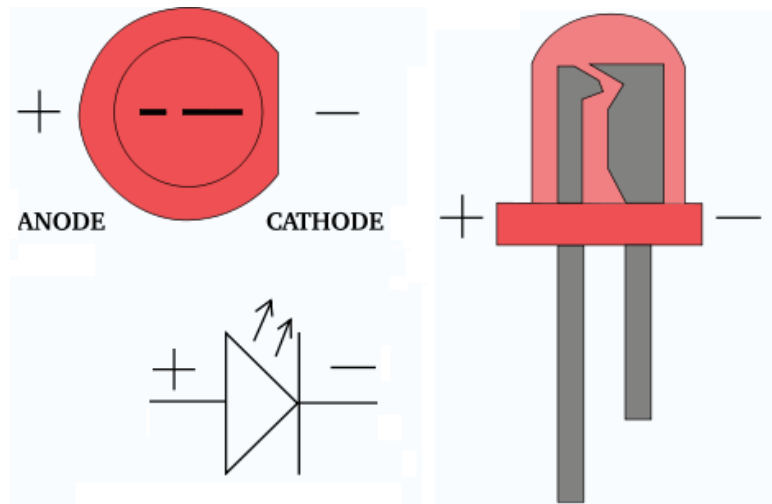


LEDs

Light Emitting Diodes

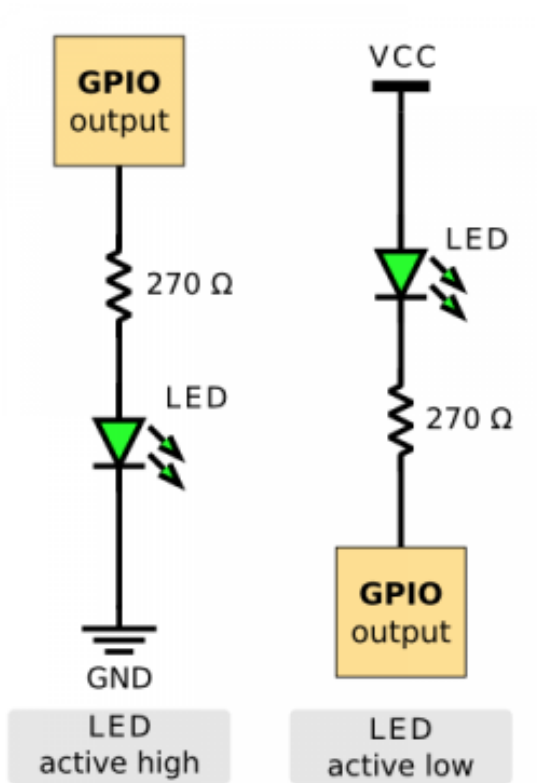


Typical Voltage Drops

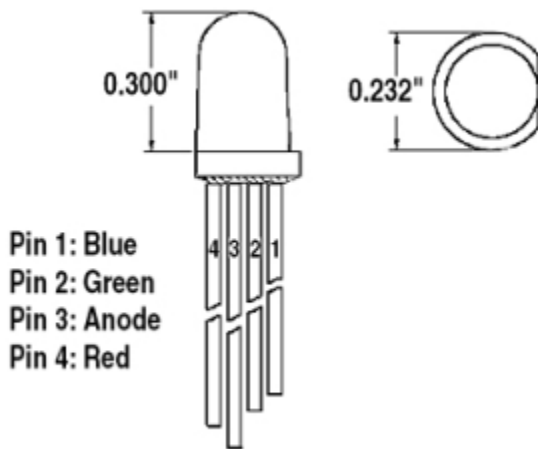
Color	Voltage Drop
Red	1.7
Bright Red	1.9
Orange	2.0
Green	2.1
Bright White	3.4
Blue	3.4

Using LEDs

By syncing the LED to the GPIO, you can remove the constraint of the GPIO max current.



Multi-Color LEDs



Calculating Resistance Needed

For brightest LED without exceeding max GPIO current of 12 mA (ESP8266):

$$V = I * R$$

$$R = V / I = 3.3 / 0.012 = 275 \text{ ohms}$$

Question:

Should we consider the voltage drop in the following calculation? Should it be:

$$V = I * R$$

$$R = (V_{ss} - V_{drop}) / I = (3.3 - 1.7) / 0.012 = 133 \text{ ohms}$$