Appendix H

Resistor Codes

Reading resistor values is like learning a code. Engineers use a code to determine the values for the normal ceramic resistors that are commonly used in lab. Each resistor is labeled with 4 bands which, when read from left to right, will tell you how much resistance the resistor is supposed to have.

The code is the color bands on the resistors. The way to read them works as follows. For the formula $WX * 10^{Y} \pm Z\%$, W is the first band, X is the second band, and Y is the third band. Z refers to the tolerance of the resistor. To know which color relates to which numeral, we use the table below. The 4th band, Z, is usually silver or gold. Silver refers to a 10% tolerance and Gold Refers to a 5% tolerance.

Color	Black	Brown	Red	Orange	Yellow	Green	Blue	Violet	Gray	White
Number	0	1	2	3	4	5	6	7	8	9

Do you remember Roy G. Biv from physics? If you look down the color column, you can see that the letters ROYGBV are used in order going from 2 to 7. Note: Indigo is not included in this. Another mnemonic device I was told about was, **"BB Roy (of) Great Brittan (has a) Very Good Wife."**

You need to be careful when reading the bands. For example consider the resistor shown below:

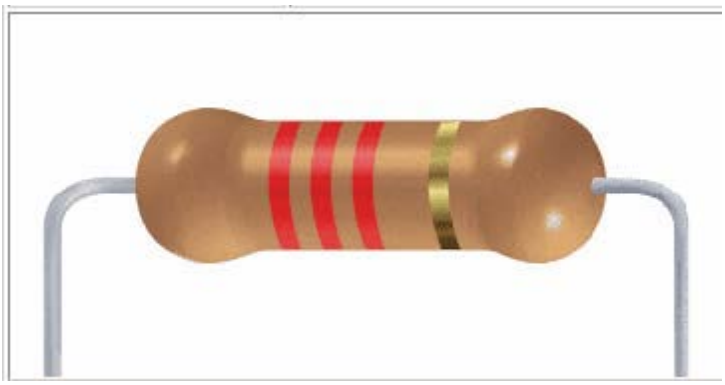

Figure1: Resistor's Color Code.

To read this, we say it is 22 x 10^2 +/- 5%. However, when we talk about it, we would call it 2.2 kΩ or perhaps 2200 Ohms.