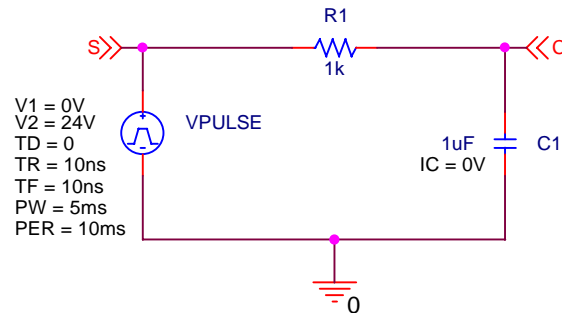


Transient Analysis of an RC Circuit (using a pulsed source)

Purpose: To use a pulsed source to simulate a switch opening and closing two times where the circuit has time to reach steady-state between switch movements. Then graph the source and capacitor voltages.

Analysis type: Transient. $5\tau = 5RC = 5(1k)(1\mu F) = 5 \text{ ms}$. The capacitor needs time to charge and discharge twice, so the final time for the transient analysis is $20\tau = 20 \text{ ms}$.



OFFPAGE symbols were added and labeled S and C. Note that the source voltage is $V(S)$ and the capacitor voltage is $V(C)$.

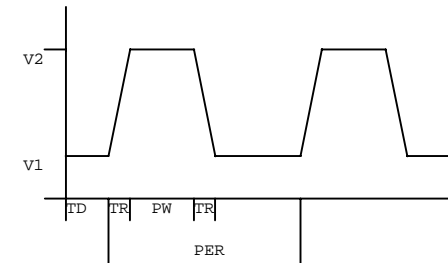
The part VSOURCE was added from the SOURCE library (see illustration to the right and the definitions below).

V1 = initial voltage value
 V2 = final voltage value
 TD = delay time
 TR = rise time (non-zero value required)
 TF = fall time (non-zero value required)
 PW = pulse width (length of time that pulse has value V2)
 PER = period

Note that initial conditions (IC) can be added to a capacitor or an inductor. See instructions below for displaying the IC attributes.

Edit attributes of parts as follows:

- 1) If the attribute appears next to the part, double click it and then change its value
- 2) If the attribute does not appear next to the part, double click on the part, find the desired attribute, right click on it and select DISPLAY. Then indicate what Display Format is desired. Once the attribute has been displayed, double-click on it and change the value.



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