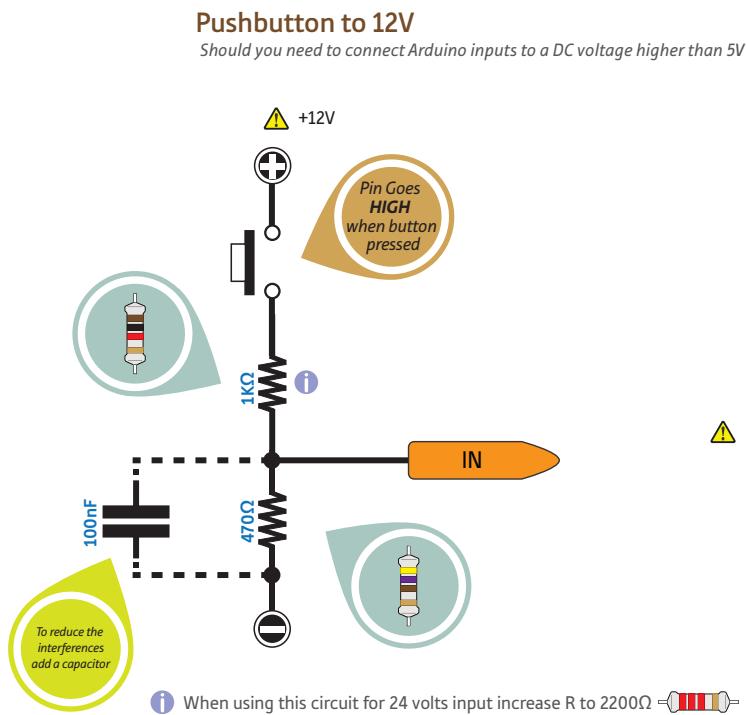
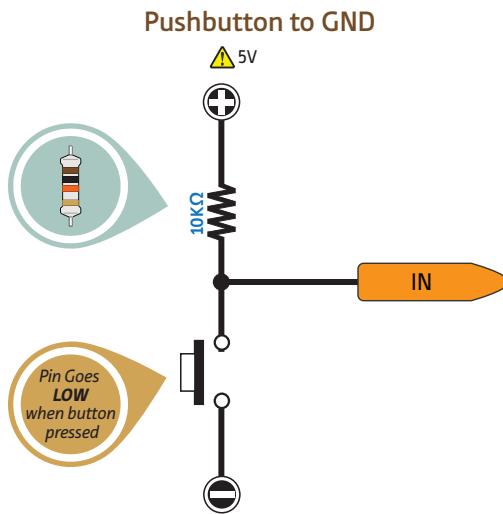


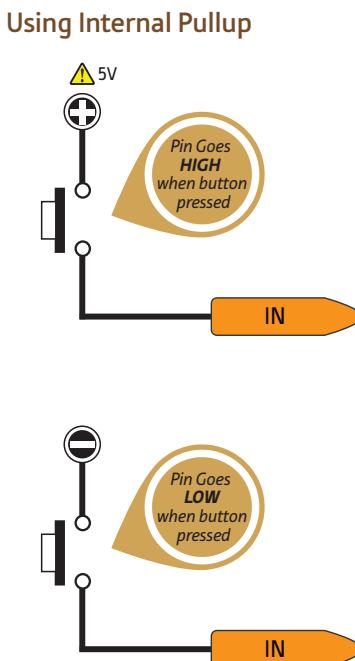
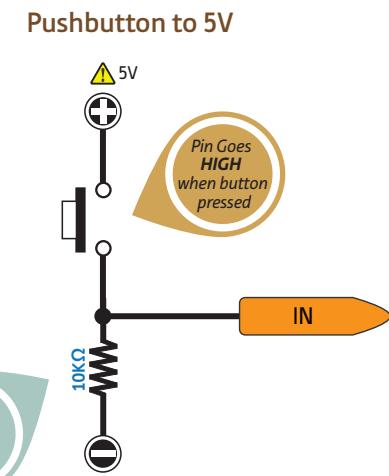
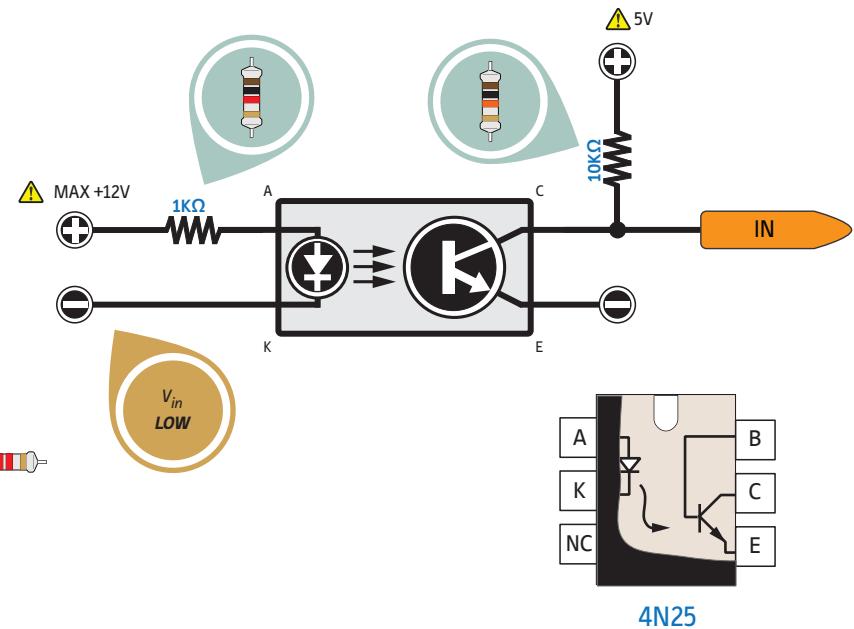
# abc

ARDUINO BASIC CONNECTIONS

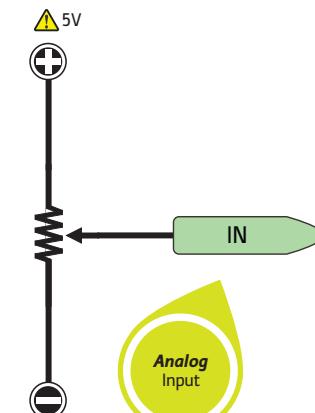




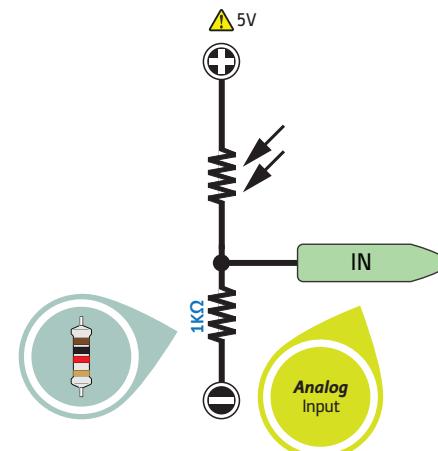
**Optocoupled inputs**  
Used when galvanic separation between external circuitry and Arduino circuit is required

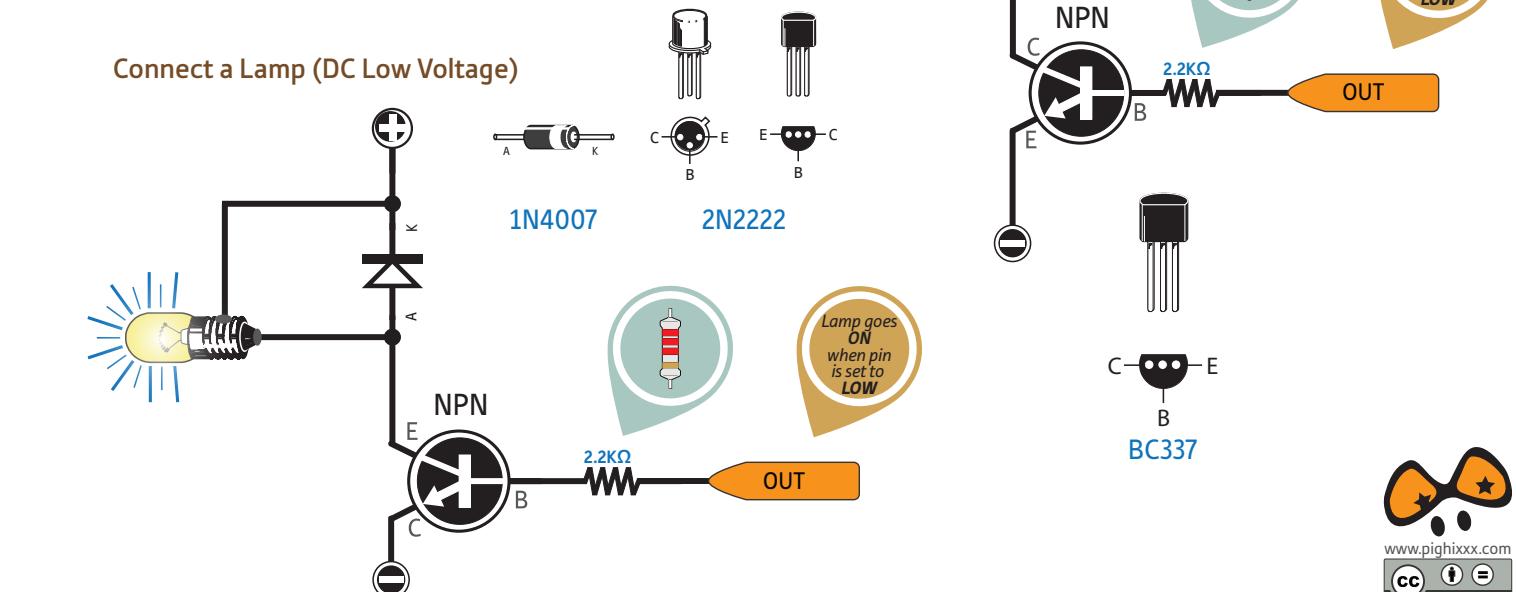
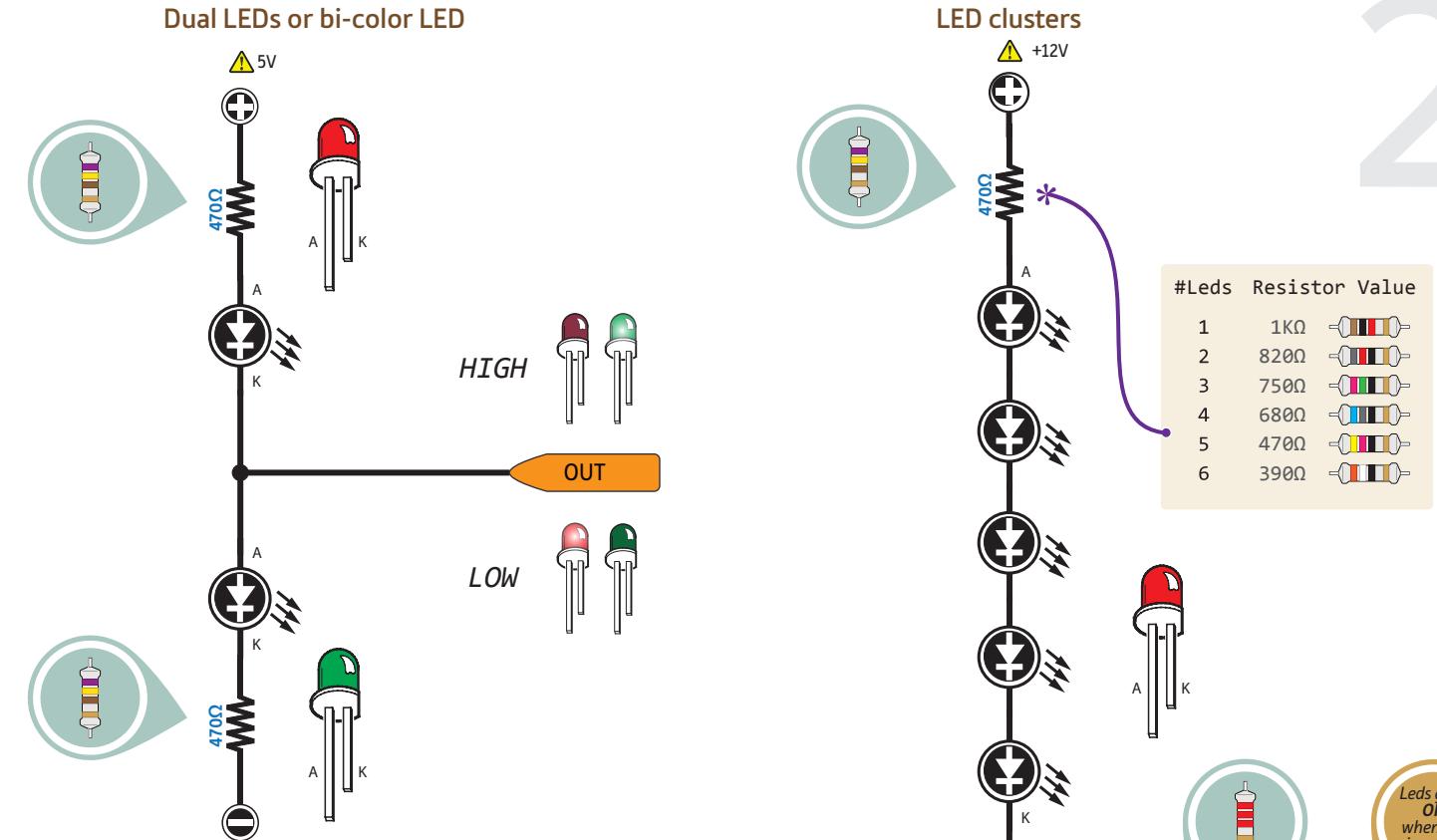
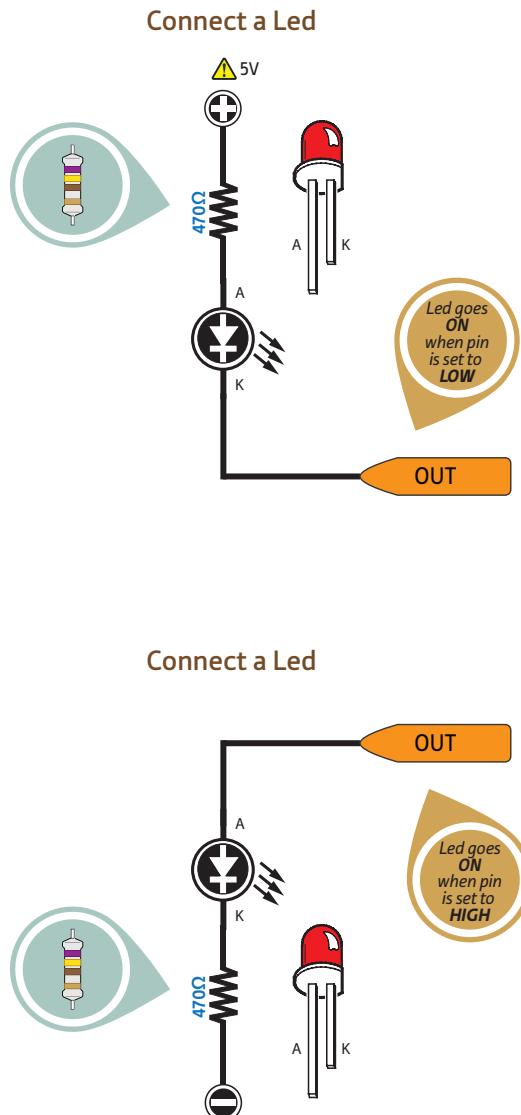


### Trimmer or Potentiometer

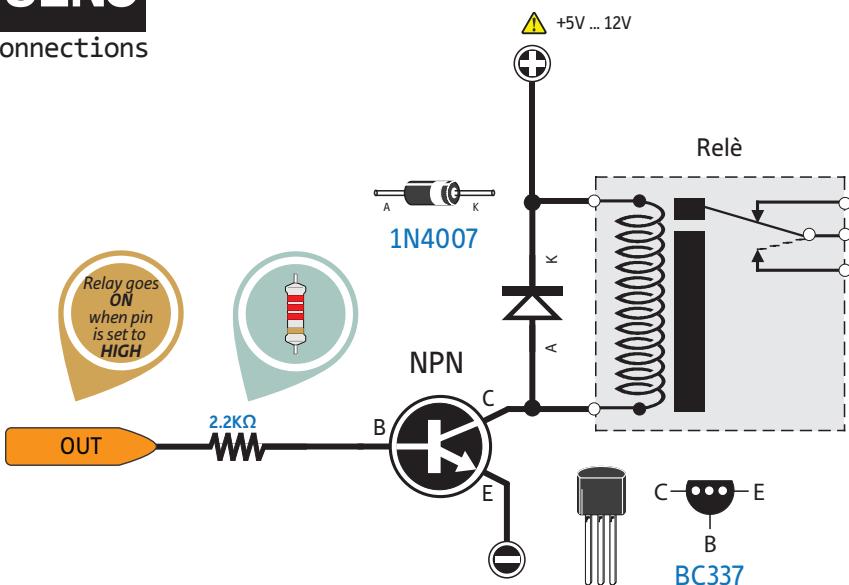


### Photoresistor





## Connect a Relay



Relay goes ON when pin is set to HIGH

+5V ... 12V

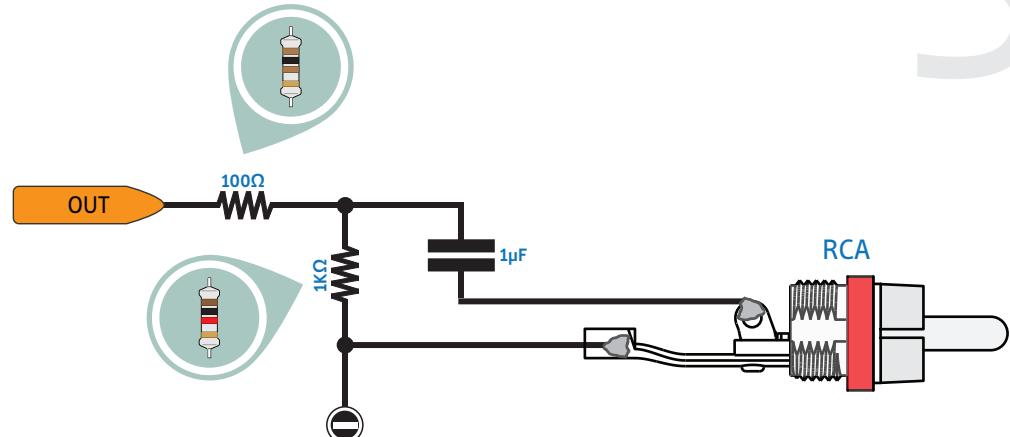
1N4007

NPN

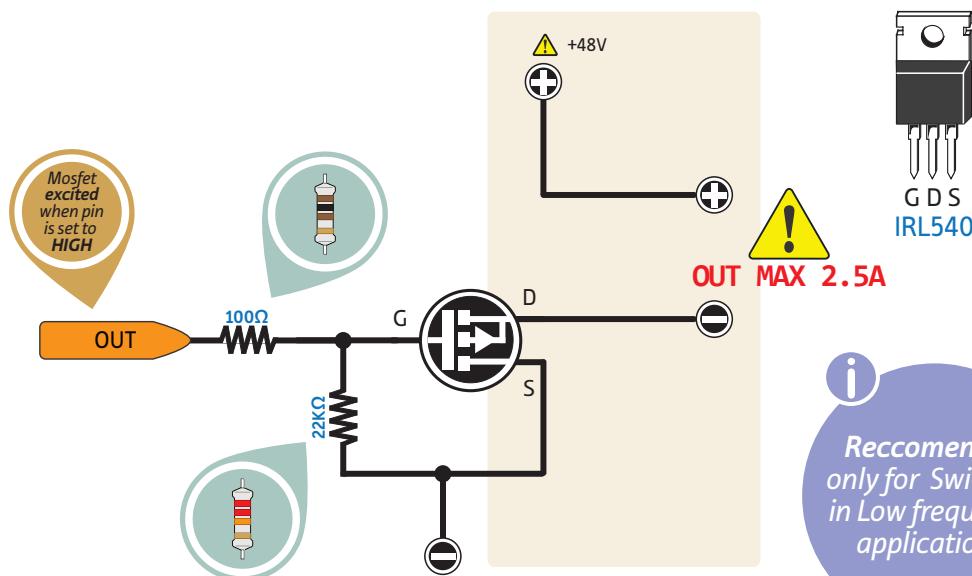
Relè

BC337

## Connect an Audio Amplifier



## Connect a Mosfet

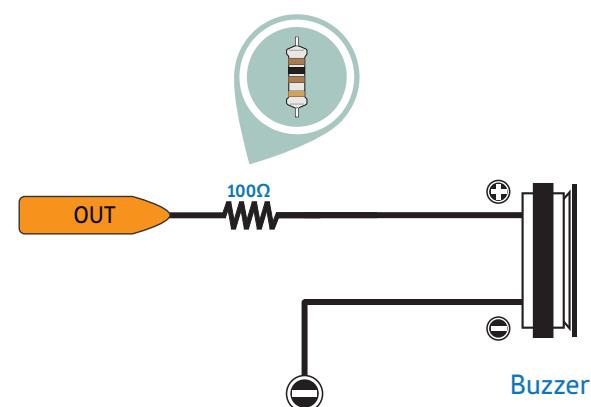


Mosfet excited when pin is set to HIGH

OUT MAX 2.5A

i  
Reccomended only for Switch or in Low frequency applications.

## Connect a Buzzer



Buzzer



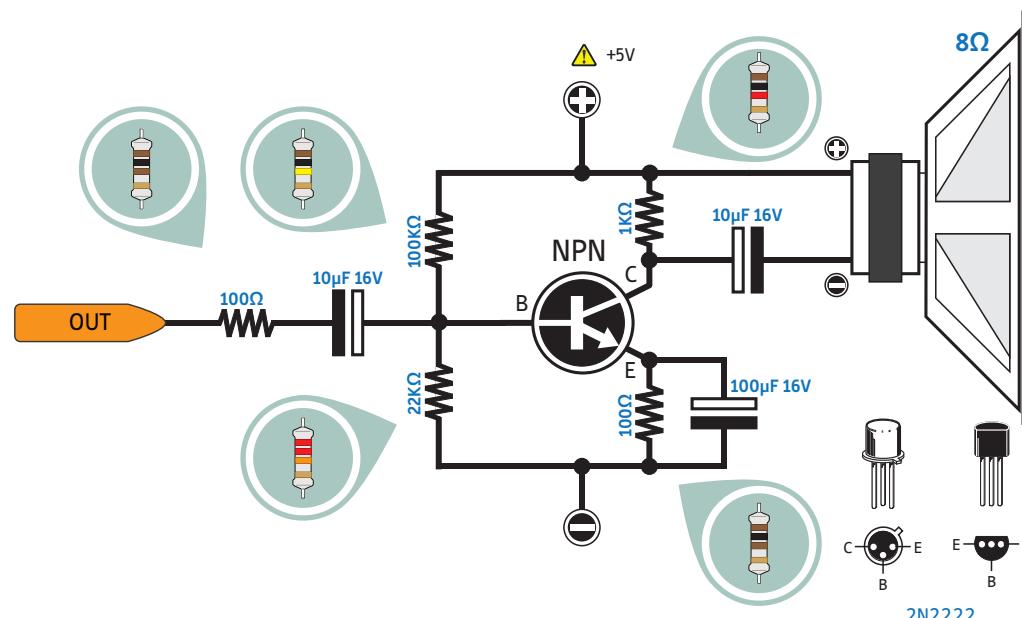
www.pighixxx.com



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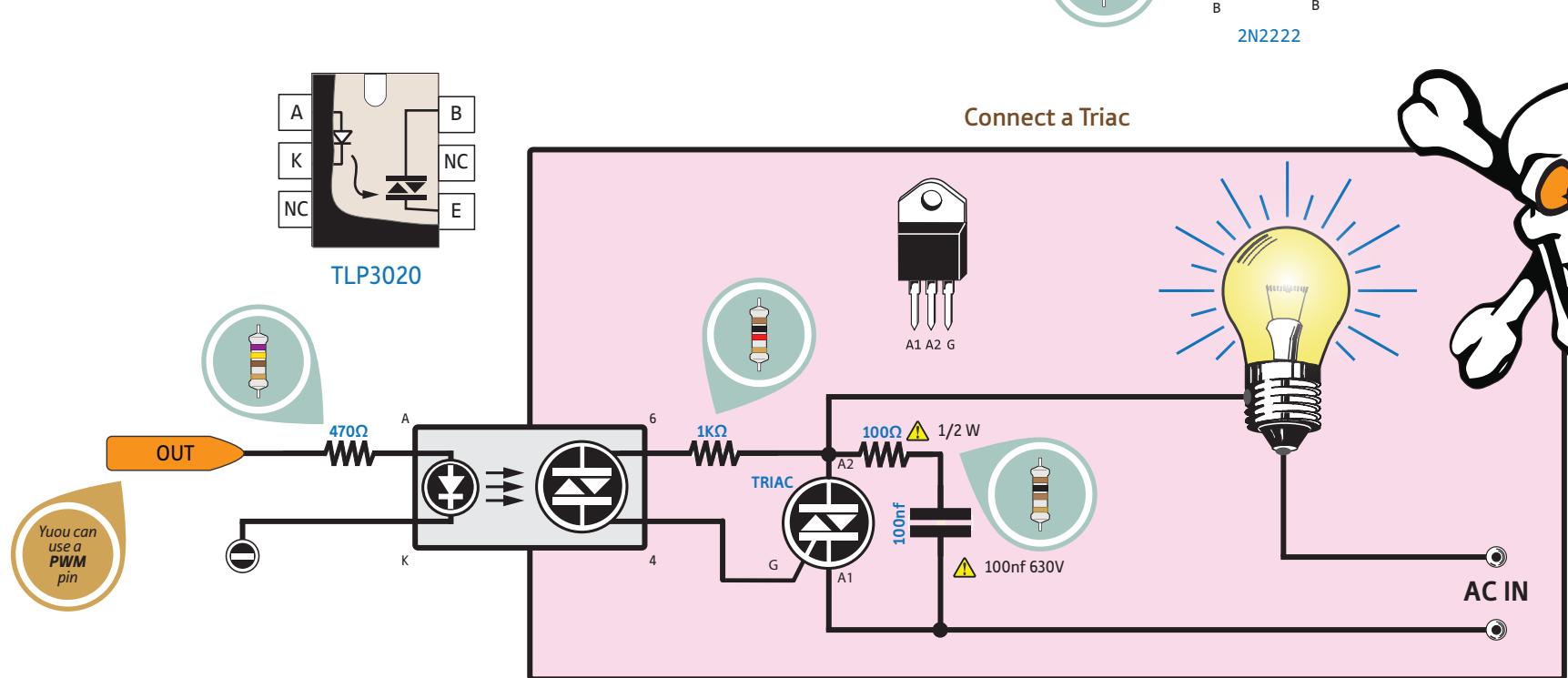
ver 1 rev 0

### Connect a Speaker



2N2222

### Connect a Triac

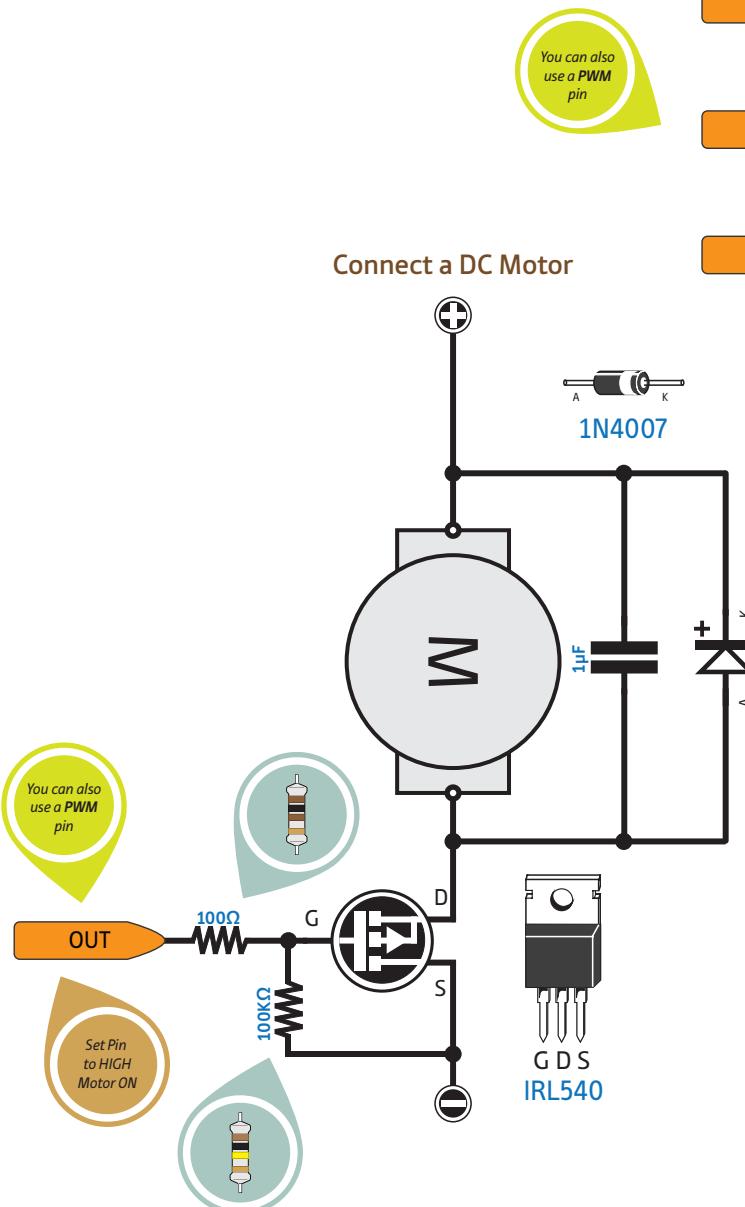


www.pighixxx.com

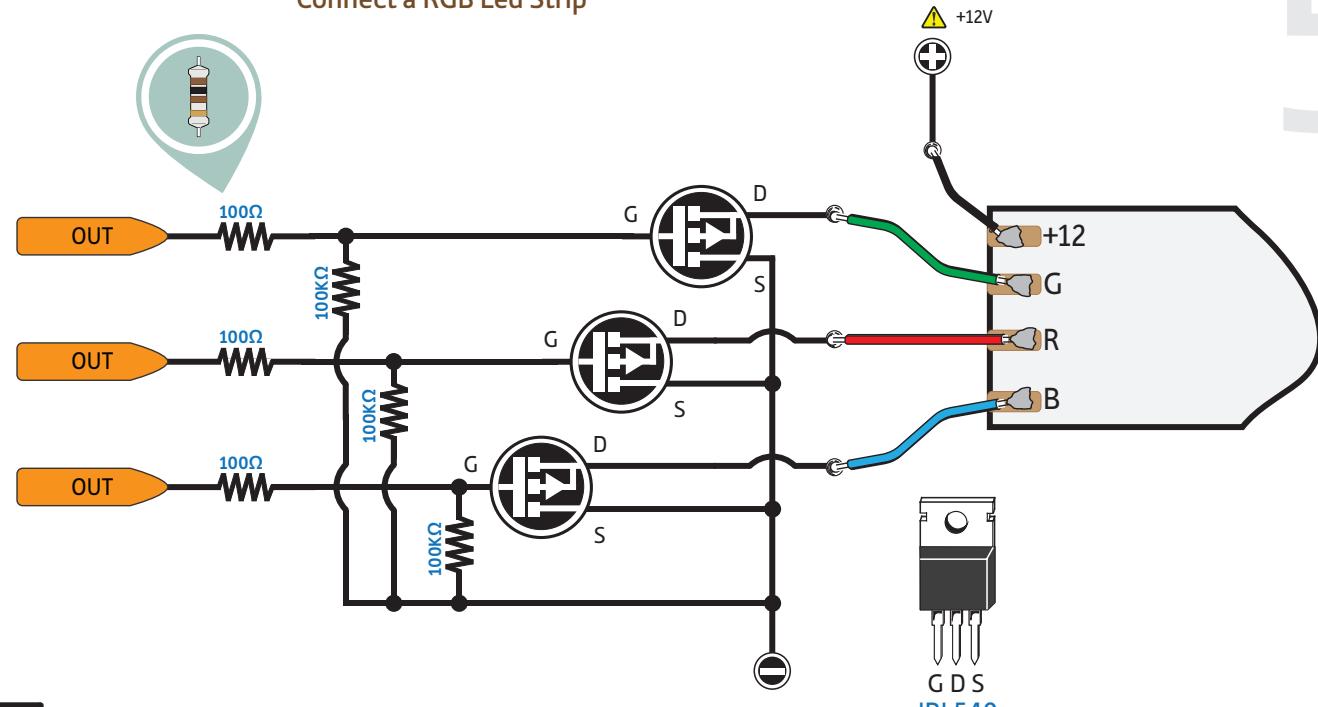


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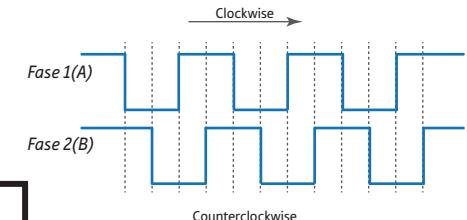
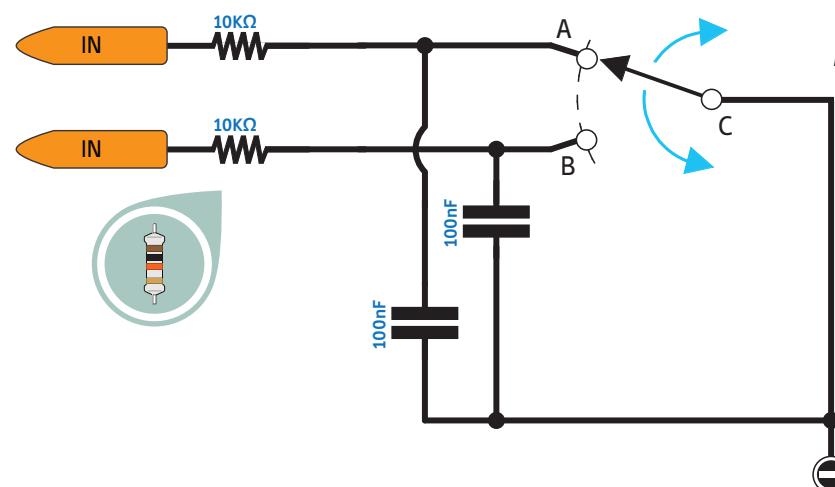
ver 1 rev 0



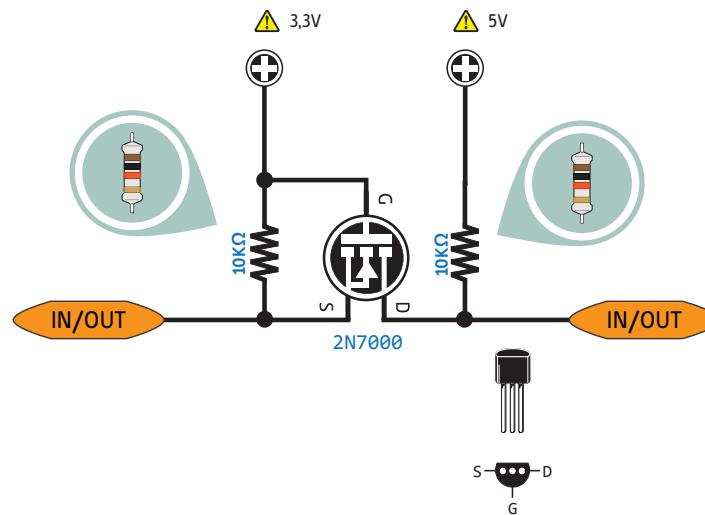
### Connect a RGB Led Strip



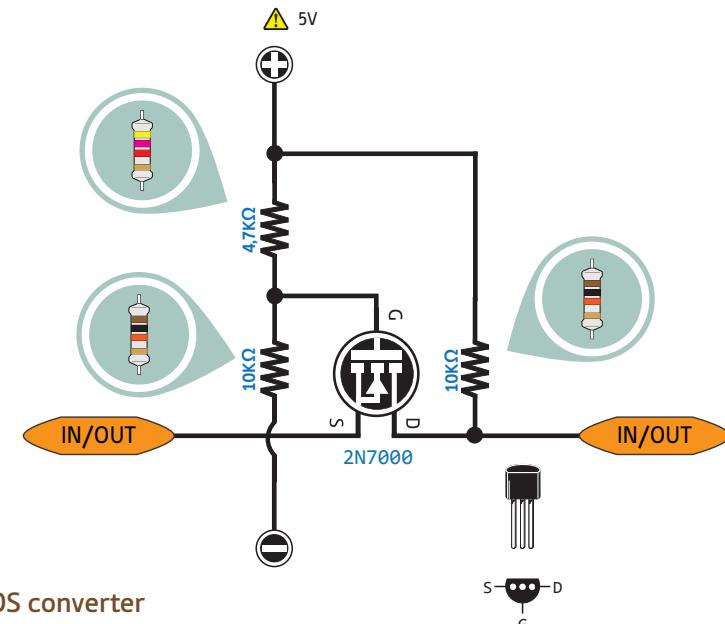
### Connect an Encoder



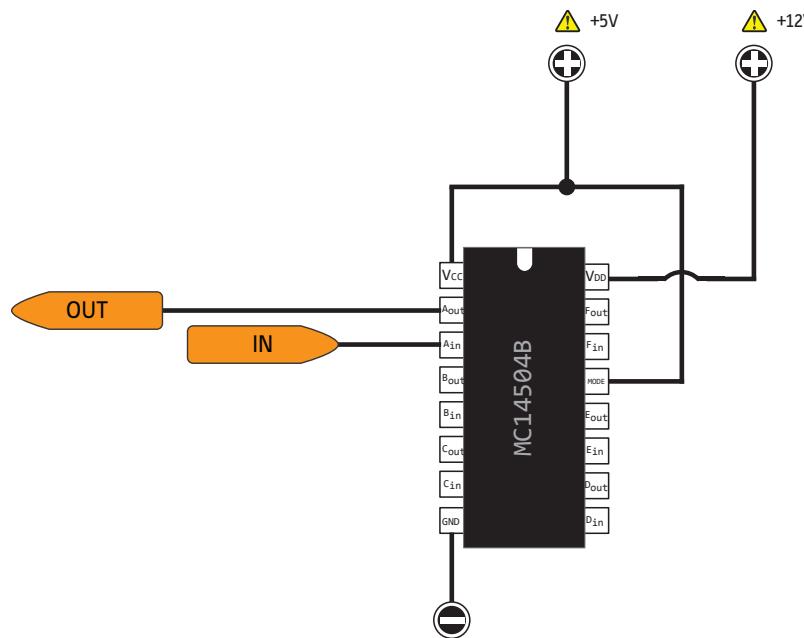
Bi-Directional Voltage Level Converter 3.3V to 5V



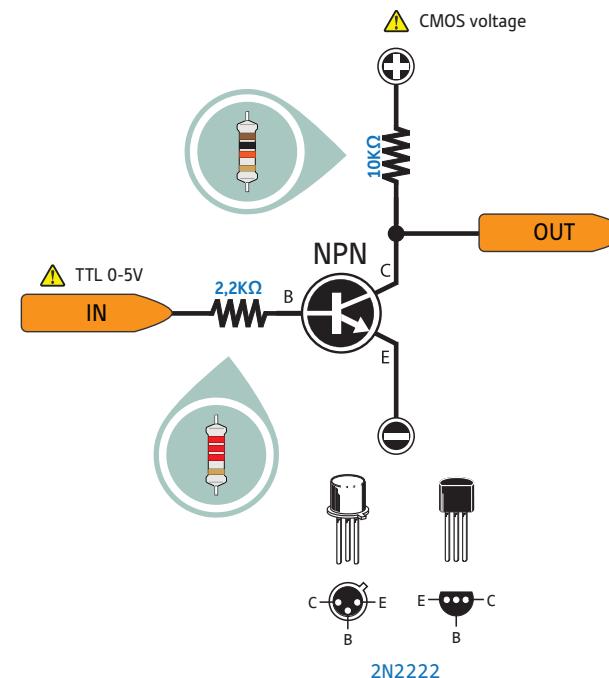
Bi-Directional Voltage Level Converter 3.3V to 5V  
with voltage divider



TTL / CMOS converter (6 inputs/outputs)



TTL / CMOS converter



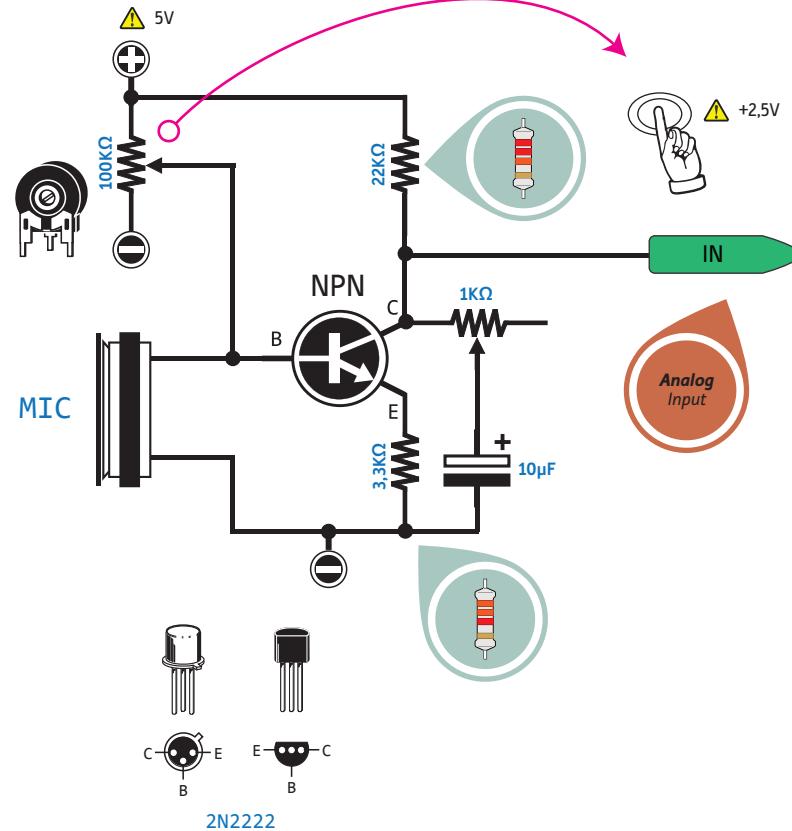
www.pighixxx.com



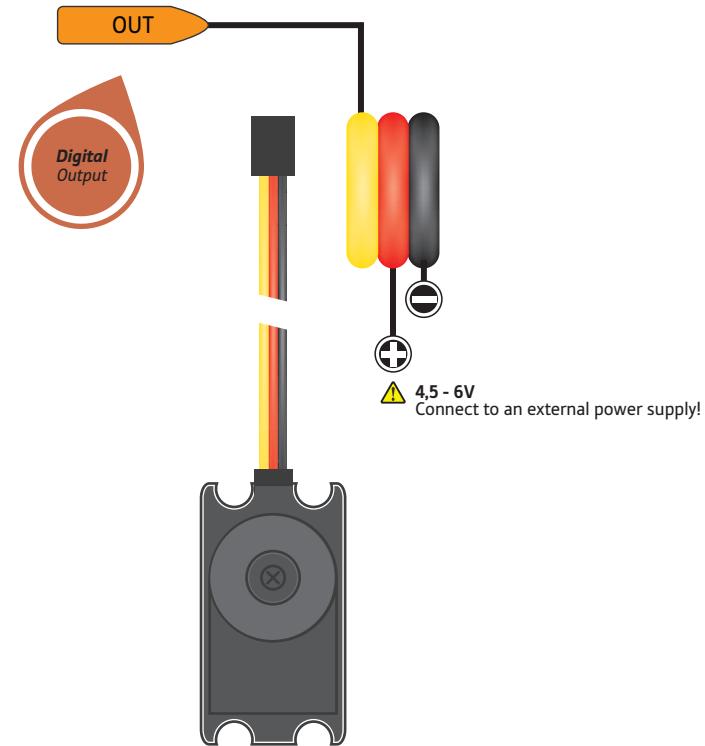
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### Connect a Microphone



### Connect a Servo



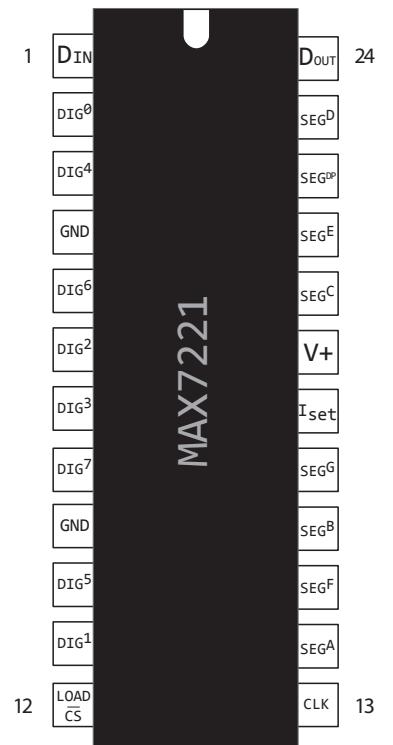
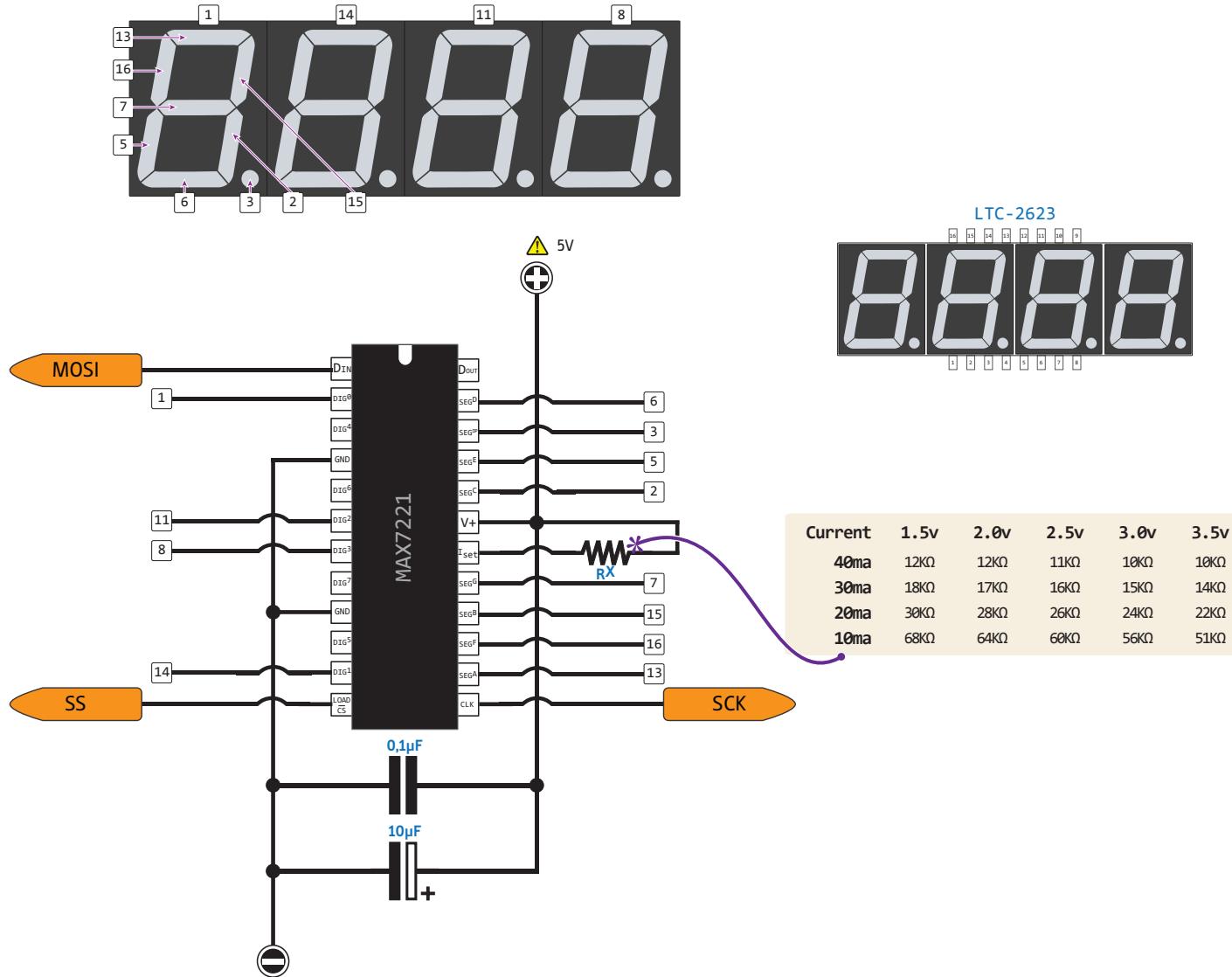
[www.pighixxx.com](http://www.pighixxx.com)



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ver 1 rev 0

## 7 Segments Display (Common Anode) with MAX7221



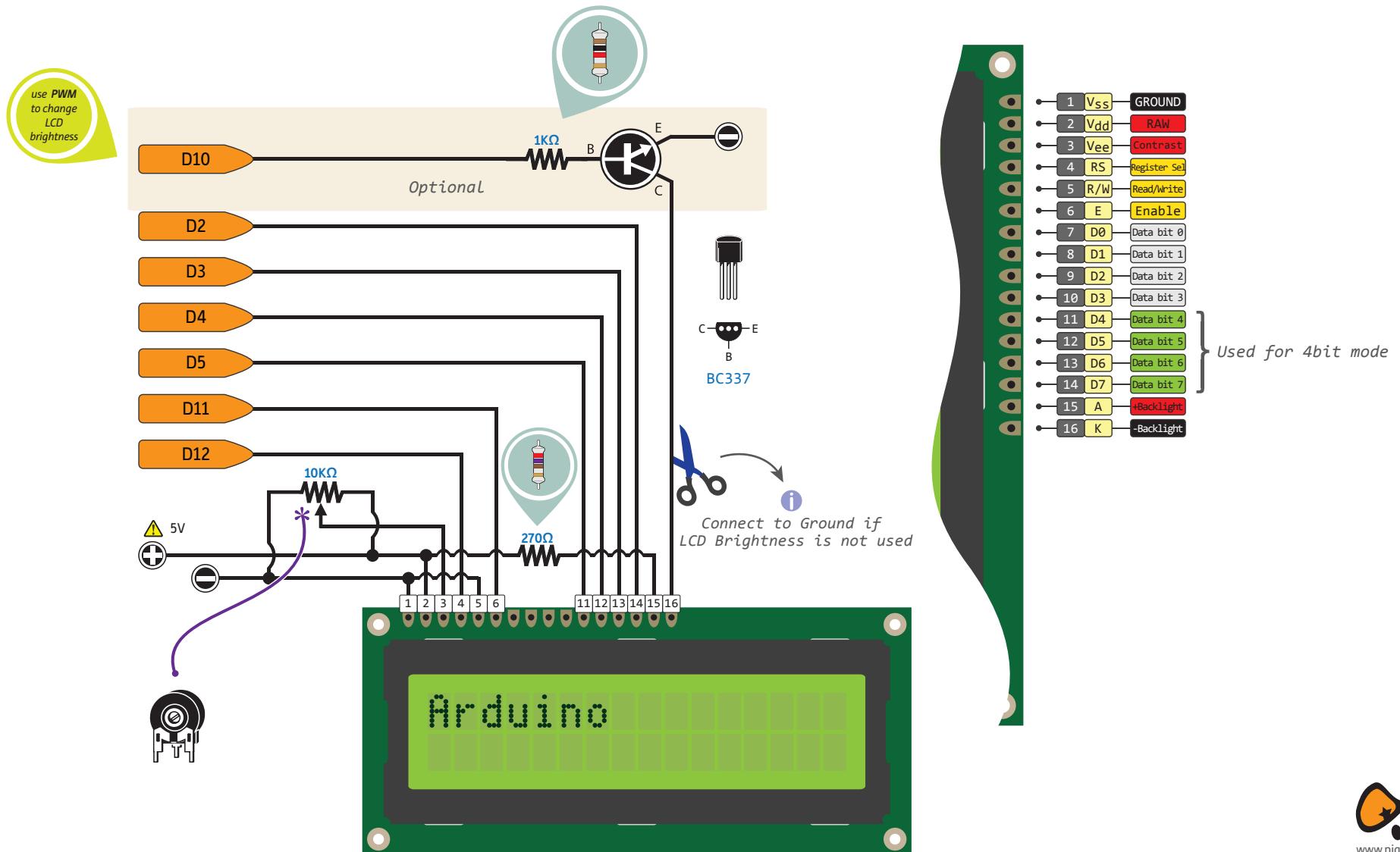
www.pighixxx.com



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## Connect a LCD HITACHI 44780 compatible



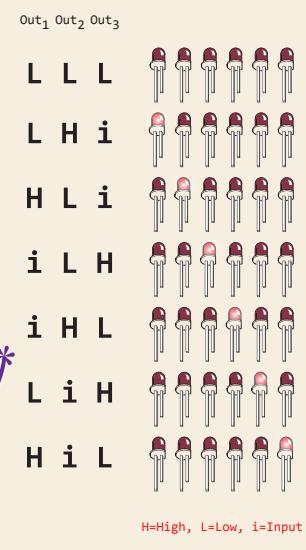
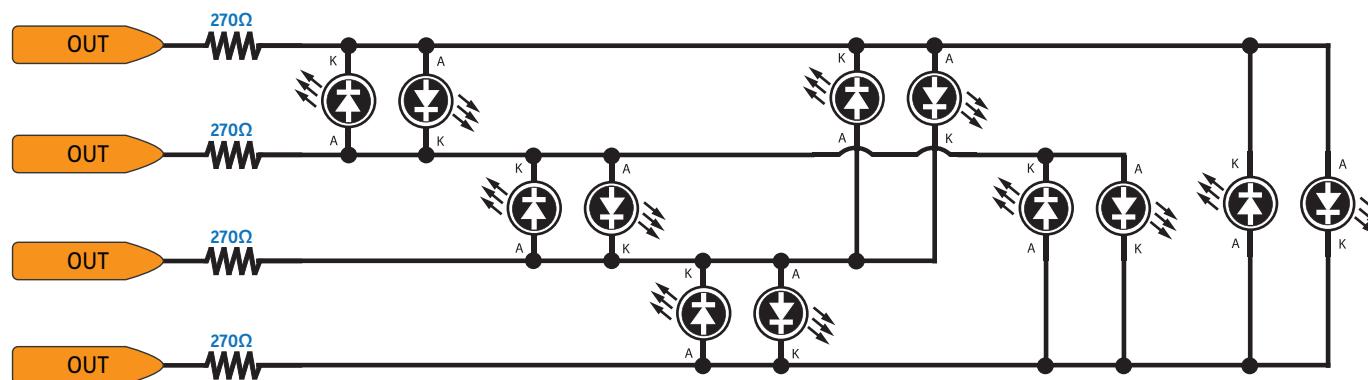
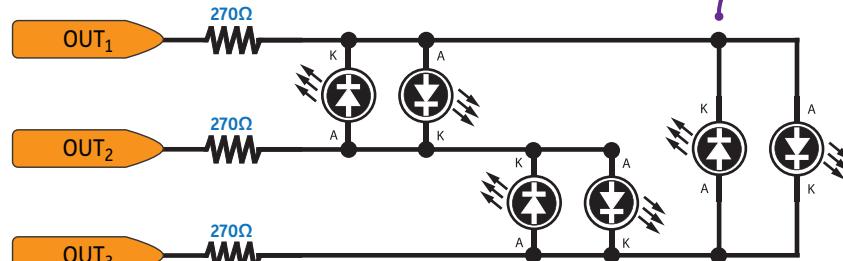
www.pighixxx.com



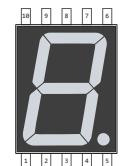
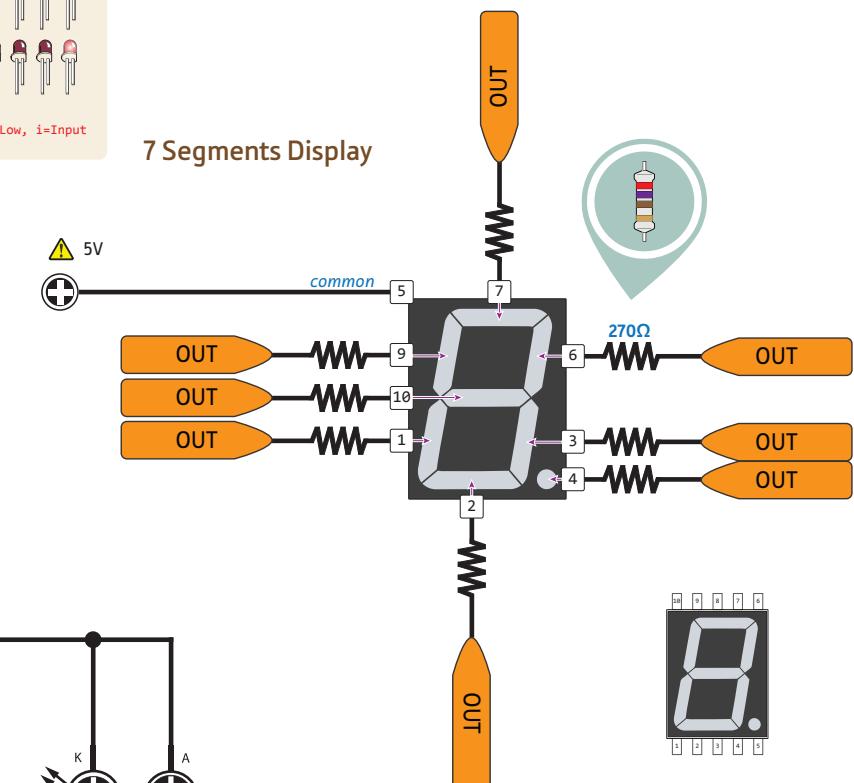
03 APR 2013

ver 1 rev 0

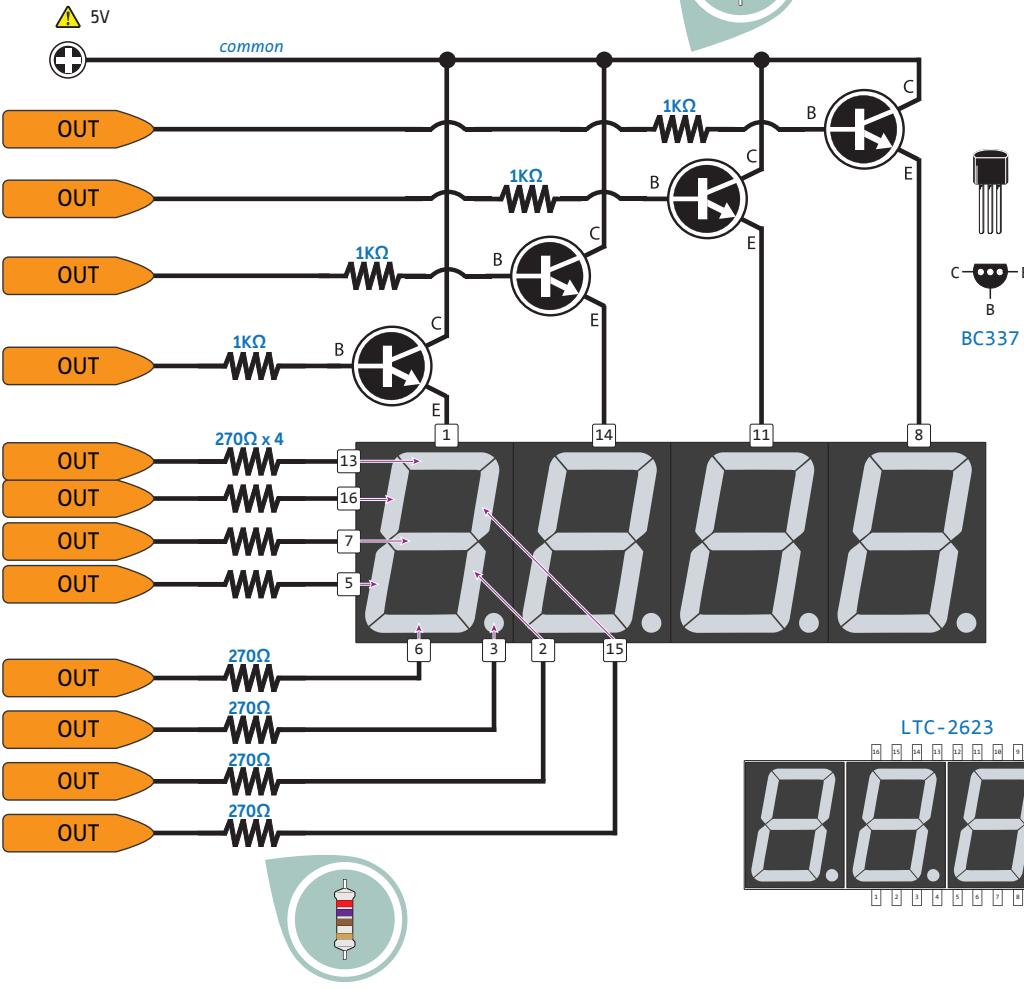
## Charlieplexing



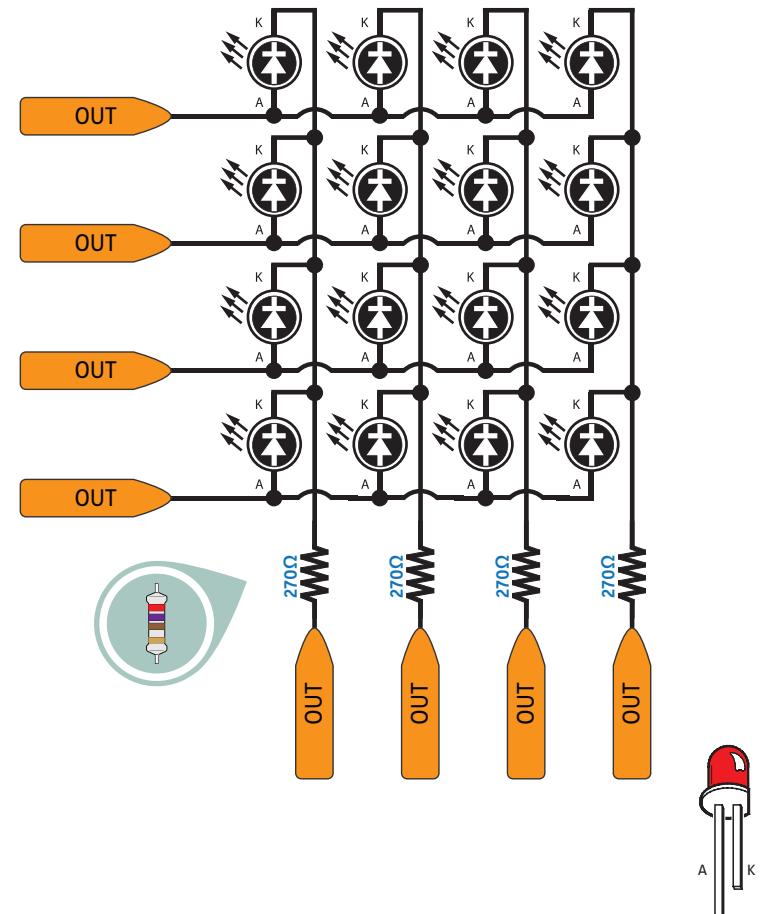
## 7 Segments Display



7 Segments Display (Common Anode) with Multiplexing



LED Array



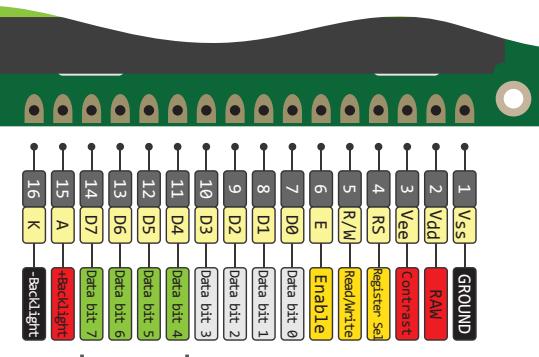
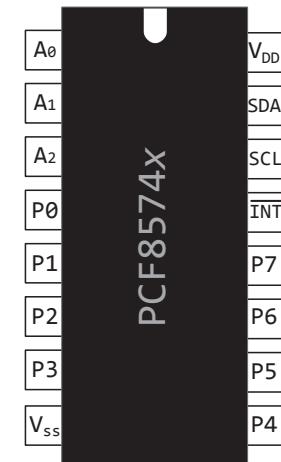
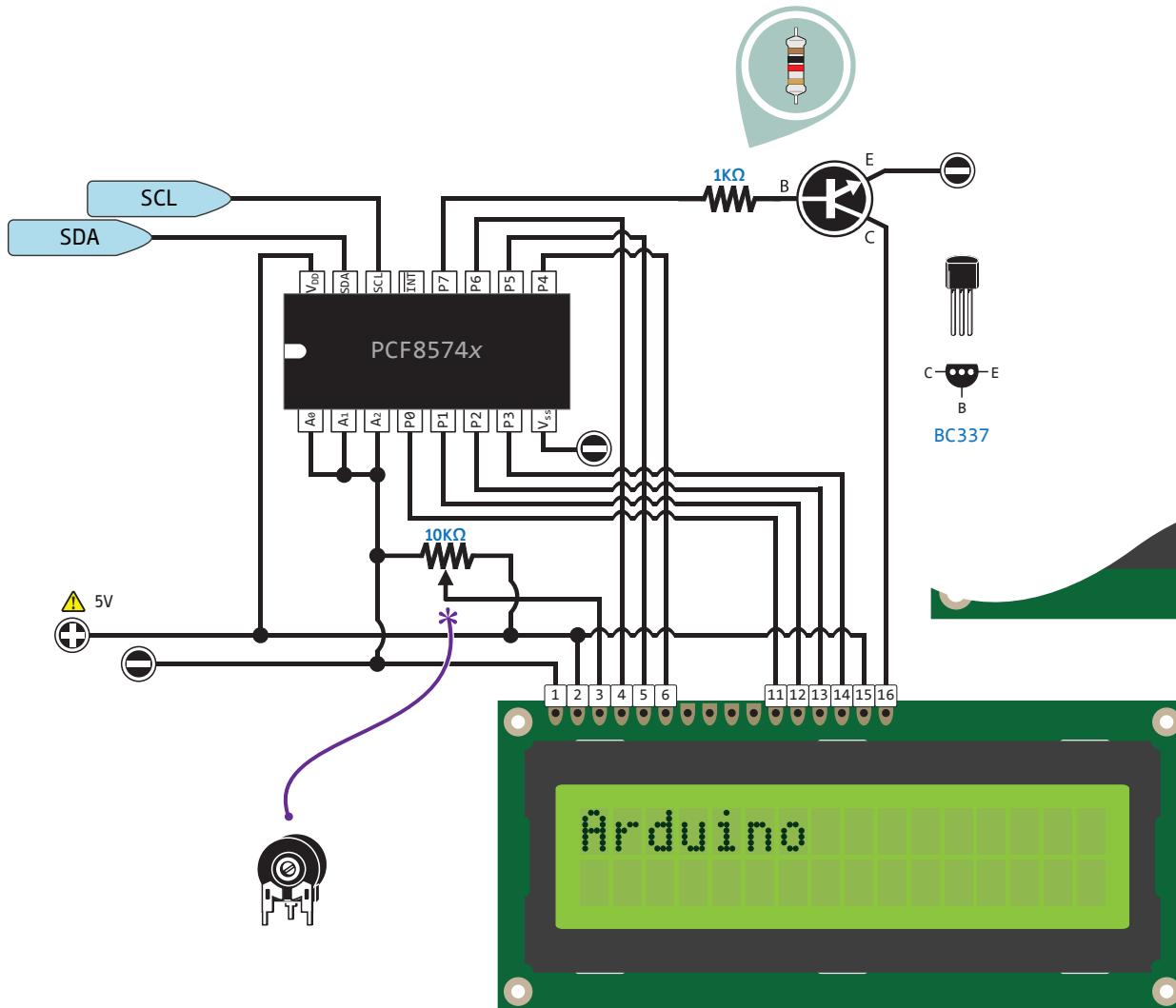
[www.pighixxx.com](http://www.pighixxx.com)



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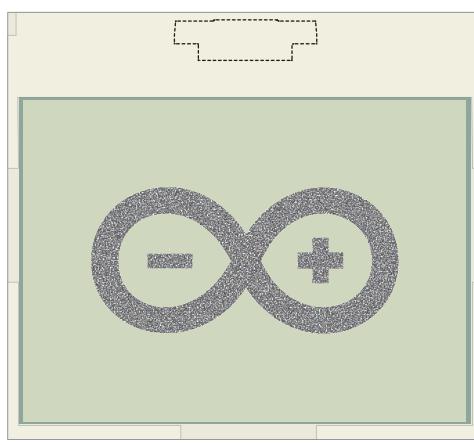
ver 1 rev 0

Connect via I2C a LCD HITACHI 44780 compatible

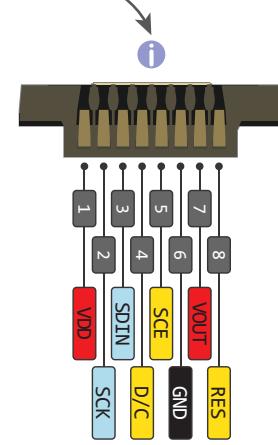


## Connect a NOKIA LCD (Basic)

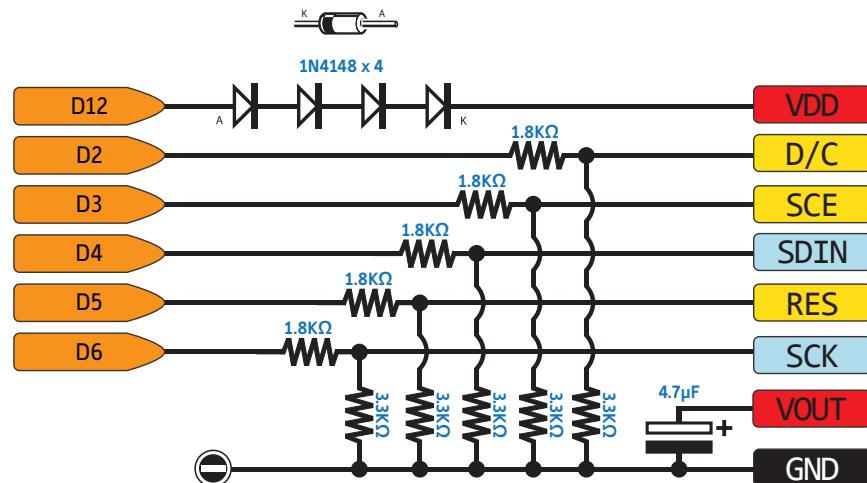
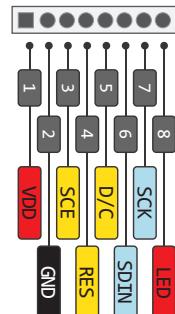
**⚠ Only for 5V Arduino**



NOKIA 3110



NOKIA 5110



3.3K $\Omega$  =



1.8K $\Omega$  =



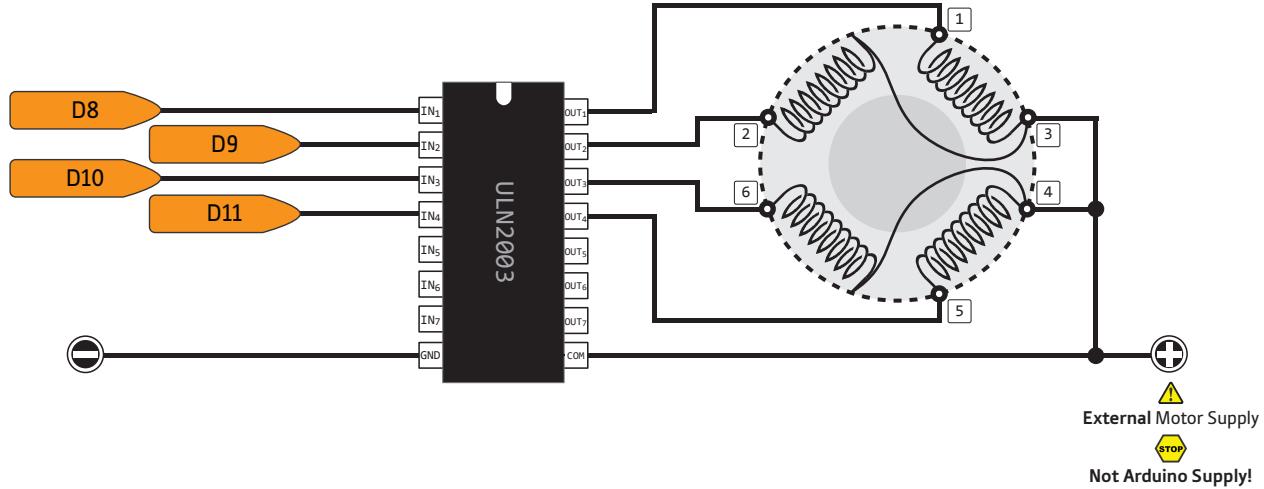
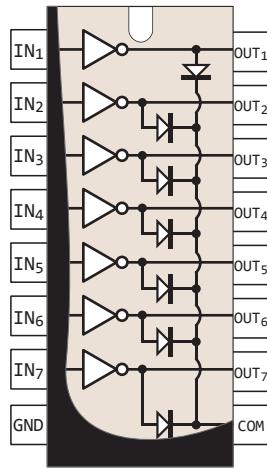
www.pighixxx.com



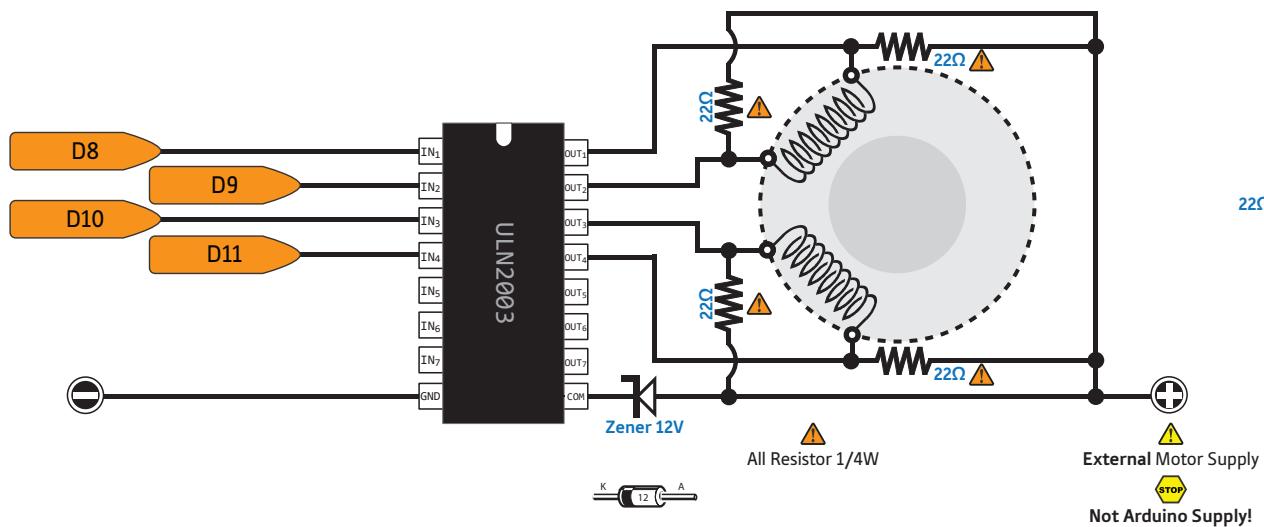
03 APR 2013

ver 1 rev 0

### Drive a Unipolar Stepper (Basic 1)



### Drive a Bipolar Stepper (Basic 1)



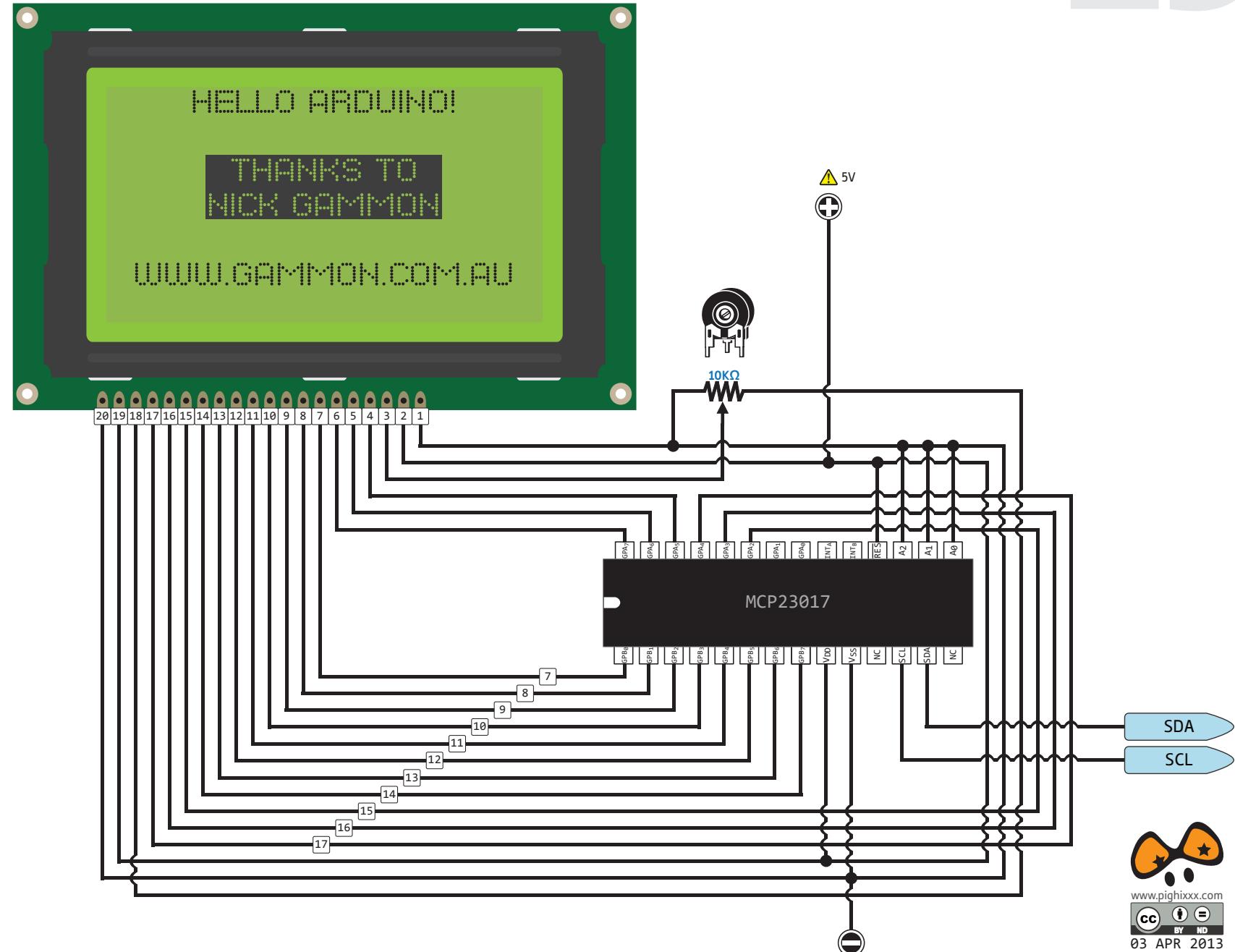
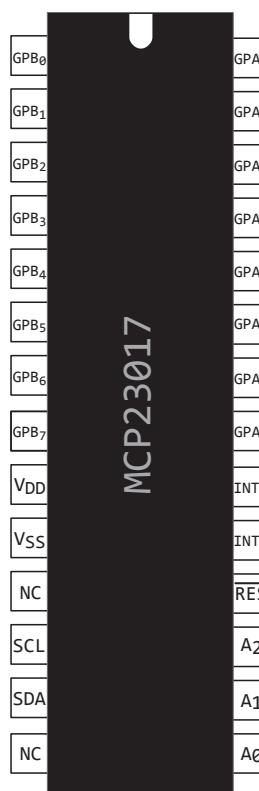
www.pighixxx.com



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Connect a graphical LCD via I<sub>2</sub>C



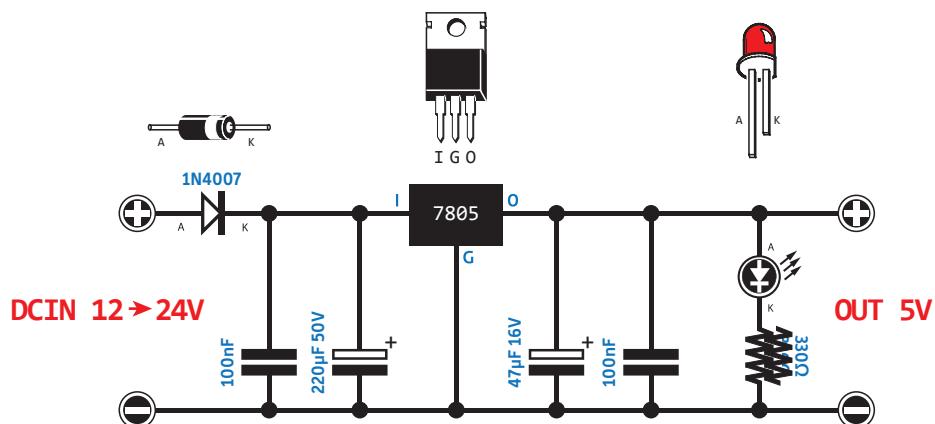
www.pighixxx.com



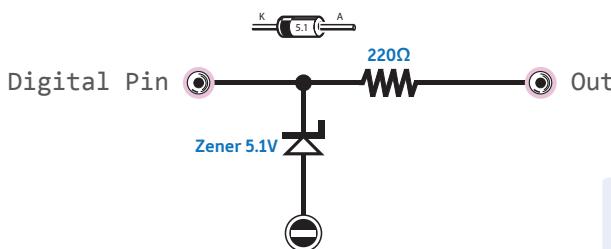
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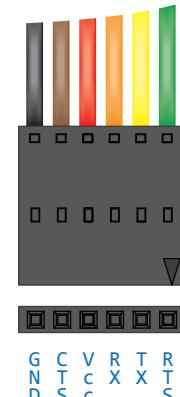
## Simple 5V Power Supply



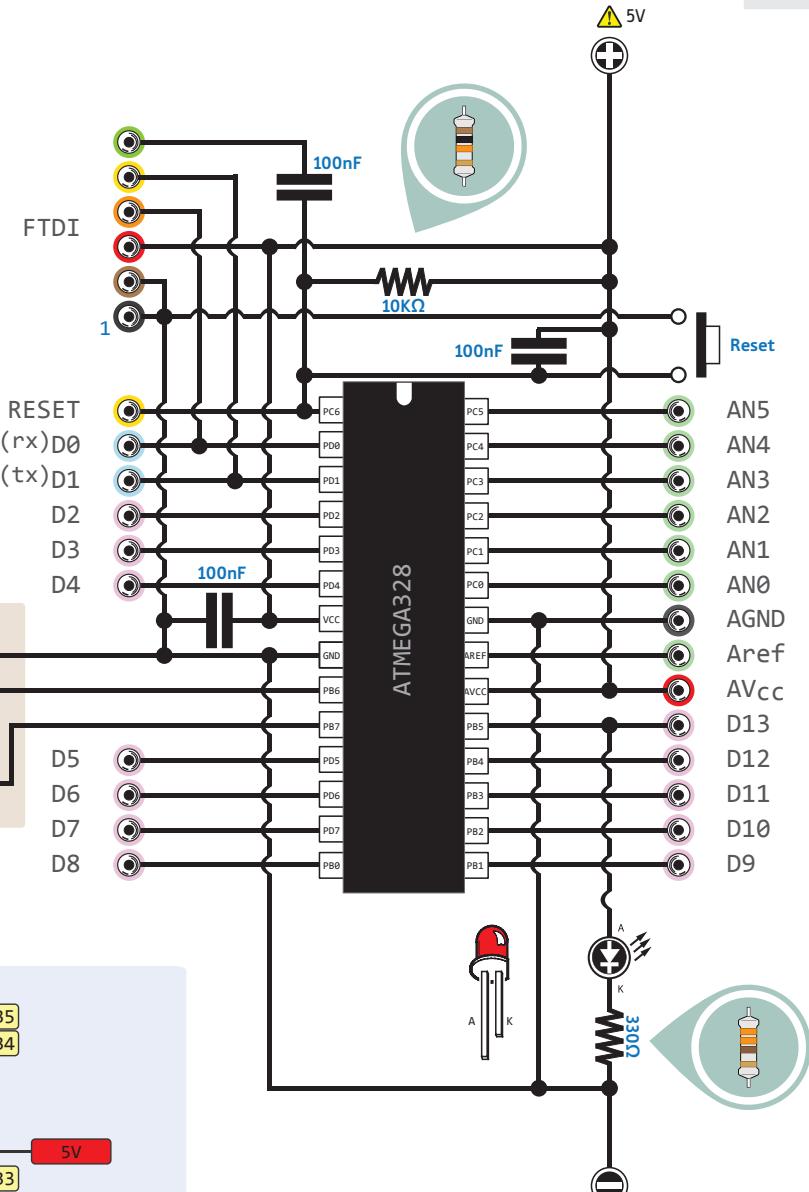
## Protect a I/O Pin



FTDI Connector

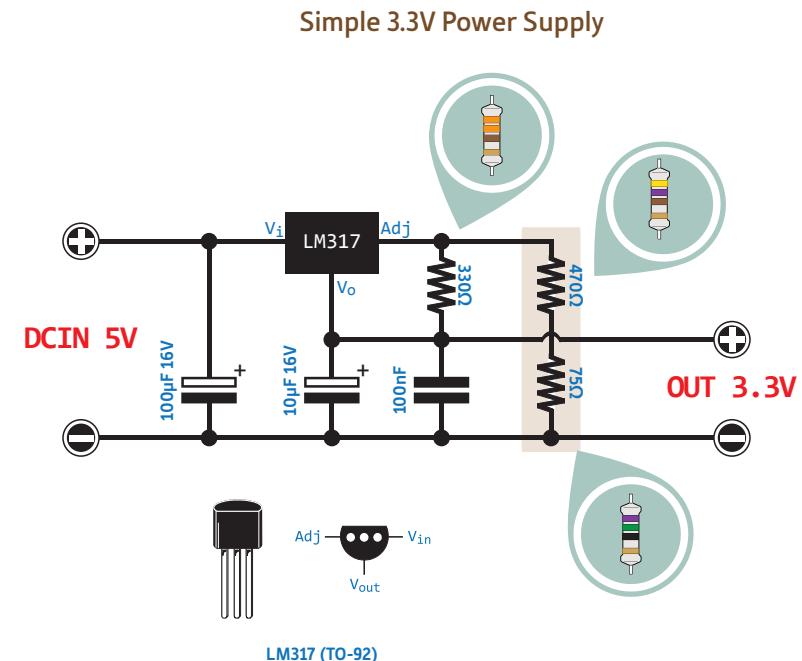
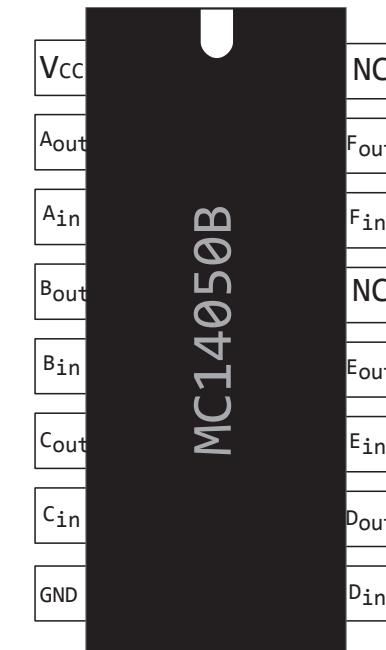
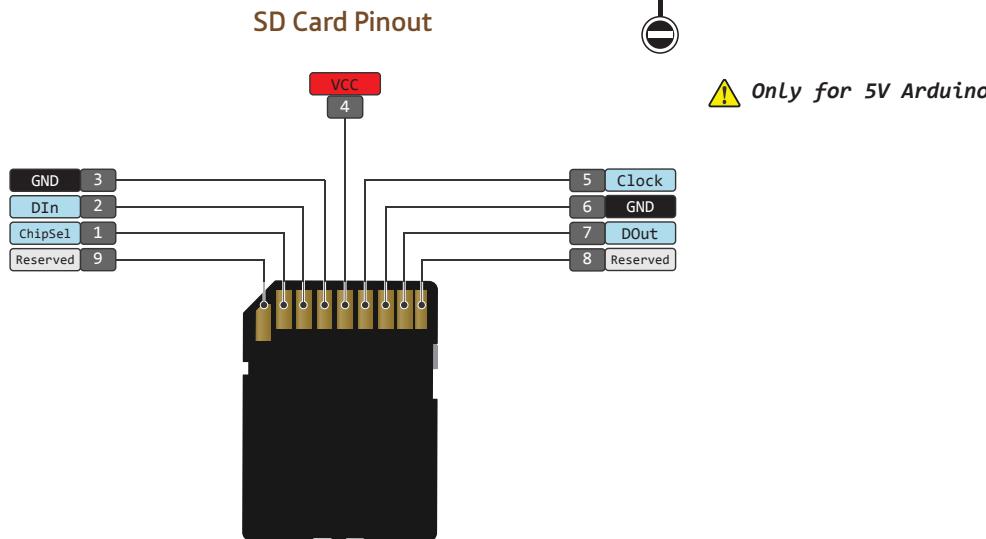
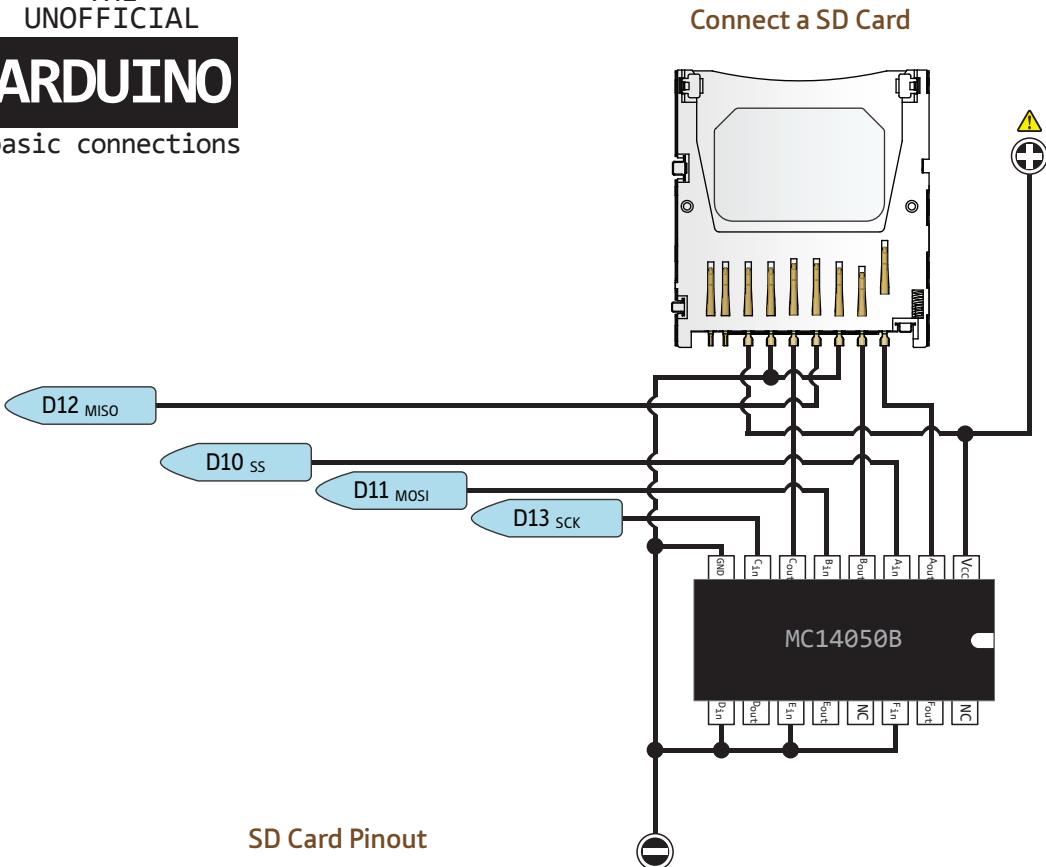


DIY Arduino

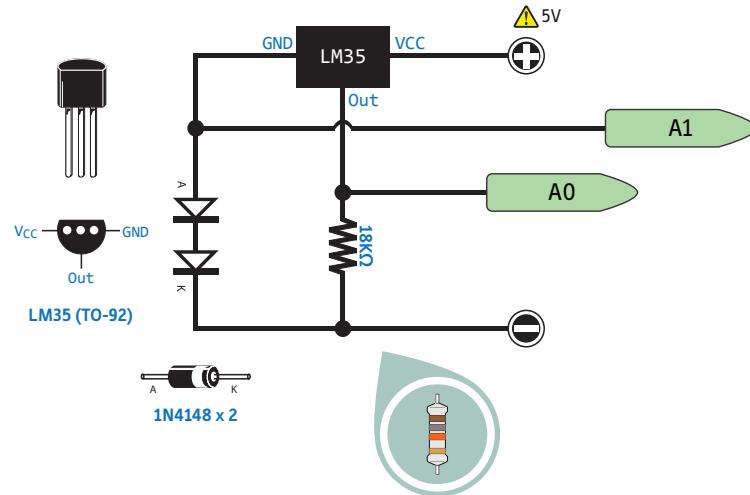


 Recommended ICSP pinout

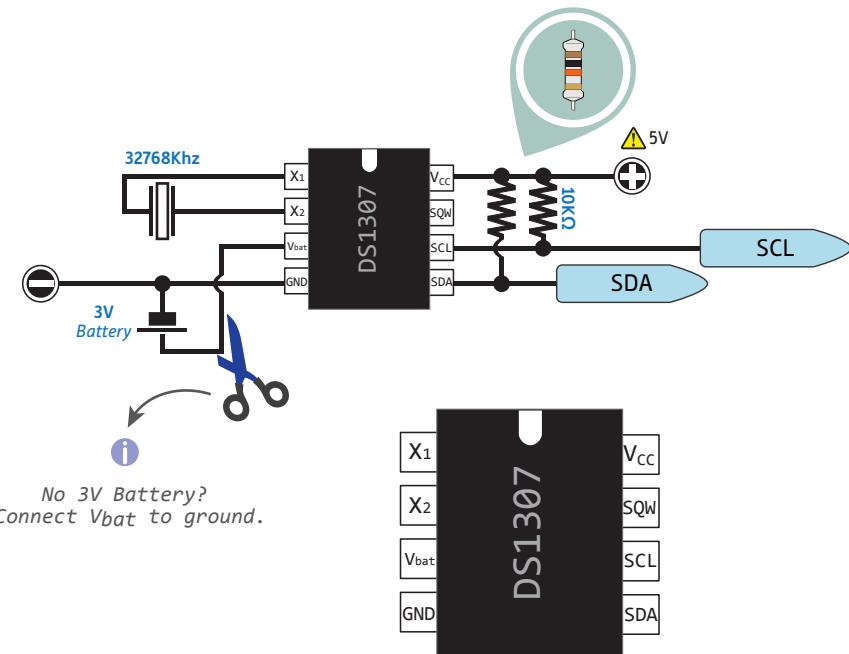




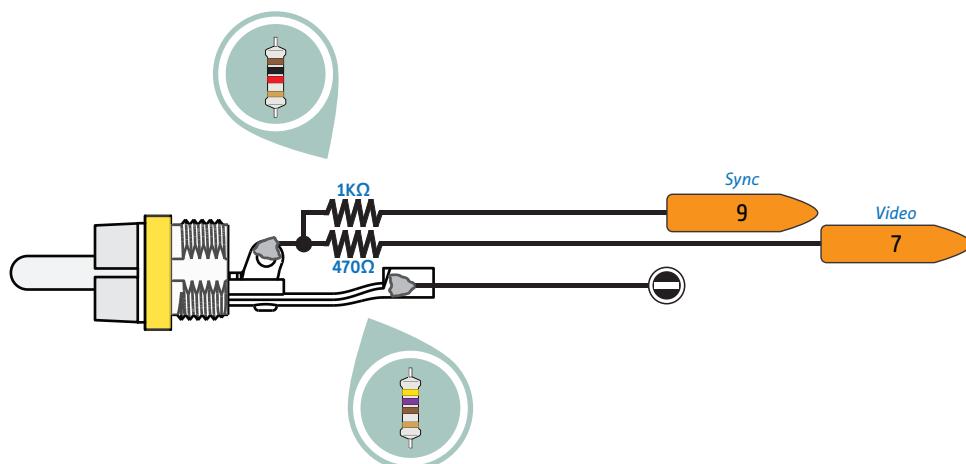
### Connect a Temperature Sensor (LM35)



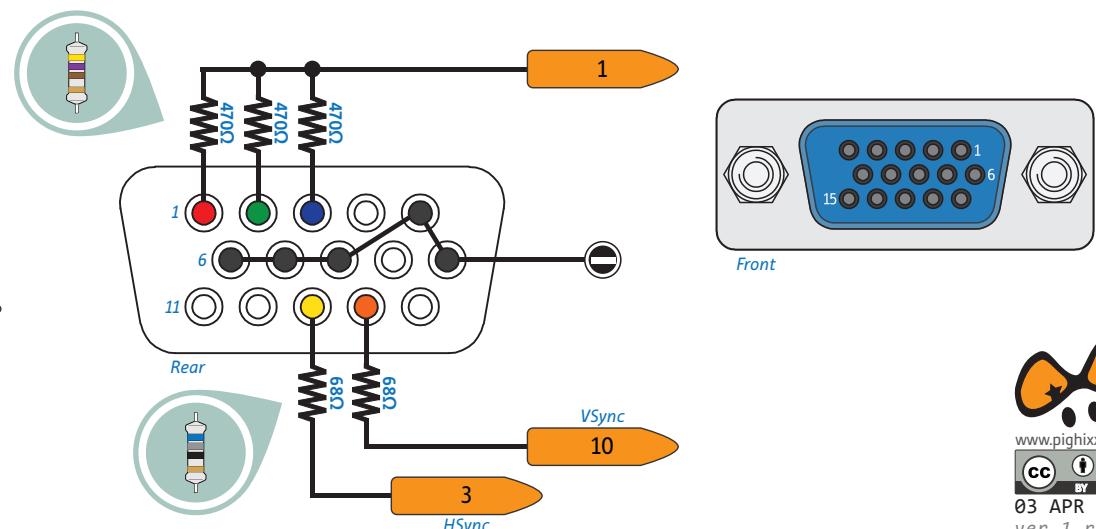
### Connect a RTC (DS1307)



### Connect to Composite Video



### Connect to VGA





## TOLERANCE

GOLD

 $\pm 5\%$ 

SILVER

 $\pm 10\%$ 

BLACK	0	0	$x1\Omega$
BROWN	1	1	$x10\Omega$
RED	2	2	$x100\Omega$
ORANGE	3	3	$x1,000\Omega$
YELLOW	4	4	$x10,000\Omega$
GREEN	5	5	$x100,000\Omega$
BLUE	6	6	$x1,000,000\Omega$
VIOLET	7	7	
GRAY	8	8	
WHITE	9	9	

$$K\Omega = x1,000\Omega$$

$$M\Omega = x1,000,000\Omega$$

MULTIPLIER

