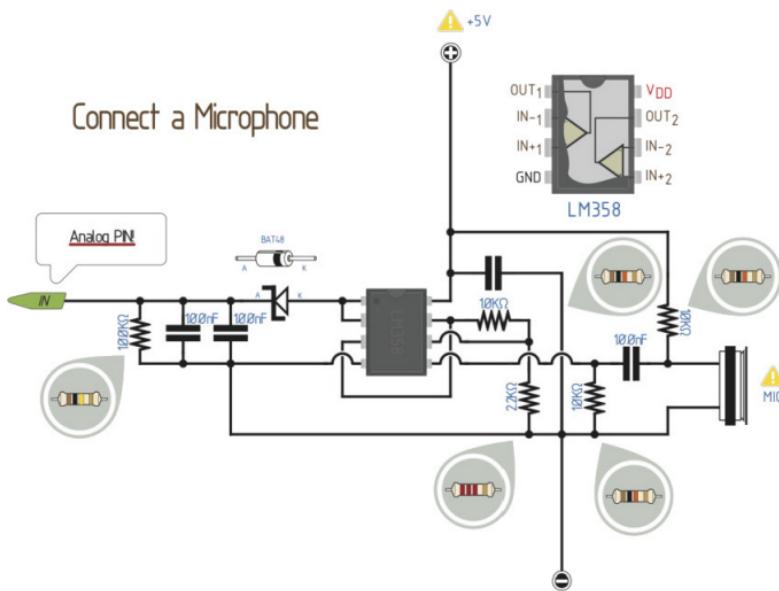
2.85 089

Connect an Audio Amplifier



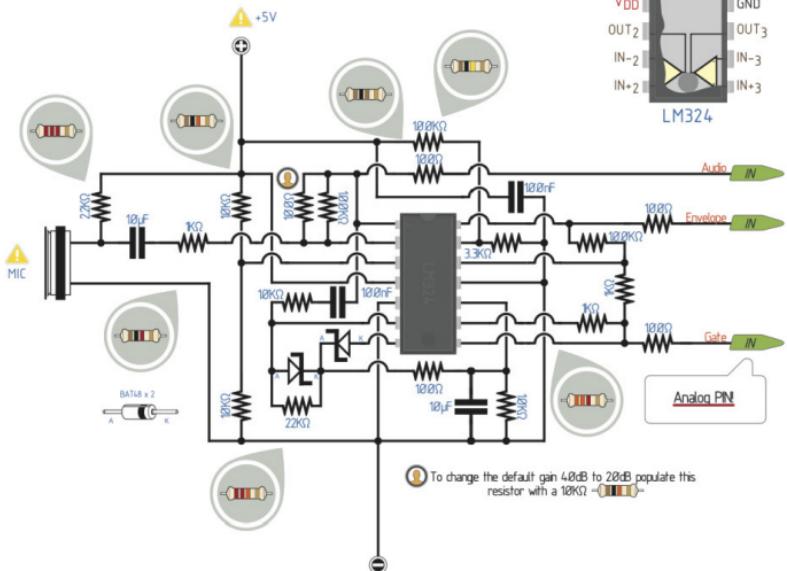
2.86 090

Connect a Microphone



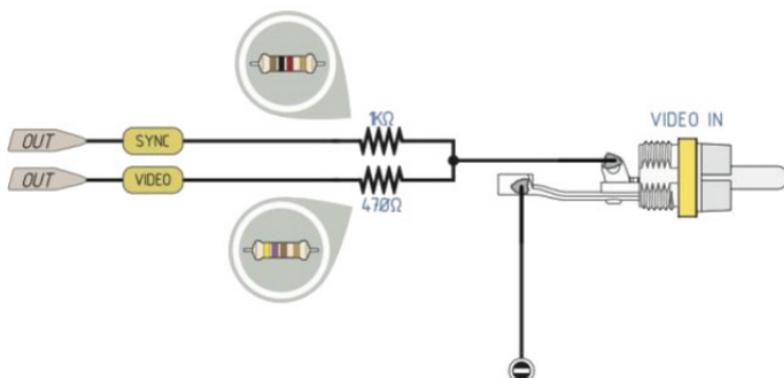
2.87 091

Connect a Microphone (Advanced)



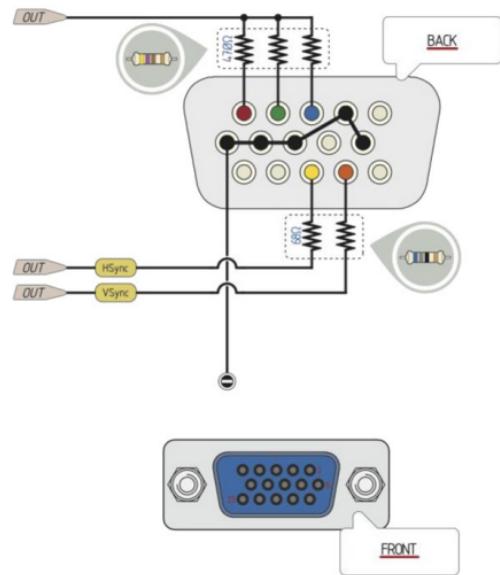
2.88 092

Connect to Composite Video



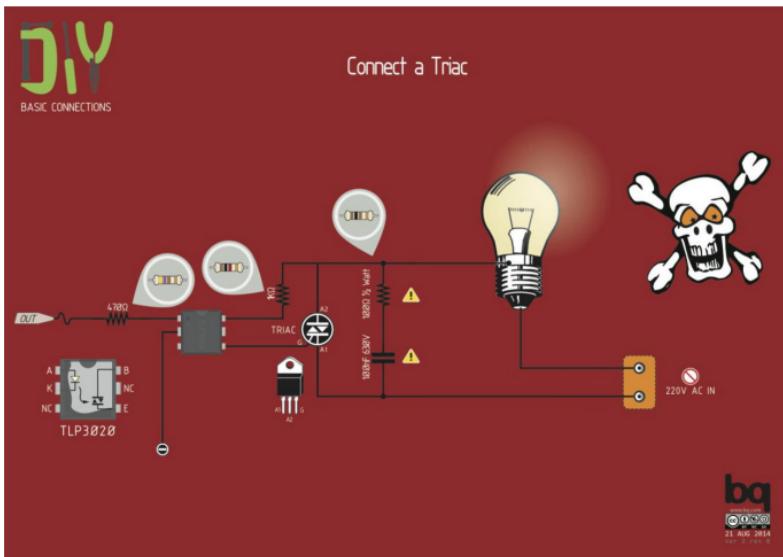
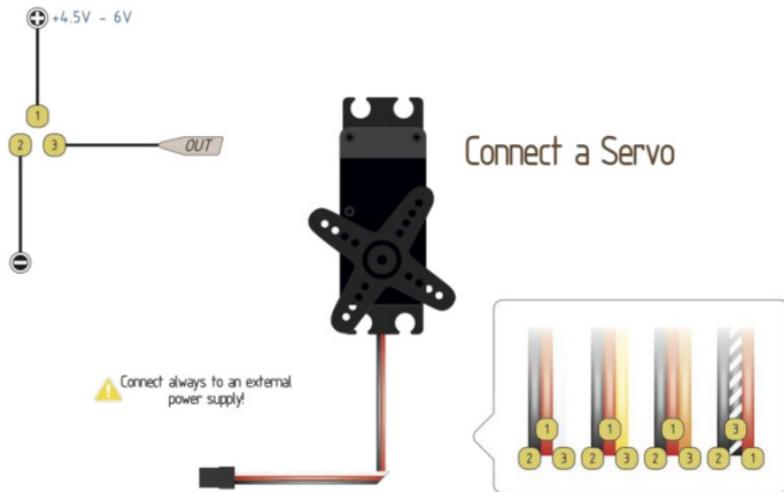
2.89 093

Connect to VGA



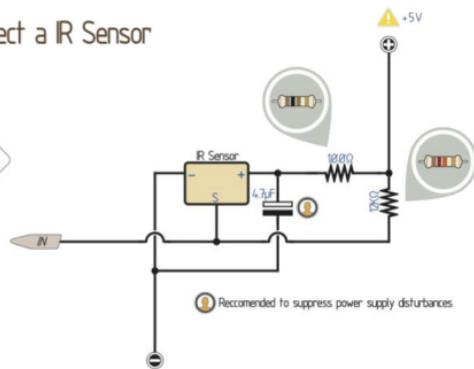
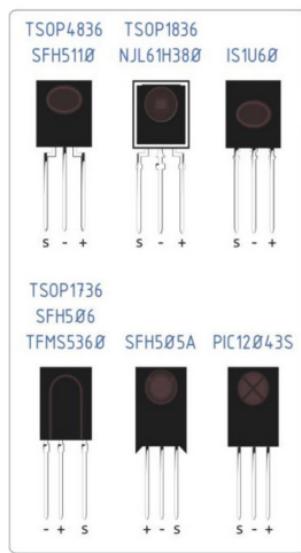
2.90 094



2.91 095**2.92 096**

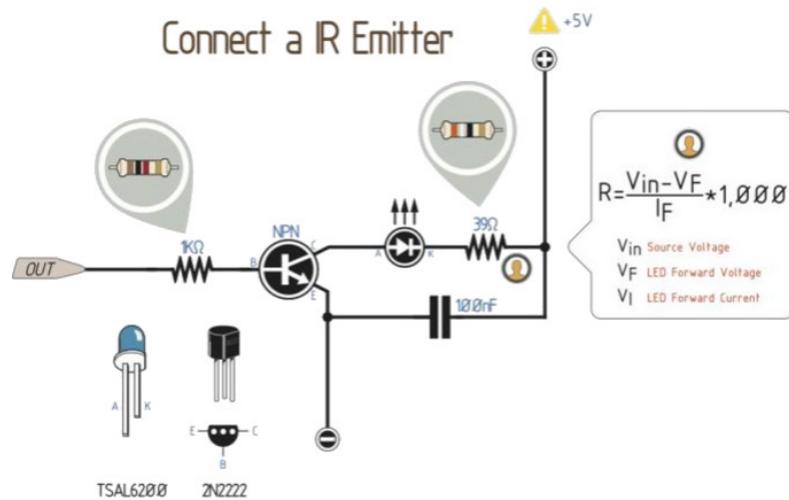
2.93 097

Connect a IR Sensor



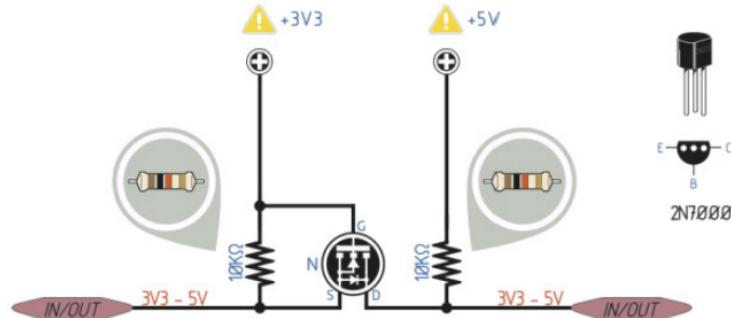
2.94 098

Connect a IR Emitter

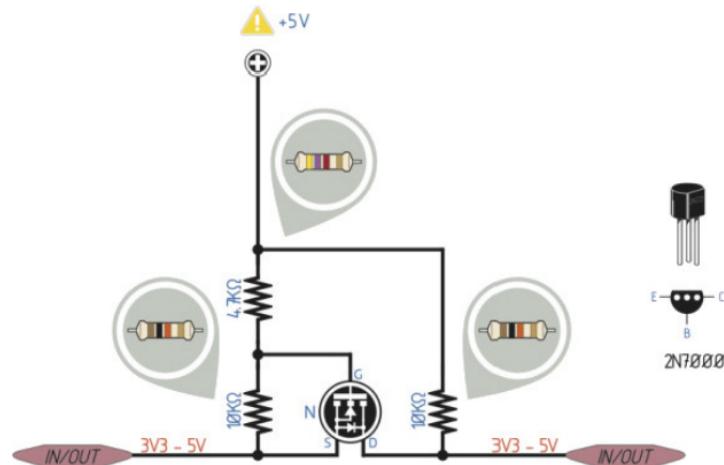


2.95 099

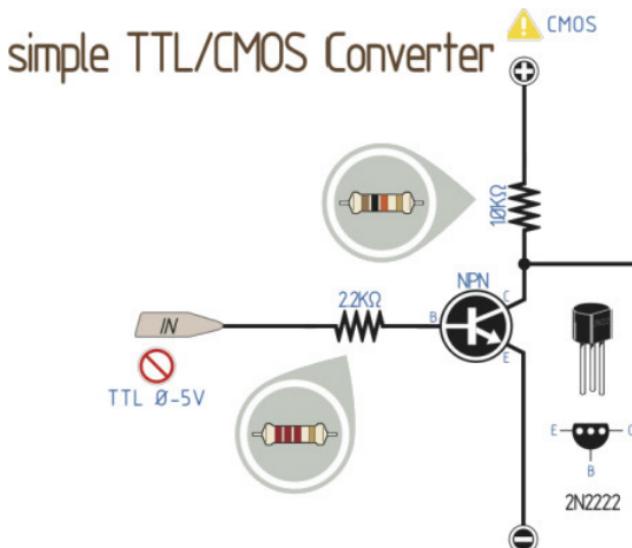
Bi-Directional Voltage Level Converter 3.3V to 5V



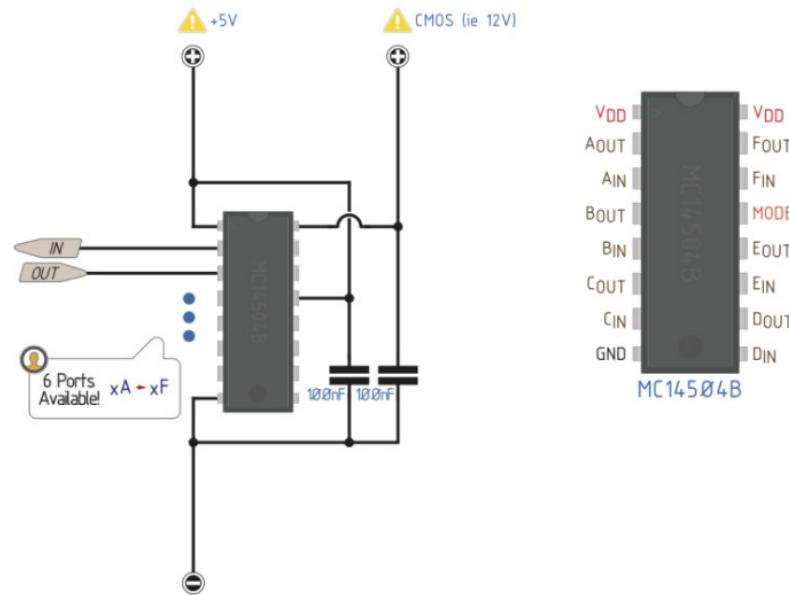
2.96 100

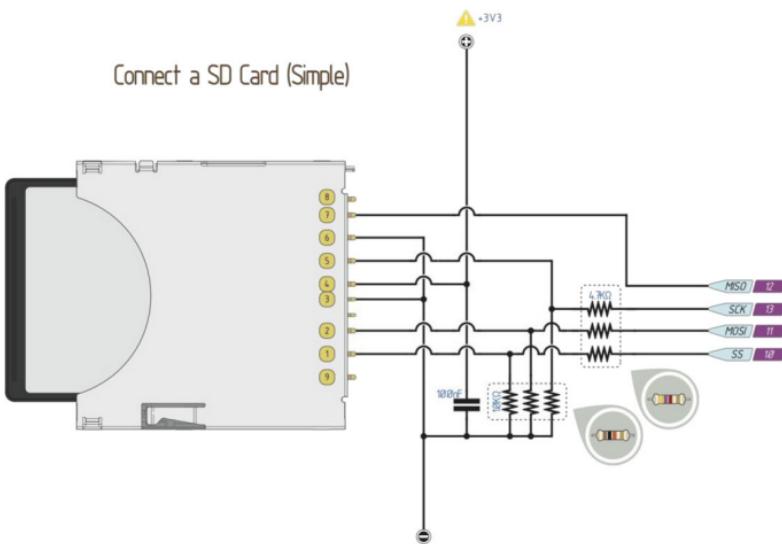
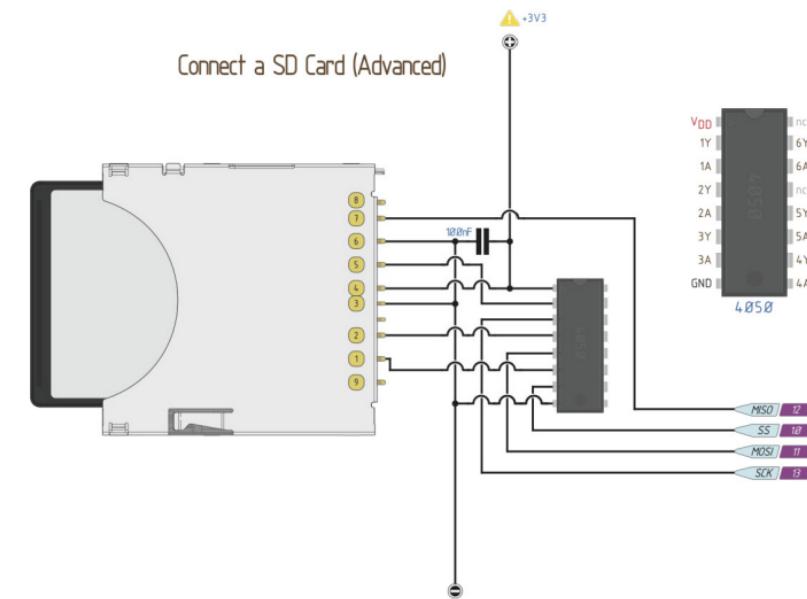
Bi-Directional Voltage Level Converter 3.3V to 5V
(with Voltage Divider)

2.97 101



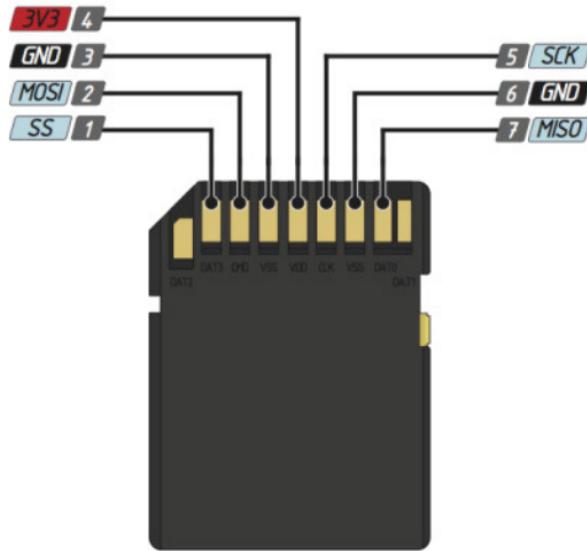
2.98 102

TTL/CMOS Converter (6 ports)

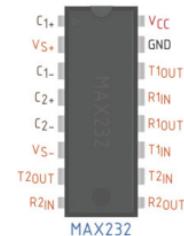
2.99 103**2.100 104**

2.101 105

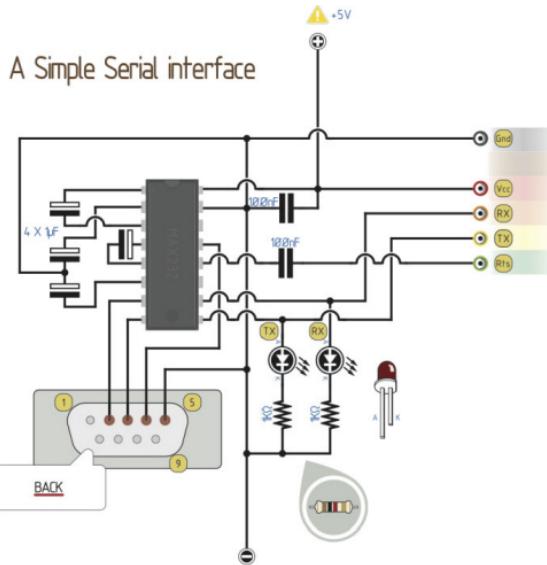
SD Card pinout



2.102 106

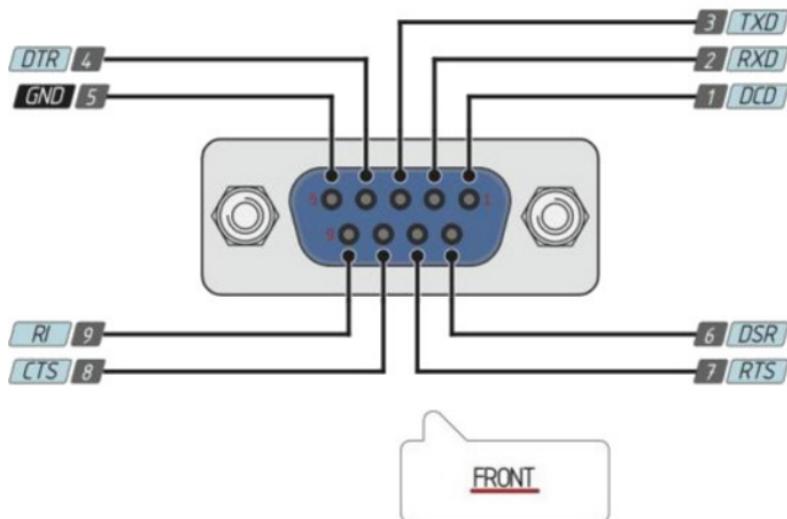


A Simple Serial interface



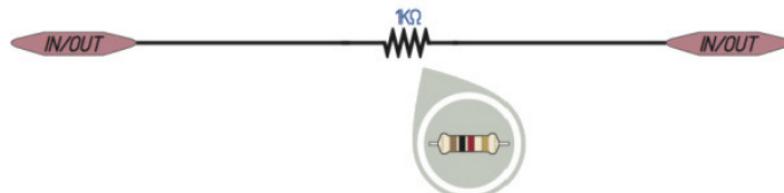
2.103 107

RS232 Pinout



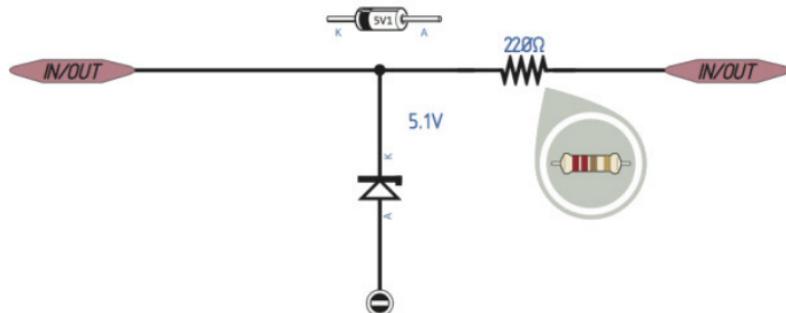
2.104 108

Connect 2 MPU's



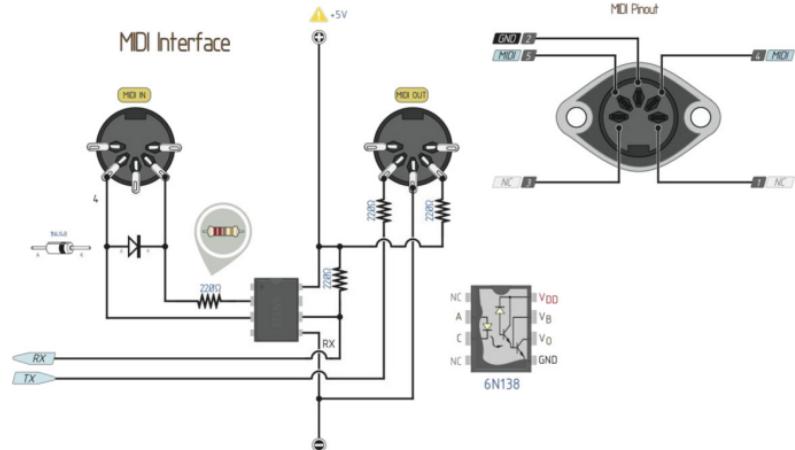
2.105 109

Protect a I/O Pin

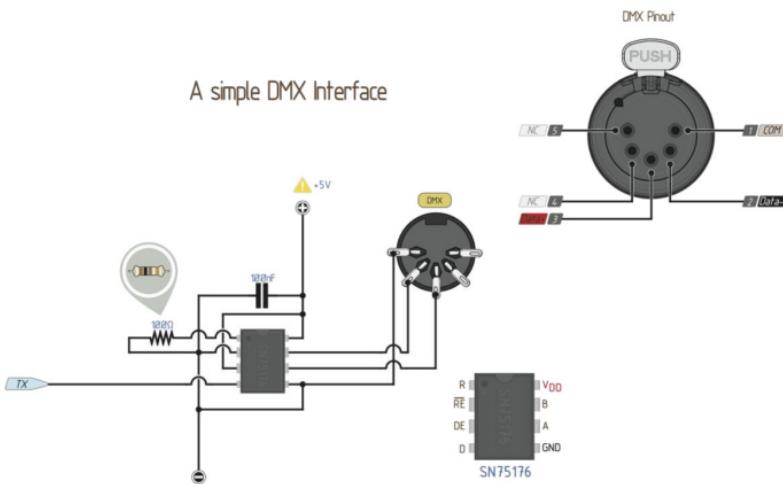


2.106 110

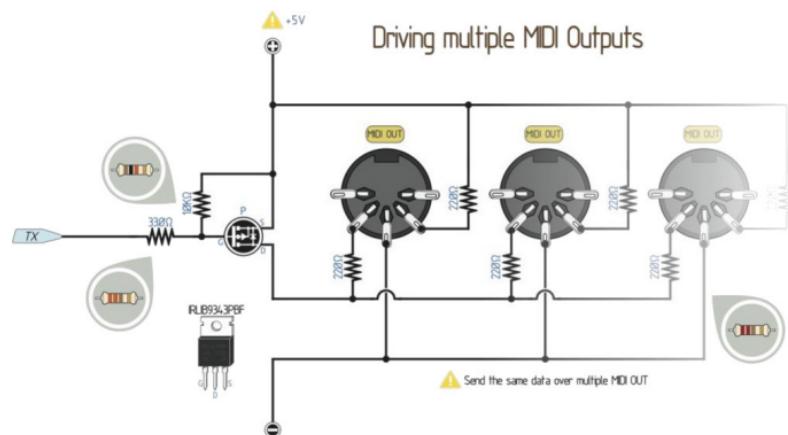
MIDI Interface



2.107 111

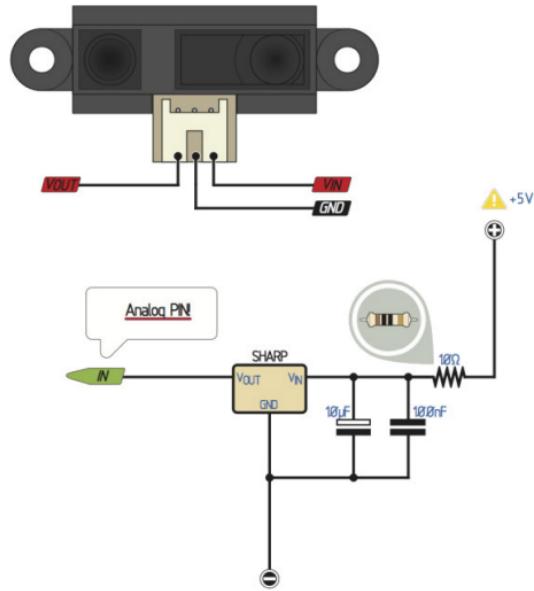


2.108 112



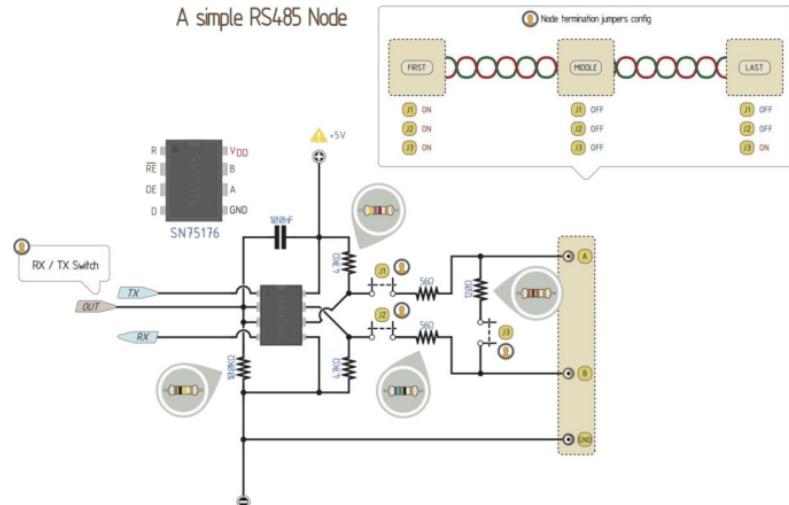
2.109 113

Connect a SHARP GP2Y0A21 Distance Sensor

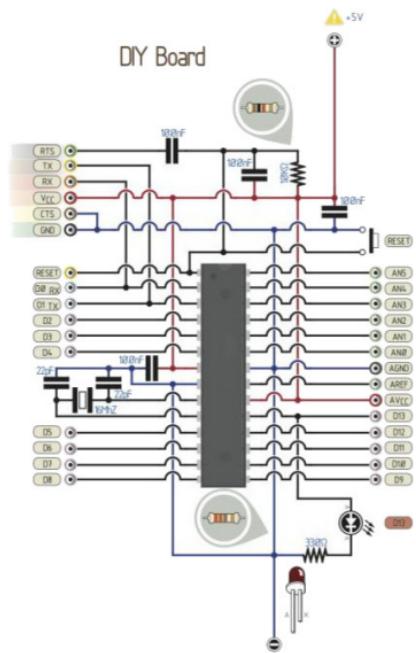


2.110 114

A simple RS485 Node

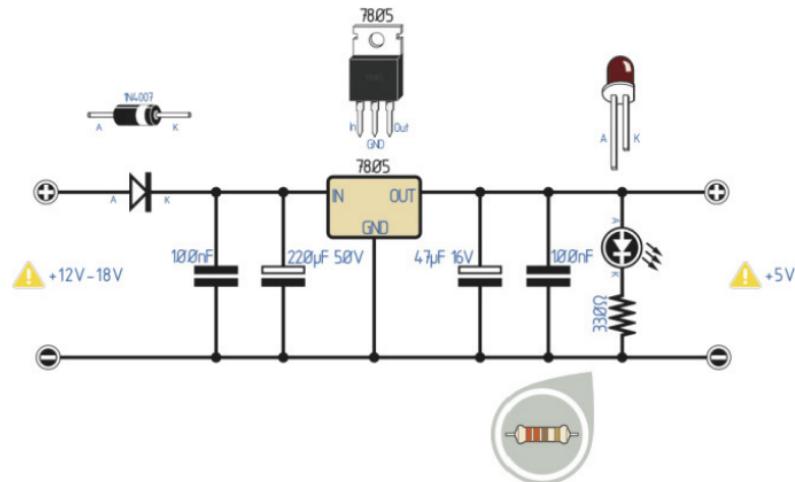


2.111 115



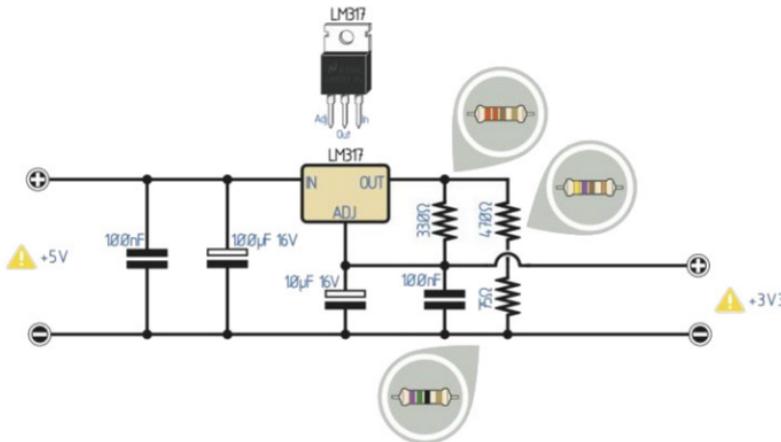
2.112 116

Simple 5V Power Supply



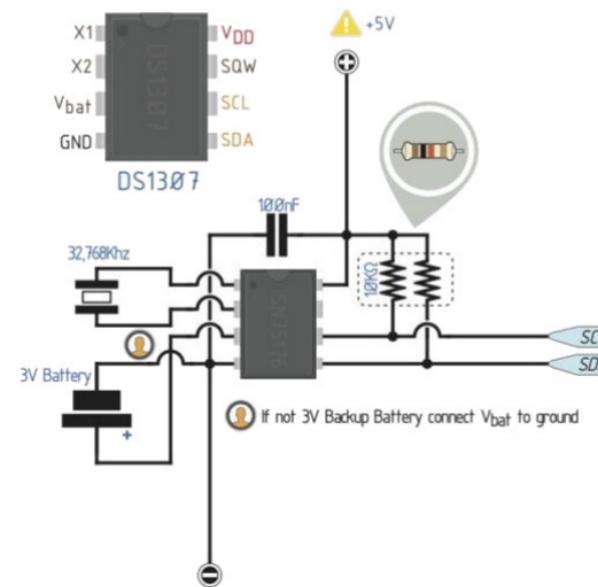
2.113 117

Simple 3V3 Power Supply

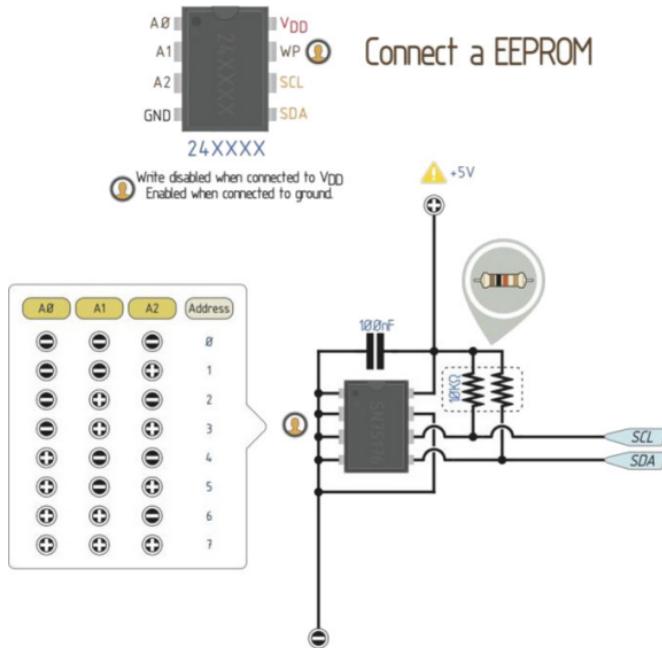


2.114 118

Connect a RTC

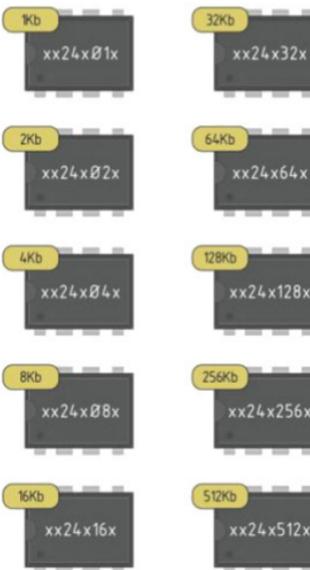


2.115 119



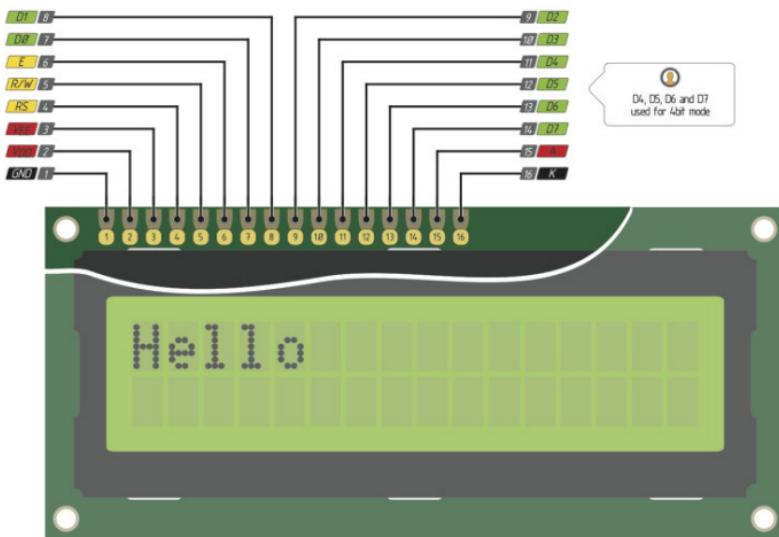
2.116 120

EEPROM Wiki



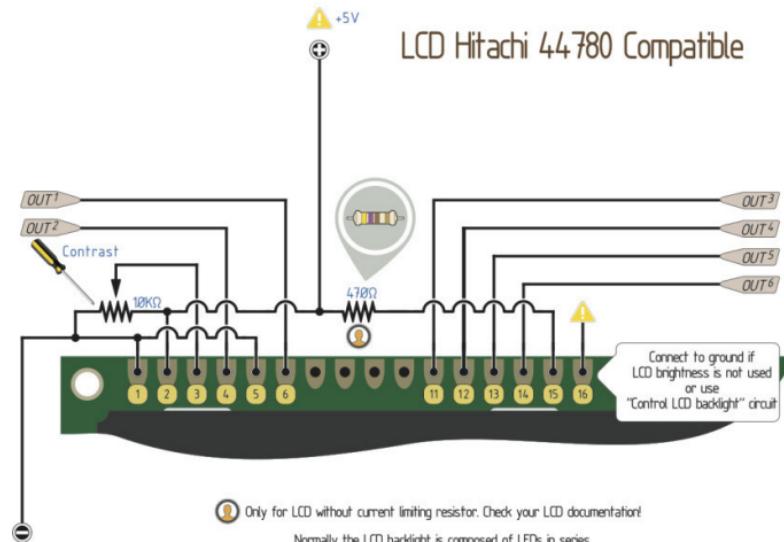
2.117 121

Hitachi 44780 Compatible pinout



2.118 122

LCD Hitachi 44780 Compatible

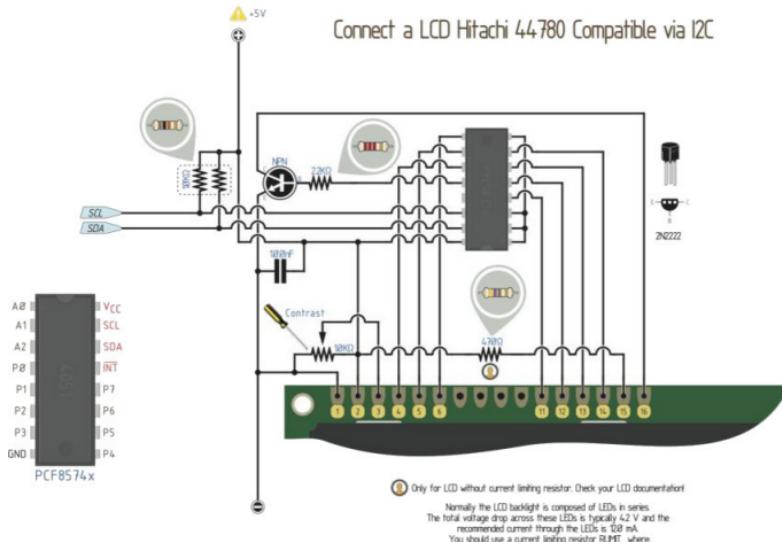


Only for LCD without current limiting resistor. Check your LCD documentation!

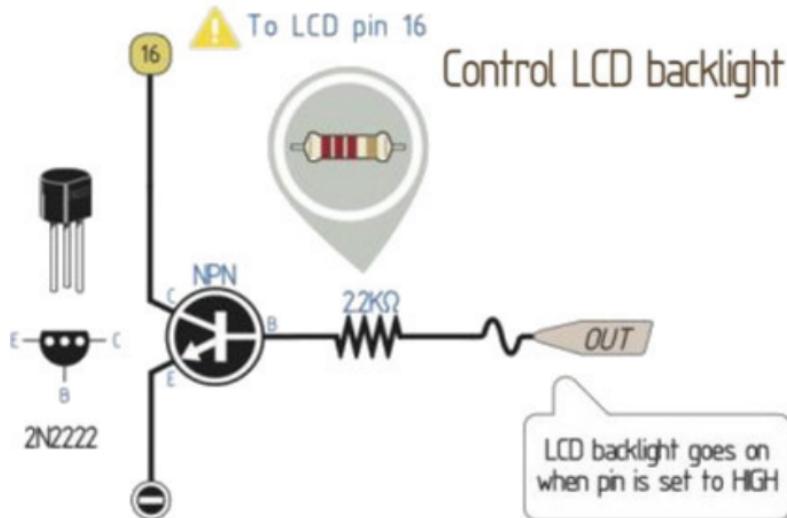
Normally the LCD backlight is composed of LEDs in series.
The total voltage drop across these LEDs is typically 4.2 V and the
recommended current through the LEDs is 120 mA.
You should use a current limiting resistor R_{LIMIT} where:

$$R_{LIMIT} = \frac{V_{BACKLIGHT} - 4.2}{0.12A}$$

2.119 123

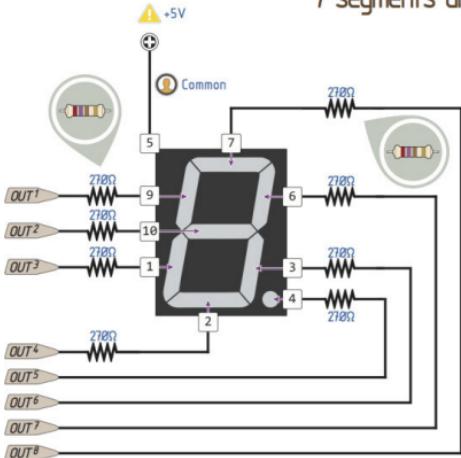


2.120 124



2.121 125

7 segments display



2.122 126

Connect a Nokia LCD

