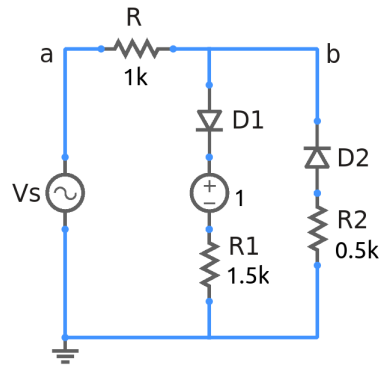


ee101_diode_circuit_1.sqproj



Shown in the figure is a diode circuit example to illustrate the basic operation of diode clipping circuits. Assume the turn-on voltage of the diodes to be 0.7 V .

Exercise Set

1. Plot V_o (V_b) versus V_i (V_a). Compare your result with simulation.
2. Plot the diode currents i_{D1} and i_{D2} versus V_i . Compare your result with simulation.
3. How will the V_o versus V_i curve be affected with the following changes (keeping all other component values the same as in the figure)?
 - (i) R is changed from 1 k to 2 k ?
 - (ii) R_1 is changed from 1.5 k to 0.5 k ?
 - (iii) R_2 is changed from 0.5 k to 1 k ?
 - (iv) The polarity of the source V_s is reversed?
 - (v) The diode D_2 is reversed?
4. For a sinusoidal input V_i going from -5 V to 5 V , with a frequency of 500 Hz , sketch V_o versus time. Verify with simulation.