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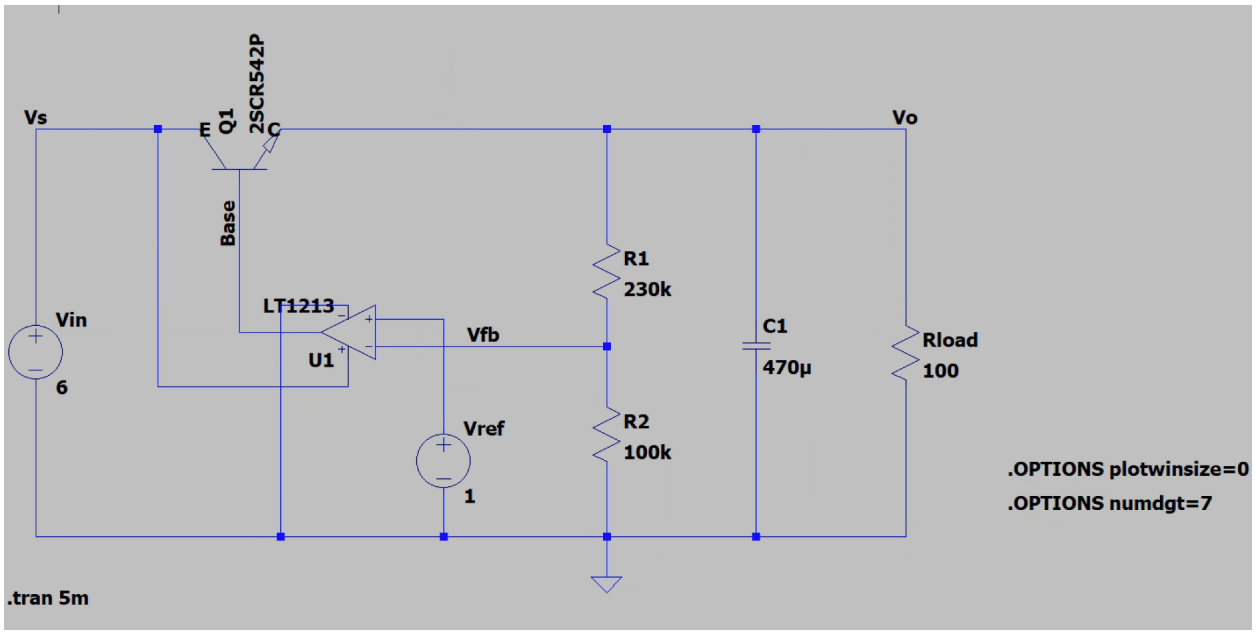
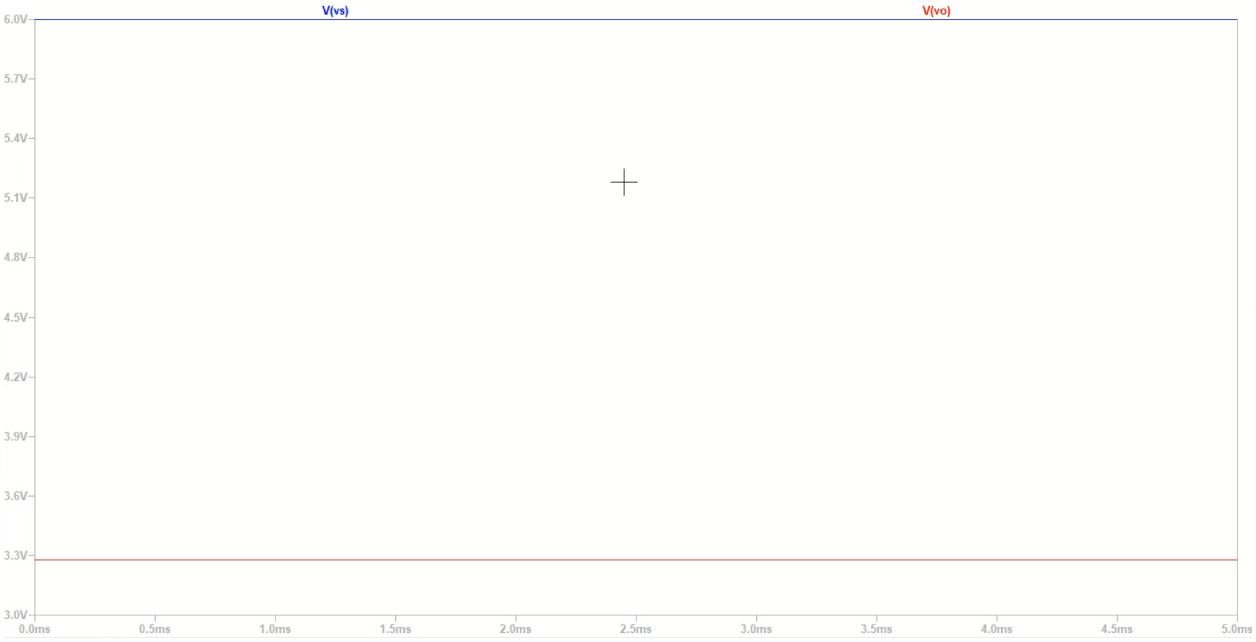
ELEN 164 Lab

20 October 2021

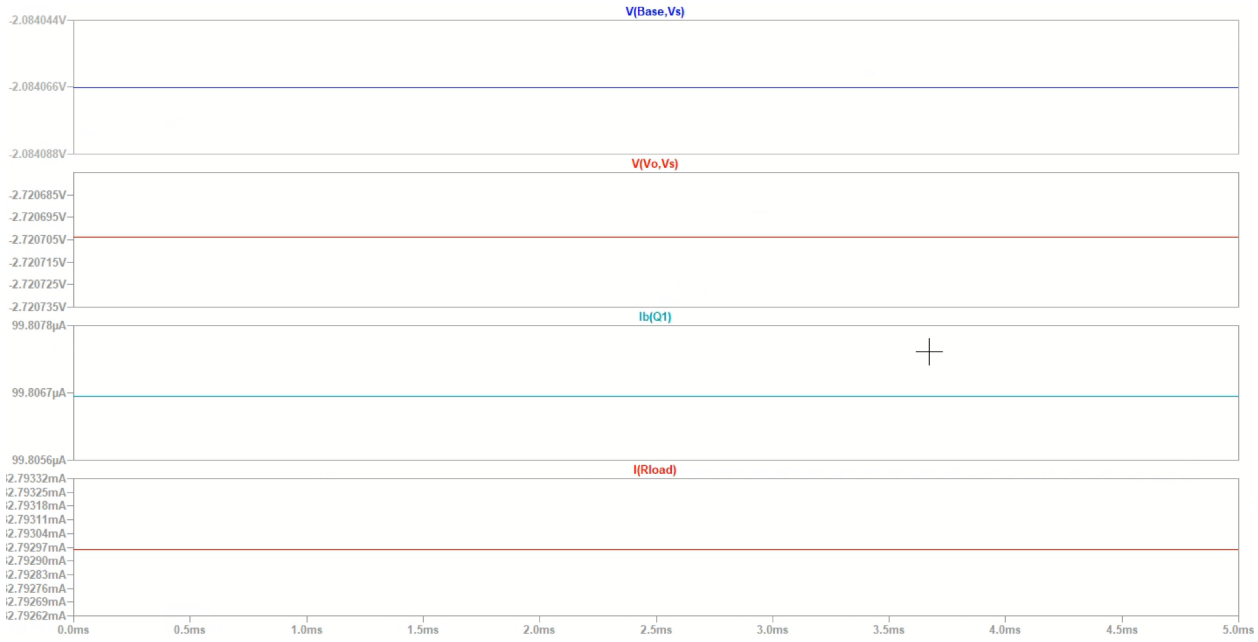
Lab 5: Linear Regulators



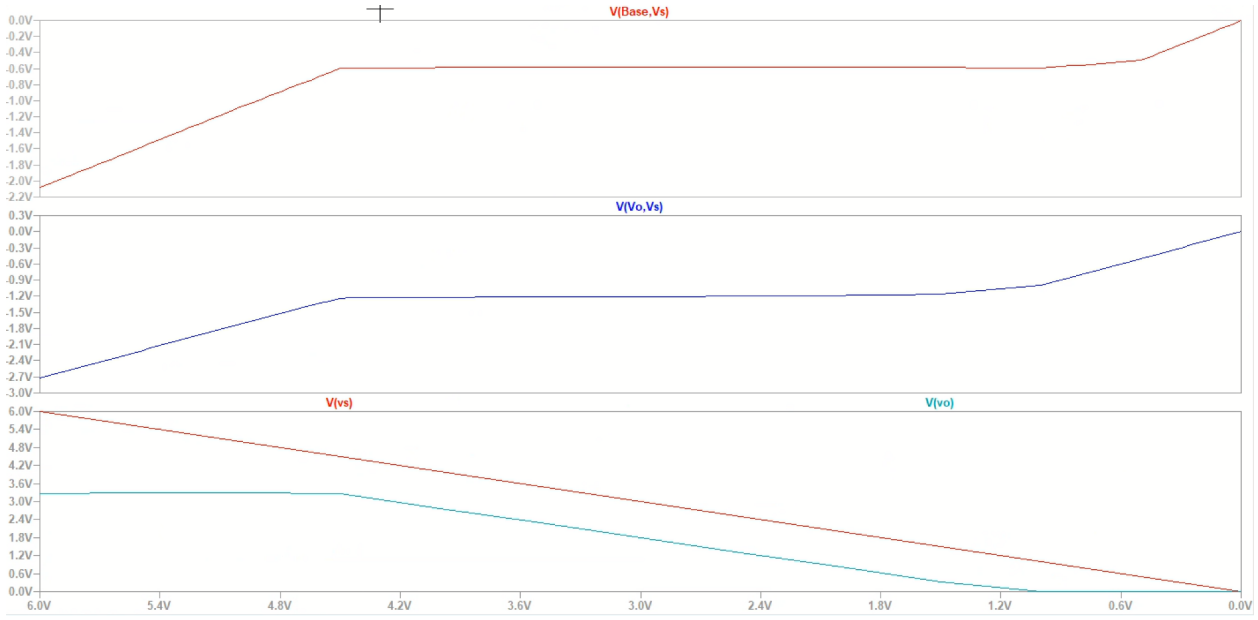


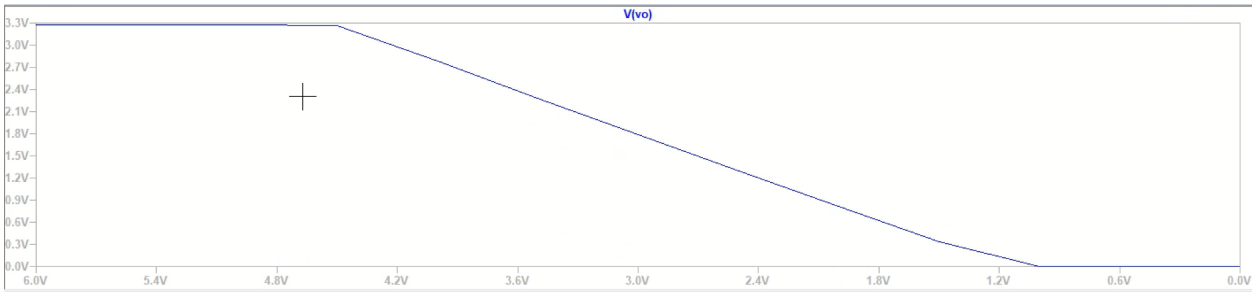
Yes I did expect these voltages. Since we have a DC voltage source I expected the voltage input

and output to be straight lines.

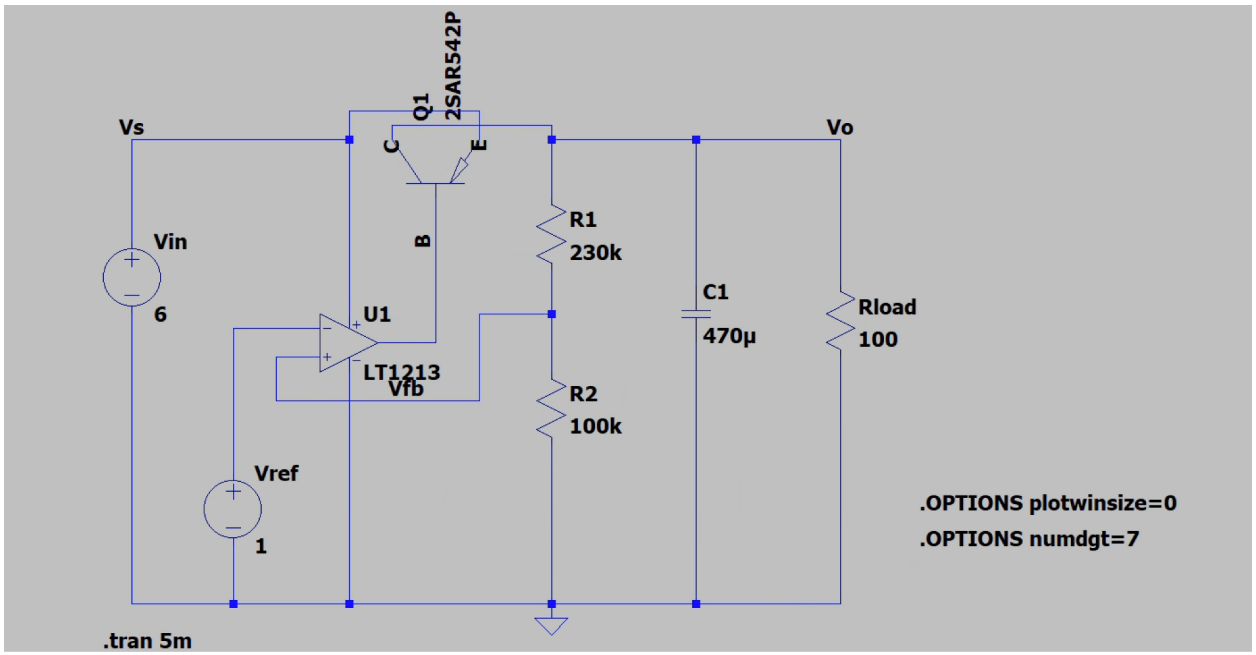


I notice that these graphs are all linear. This is expected since I know that the voltage drop between the base and emitter and collector and emitter are a DC voltage.



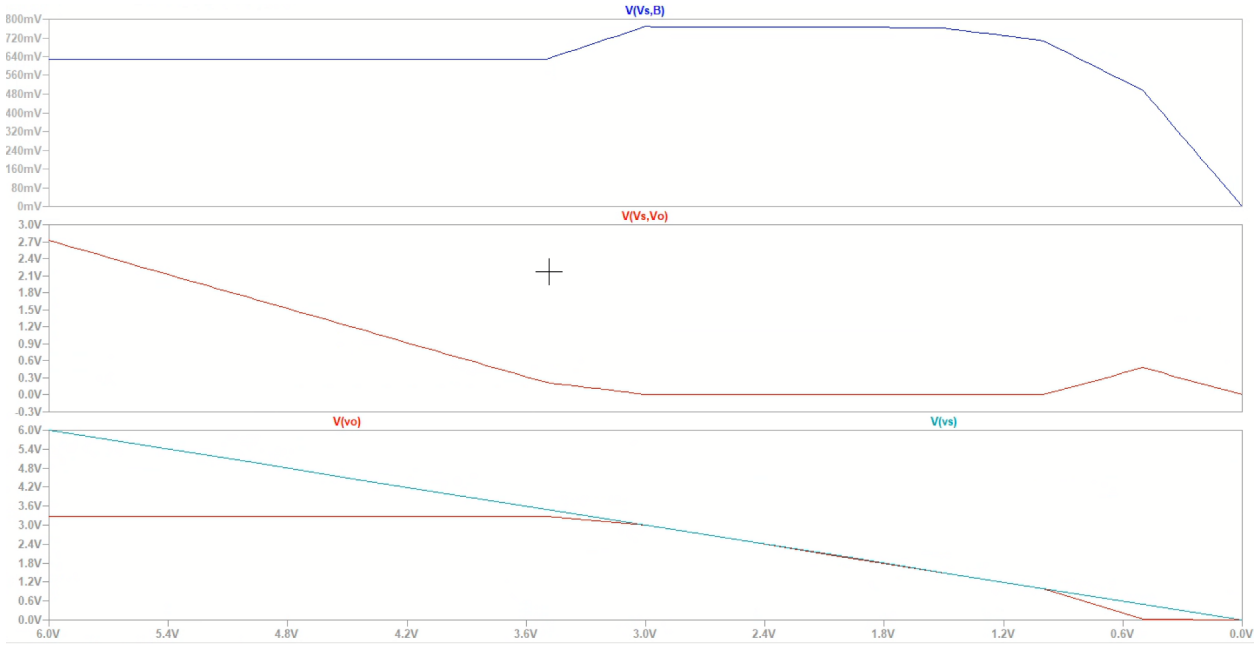


From these graphs I see how the output voltage eventually decreases to 0 and the transistor starts at zero and gradually increases. This makes sense because as there is less and less input voltage the transistor has more of an effect. At around 1V input the output can longer be sustained.

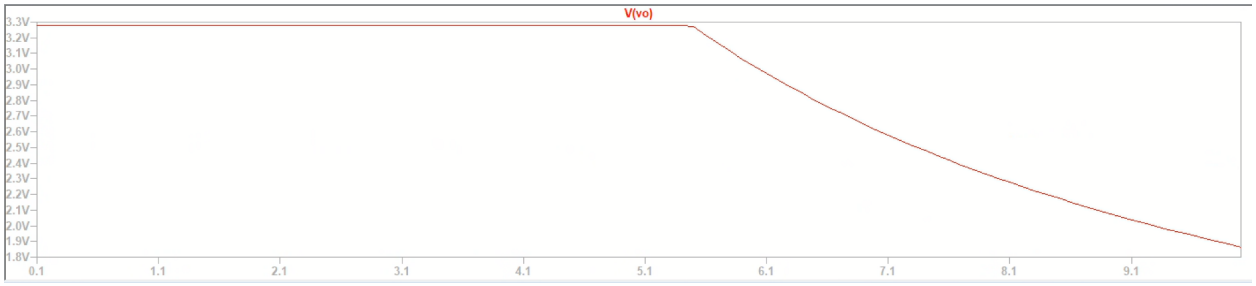


The output is what I expect since the input is a DC source. The output is also expected since it should have a drop.

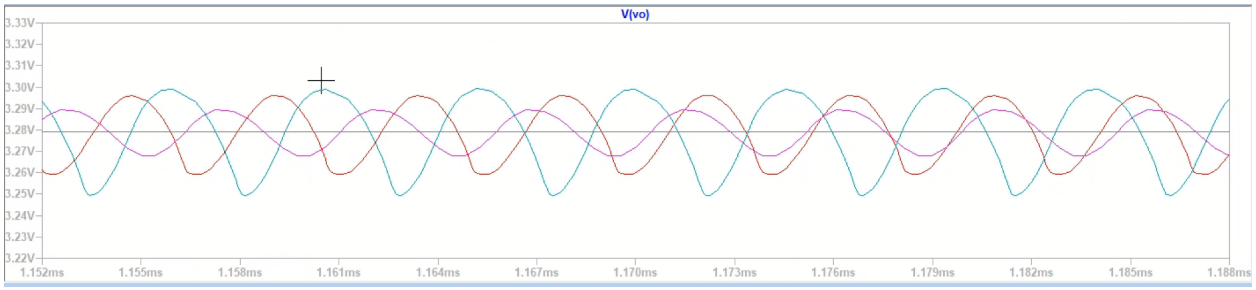
I notice how the base, collector, and emitter voltages are constant which makes sense. The drop between the emitter and the base is very small which makes sense but then the drop between the emitter and collector was a little bit more significant which makes sense with the output voltage.



I noticed how the output voltage is able to be sustained a little bit longer and doesn't seem to hit 0 until 0.4 V.



I can see how the load resistor doesn't seem to play an effect on the output voltage until it is larger than 5V. This is important because it represents the part of the output voltage graph where the voltage is unchanged.



Here the output voltage looks very similar to three phase rectifier we looked at earlier in the quarter. To help prevent the output ripple we could add a capacitor to create a filter for my circuit.