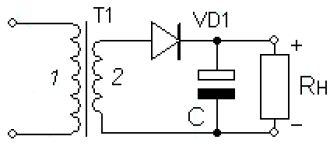


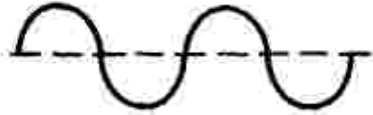
Answer on Question #39414, Physics, Electric Circuits

This is common circuit of rectifier with diode and capacitor.



You can see several plots below for explanation.

This is input signal (sine wave in this case)



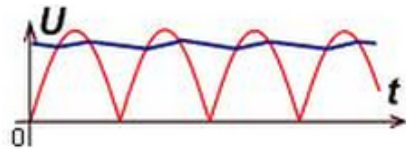
The next plot is illustrated signal after diode.



But, you can see that we haven't typical determined current, that's why we need to put capacitor in circuit. If we put capacitor with low value of capacity we will have:



If we put capacitor with high value of capacity we will have:

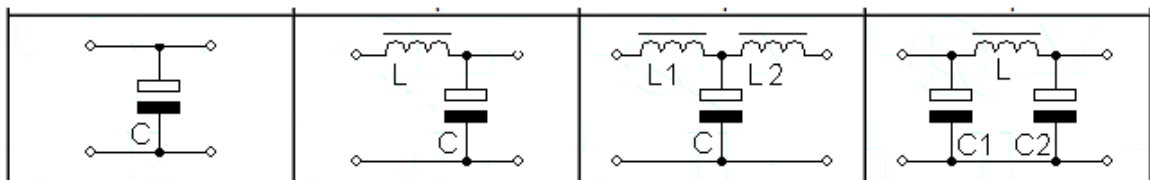


Red curve is input signal, blue curve is output signal.

When voltage is non-zero capacitor is charged, but when voltage becomes zero level, capacitor will give charge to load. It is main principle of rectifier.

If we connect the capacitor in series we will have circuit with reactance, because capacitor is skipped the voltage fluctuations but has reactance.

There are a lot of circuits with different types of filters and rectifier and we can combine inductor and capacitor, there are some circuits:



If there is no voltage, reactive elements (inductors, capacitors) will discharge.