How To Test A Capacitor

Typical capacitors values and working voltage
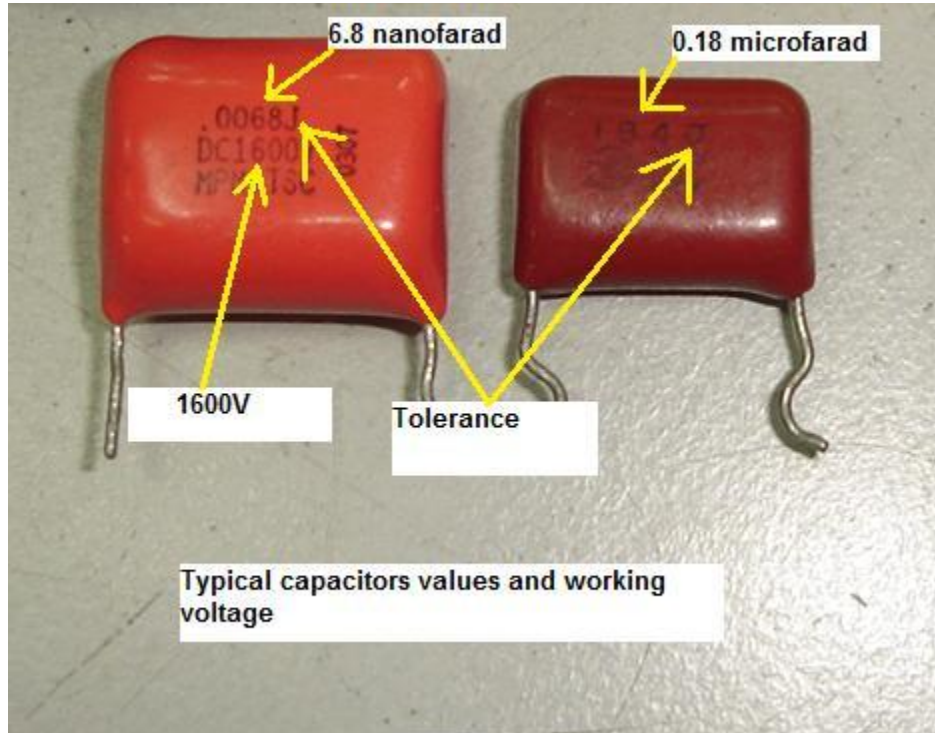
Non Polarity Capacitor

First step to test a capacitor is to calculate the value. Without knowing the capacitor value you will not know if a capacitor is good or bad. Capacitor values come in the unit of picofarad(pf), nanofarad(nf) and microfarad(uf). Here is just some of the examples of capacitor values:

1)102 = 10 00pf = 1nf

2)104= 10 0000pf= 100nf or 0.1uf

3)223= 22 000pf = 22nf or 0.022uf

so in the picture above we have 184 which is 18 0000= 0.18uf and the letter "J" means 5% tolerance. Every capacitors comes with a working voltage and the the typical values are **100 Volts, 250 Volts, 400 Volts, 1000 Volts, 1600 Volts** and etc.

Testing the Capacitor

Electrolytic capacitor have the capacitance value printed on its body thus no calculation involved! Look at the picture below:
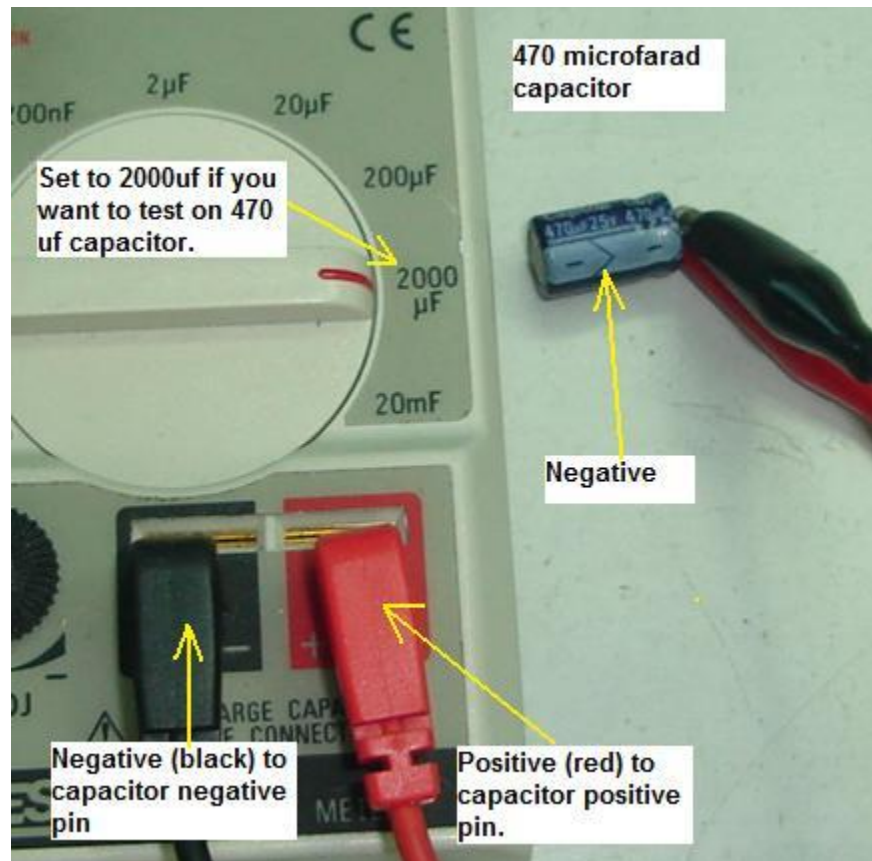
The right way to test the value of capacitors

In order to test capacitor value you **must use a digital capacitance meter** as shown above, simply connect any capacitors to the digital capacitor meter. If you want to check an electrolytic capacitor make sure you connect the black probe to the negative lead while the red probe to the other lead. Read from the LCD display the capacitance value. Set the capacitance meter to higher range if you want to check a capacitor.

For example, if you want to test the 470 micro farad capacitor, the meter have to be set to 2000 micro farad as shown from the picture above. If you want to test on the non polarity capacitor like the ceramic capacitor, you can connect your test probes on either leads of the capacitor and read from the LCD display of the meter. If the LCD display shows a result of 330 microfarad when measuring a 470 microfarad capacitor,

you would know that the capacitance value has changed and need a replacement. **It is as simple as that to test a capacitor if it good or bad.**

Using analog meter to test on electrolytic capacitor

Second method is to use analog meter and place the probes across the capacitors lead. You can't test the capacitance value with this method. What you can test is the charging and discharging of the capacitor. Set the ohm meter range to low ohms first and gradually increase the range when you come to test smaller capacitor value like the 0.1 micro farad capacitor. **The disadvantage of this method** is even if there is a bad capacitance value, the meter would still shows charging and discharging in the faulty capacitor. Avoid using this method to test capacitor.

Source: http://www.co-bw.com/DIY_Audio_Test_Capacitor.htm