

Important Warning! Camera Flash Capacitor
as originally presented on “Do it Yourself Digital Camera Repair”
<http://camerarepair.blogspot.com/>

If you must open up your camera in an attempt to repair it, it is very important that you understand that there is some risk of electrical shock. All digital cameras contain a flash capacitor. This device stores quite a bit of electrical energy from the camera's batteries. This energy is utilized to power the camera's flash. The device itself looks a little like a battery, and in turn draws its power from the camera's batteries. In order to work on your camera, it will be necessary to safely drain the capacitor of any residual charge it may have.

Before we start, the usual warning of “Follow these procedures at your own risk. These procedures should only be considered as a last resort on a broken camera with an expired warranty. I take no responsibility should you damage your camera in following these steps. Also note that there is some danger of electrical shock from the camera's flash capacitor. I also take no responsibility if you zap yourself while following these procedures.”

Flash Capacitor



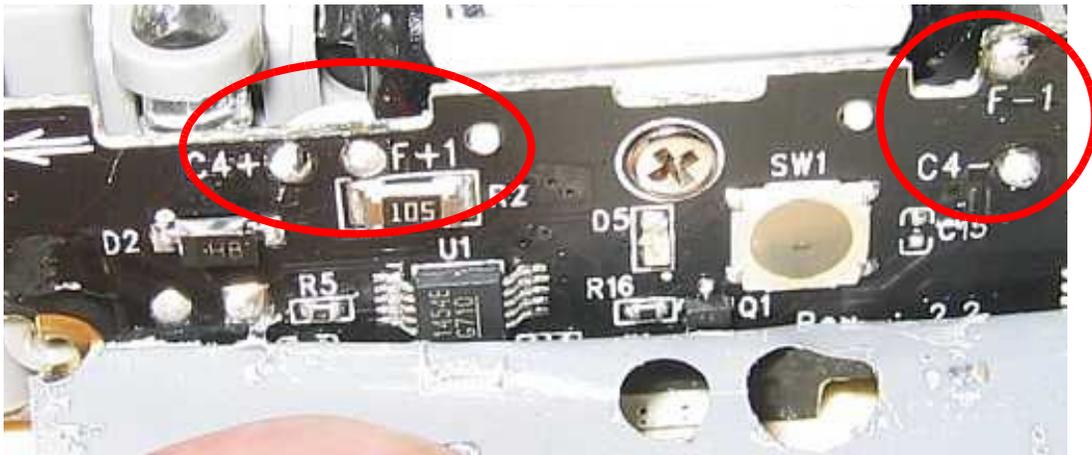
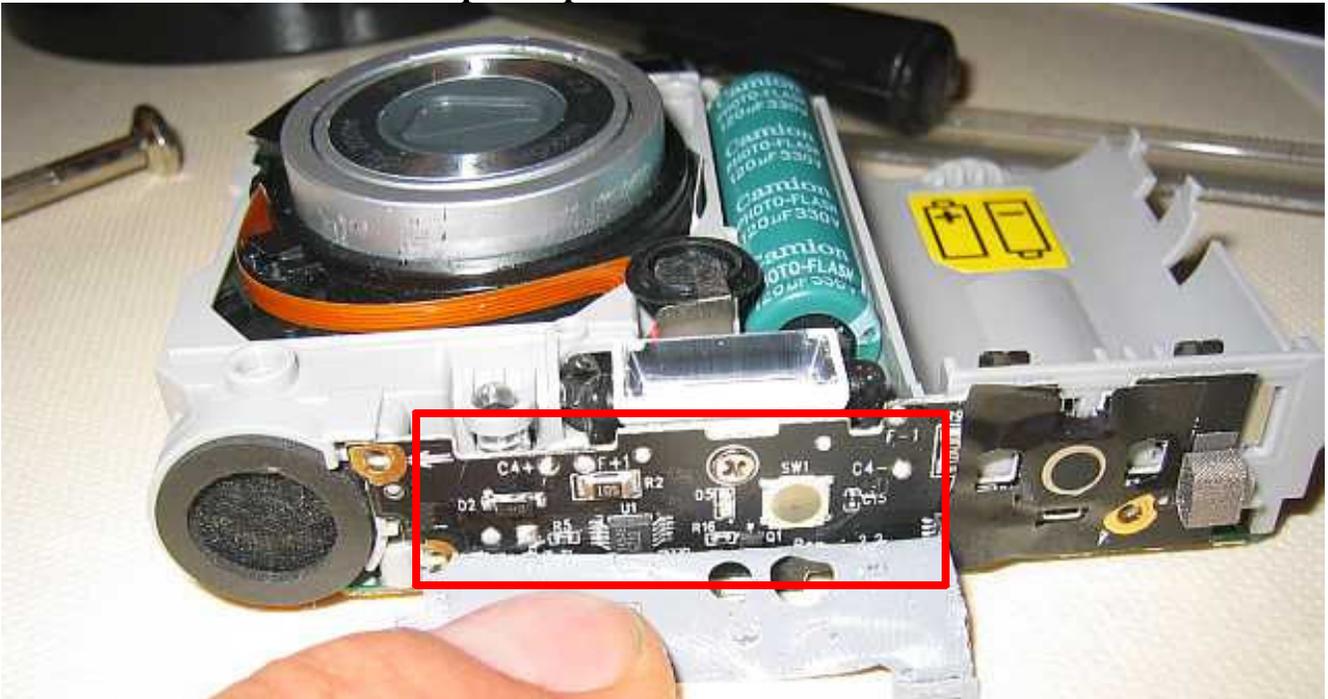
Make sure that you removed the camera's batteries before removing the case from your camera. Note that the flash capacitor will still maintain its charge, and will still be capable of zapping you even with the batteries removed. We just want the batteries out to prevent the capacitor from recharging after we discharge it. After the batteries are removed, we may commence removing the camera's case as outlined in the various disassembly guides available on the internet. When removing the camera's outer case, ***do not directly touch the circuit board or any exposed metal of the camera's interior.*** Instead hold the interior components by the plastic flashing that the circuit board and internal components are mounted to.

Examine the circuit board for any solder joints labeled with + or - . You should at least two pairs of solder joints labeled as such. The first pair will be for the battery inputs to the circuit board. However, the other pairs should be in some way related to the leads of the flash capacitor. One way to identify them with certainty is to locate the flash capacitor, and follow its leads to where they enter the circuit board. The following pics give some examples of capacitor leads on the circuit board.

Example Capacitor Lead Canon A430

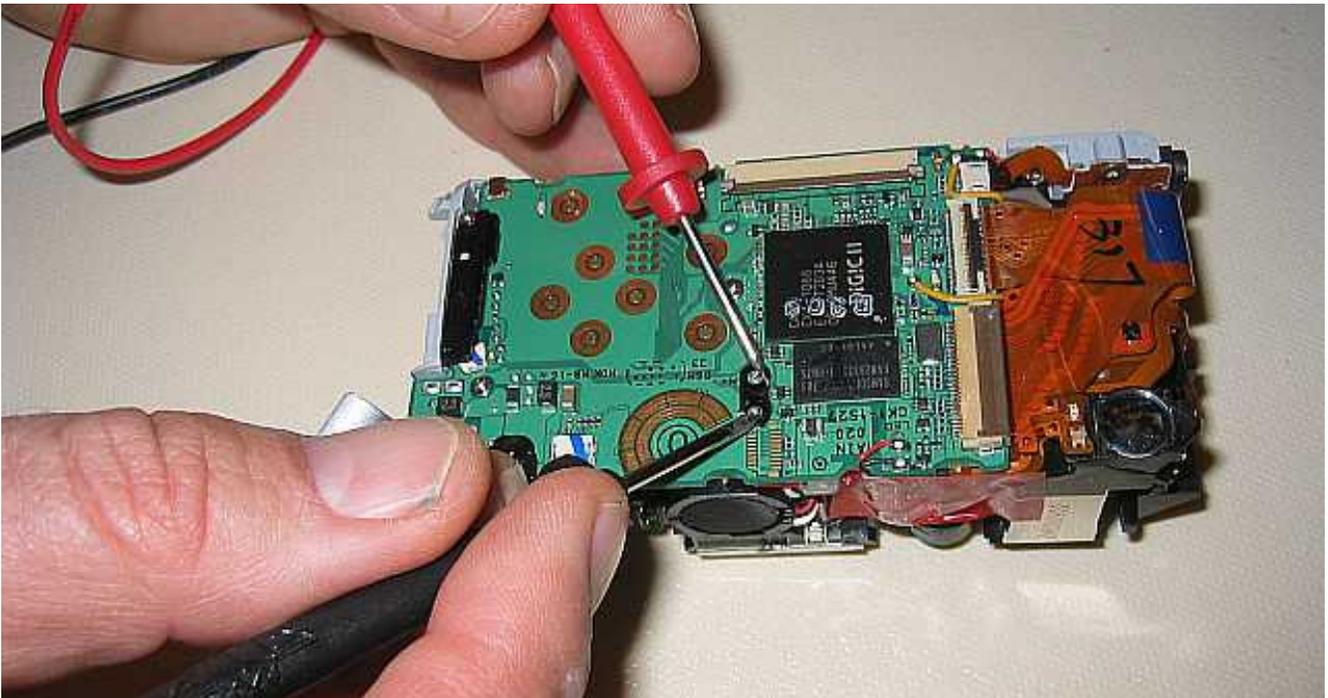


Example Capacitor Leads Nikon L10



Now that you've identified the capacitor leads, its time to safely discharge the capacitor. For this you'll need an analog voltmeter (the one with a needle dial, NOT the type with a digital number readout). These are generally very inexpensive (a cheap \$ 5 to 10 one is fine, and will generally come in very handy for other digital camera repair). These are available at your local radio shack, or hardware store. Other people may recommend some type of resistive load to discharge the capacitor, but the advantage of a voltmeter is that it will allow us to safely verify that the capacitor has indeed been discharged.

Your voltmeter has several ranges of voltages that can be selected on its control dial. Select the range that is closest to 50 volts. Now take the red probe and apply it to the + lead, and apply the black probe to the – lead. Take extra care to touch only the + / - leads with the probes, and not to accidentally brush up against any other components, thus possible shorting/frying them. If the capacitor was charged, the voltmeter reading should spike upward, and then slowly drop as the capacitor slowly/safely discharges through the voltmeter. Keep the probes applied to the lead until the voltage reads zero. Be aware that this may take a couple minutes. After the voltage drops to zero, remove the probes for a few seconds, and then reapply them to the leads to again verify that the capacitor has indeed been discharged. After this, apply the probes to any other + / - leads that you see on the circuit board to verify that they read zero. That's it, your capacitor is now discharged, and it is now safe to proceed with any other repair or disassembly that you had in mind for the camera.



One final note, **if you insert the batteries for any reason with the case removed, you should assume that the capacitor has again been recharged, and will potentially shock you.** To re-safe the capacitor, you'll need to again remove the batteries and re-follow the steps outlined above to again discharge the capacitor.

Good Luck with your repair,



Camera Repair