

Name:

Put on the safety glasses. You'll be measuring a live circuit with non differential probes. Please consider the circuit in Fig. 1 which is also implemented on the desk and connected to a signal generator. You can not use the autoset button of the oscilloscope. You can not change the setting on the signal generator, or move/disconnect the probe on channel 1 of the oscilloscope. The circuit is driven by a $10\text{ V}_{\text{pk,pk}}$, 500 kHz with 0 dc offset square wave, which is measured by Channel 1 and displayed on the oscilloscope. At each edge of the square wave, the RLC circuit will be excited and exhibit a transient response. In this circuit $C = 120\text{ pF}$.

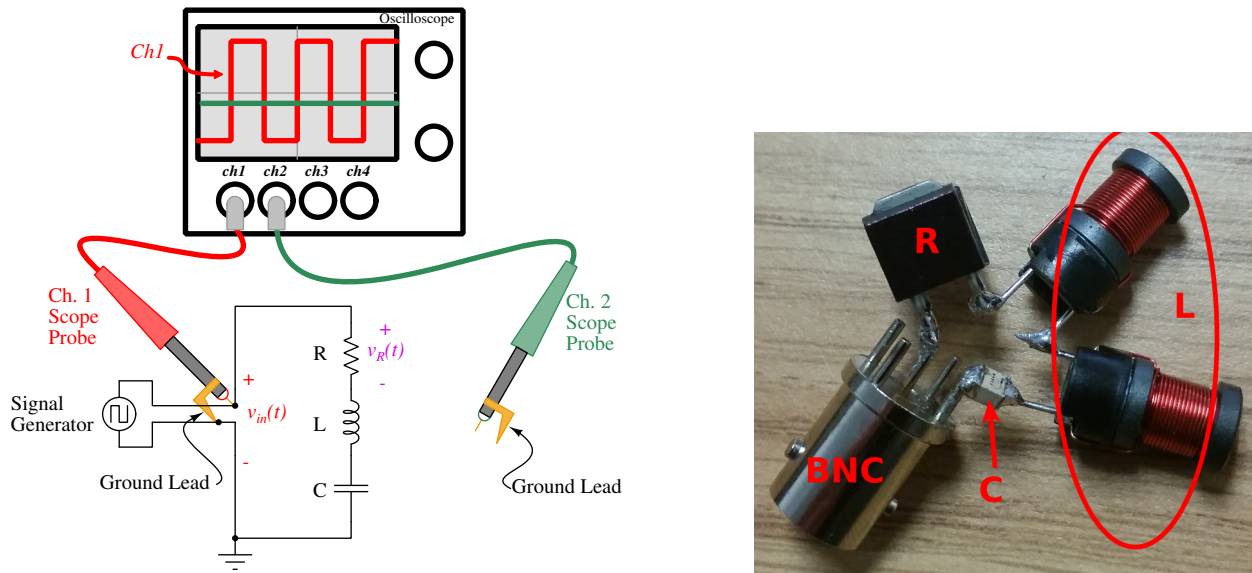


Figure 1: RLC circuit driven by a square wave

- Using the probe attached to channel 2 of the scope, display (and capture) on the screen the voltage across the resistor $v_R(t)$.
- From the measured waveform, find the values of R and L in the circuit
- What value of R would you need to choose to get a critically damped transient response?