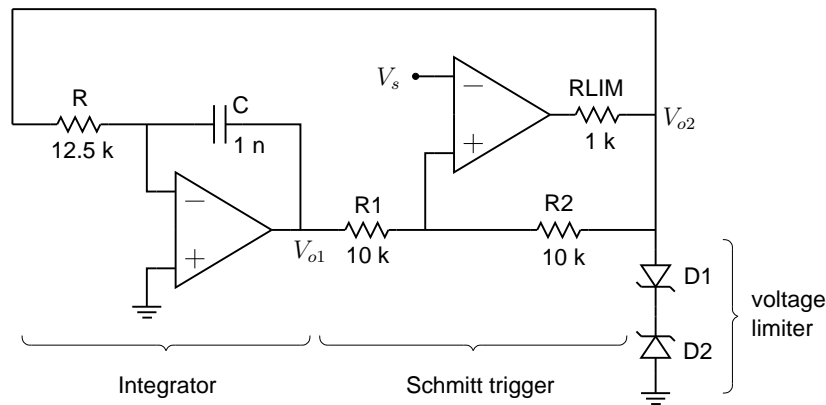


opamp_osc_1.sqproj



Shown in the figure is an oscillator circuit which produces a triangle wave at V_{o1} and a square wave at V_{o2} . The Zener diodes serve to limit the output voltage to $\pm(V_Z + V_D)$.

Exercise Set

1. For the component values given in the figure and with $V_s = 0 \text{ V}$,
 - (i) Sketch the V_o versus V_i characteristic for the Schmitt trigger.
 - (ii) Find the relationship between V_i and V_o for the integrator.
 - (iii) What is the frequency of the oscillations?
 - (iv) What are the minimum and maximum values of $V_{o1}(t)$?
2. Repeat 1 for $V_s = 2 \text{ V}$.
3. Repeat 1 for $V_s = -2 \text{ V}$.
4. What is the purpose of the resistor $RLIM$?

Verify your results with simulation.