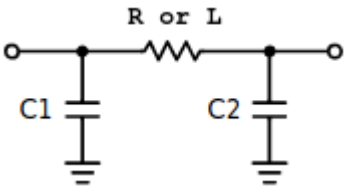
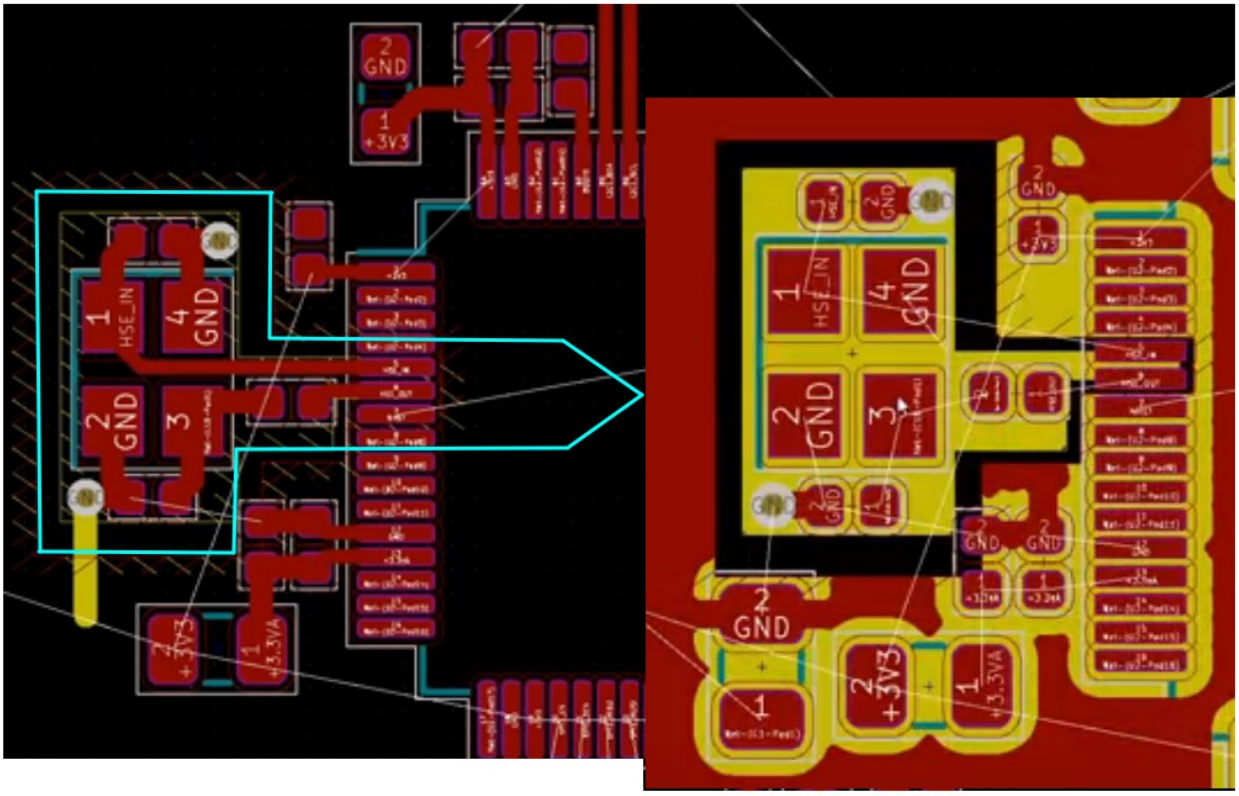
MCU boards that reset or fail

Reset Problems

1. **Power Supply** - check that there are no low or high frequency disturbances which can be resolved with pi-greek filters.



2. **Oscillator** - Check that the MCU oscillator is isolated from the rest of the circuit, see PCB example below.
   If possible it is best to use the internal oscillator (s) of the MCU.



3. **Disturbances** - Check that there are NO disturbances on the I/0 and in general on the MCU peripherals and above all that there are no reverse currents on the MCU PINs.
4. **Option Byte**, **Boot**, etc. - Check that you have correctly configured the Option Bytes, the BOOT pins and any configuration levels of the power supply supervisors inside the MCU.
5. **Reset** - Last but not least check the RESET pin of the MCU that must properly configured. Be careful because some MCUs have the reset pin which is bidirectional. Fai attenzione perché alcune MCU hanno il pin di reset che è bidirezionale.

Fail

1. In general check the points listed above.
2. **Voltages** and **Currents** - In particular, check for voltage and current point 4 listed above, reverse currents and extra voltages are the main causes of faults.
3. **Multiple boards connected** - If there are several electronic boards linked together, check that the ground planes are congruent with each other.
4. **Power Loops and Signals** - It is essential that there are no power and/or ground loops and/or signals that would act as noise receptor antennas.
5. **PCB** - The analog and digital parts must be well separated from each other to avoid interference. The input and output signals must not mix. Always check several times that there are no errors in the PCB.
6. **Wirings** - Check that the wiring has a logical sense, that is, no mix between inputs, outputs and power supplies.
7. **SOFTWARE** - pay attention to the SW which, unlike what you think, can cause serious problems to your HW.