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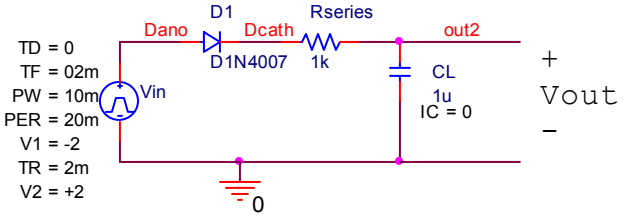
303H Fall 2013– Homework 1 Due Tu 09/17/13

The Gvalue part is in the abm.olb library

The 1N4007 diode is the part D1N4007 and is in the diode.olb library

The PARAM part is in the SPECIAL library

1. (50 points, diode Spice analysis)
   For the following circuit set up and do a transient analysis in Spice. Run over the time range 0 to 50milliSeconds. Submit a copy of your circuit diagram and of the input and capacitor voltages.
   Vary some of the parameters, such as rise time, resistance and capacitance and comment upon the results.



2. (50 points, Gvalue and load line)
   Set up the following circuit in Spice and use that to plot the DC curves of the diode connected Gvalue and its load line over the Gvalue voltage,V0, of 0 to 5 V and again, by "zooming" with the x-axis setting, over 0 to 2.2 V. Use the parameter and vary RL from 1 Ohm to 7 Ohms in 2 Ohm steps. Change all traces to black and submit your curves along with your circuit diagram. [note that the diode curve is designed to be a cubic with zeroes at v=0,1,2 and a max of 2 between the first two zeroes].