Boost Converter Analysis | ED18B027

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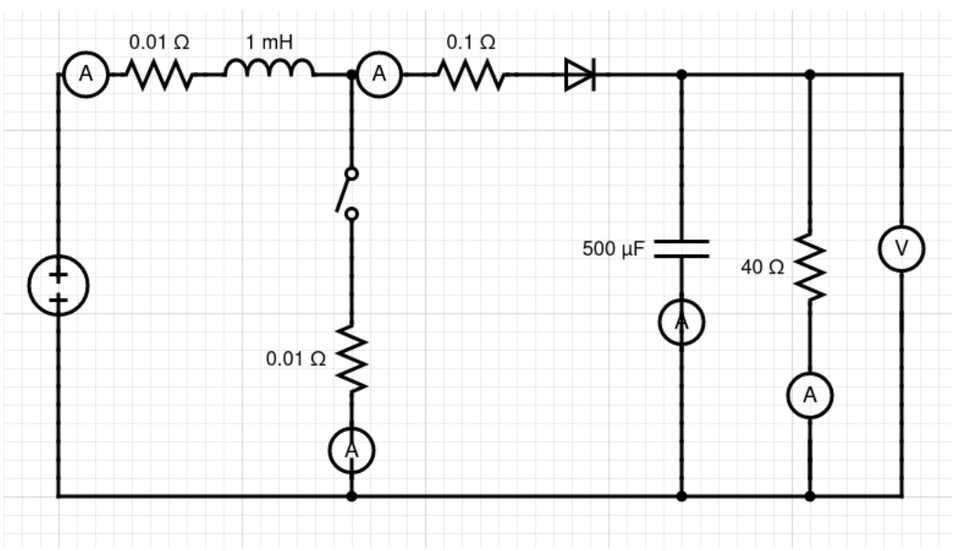
Simulation of Buck and Boost Converter

- Used **Python Power Electronics**
- Gate Signal generated using Ramp Carrier Waveform
- Choose **Duty Ratio** as **0.7** to boost **12V** to **40V**

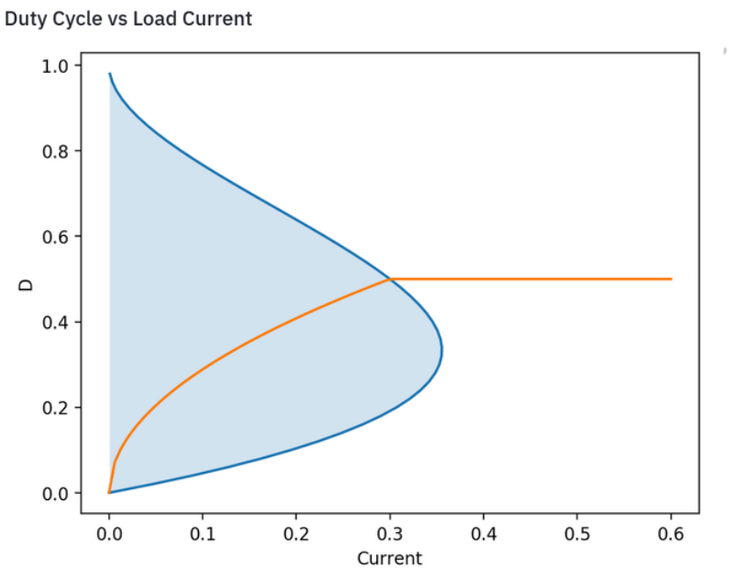


- Compared Currents voltages with C = 50, 500 and 5000 microFarad and L=1, 10 mH.

- **Openloop Control** to reduce initial **spike**, something like **Slow Start**.
- DCM to CCM transition observed in openloop control.

Interactive Graphs using Models

- Interactive Graph showing Duty Cycle needed to maintain constant Vout.
- Shows transition between DCM and CCM mode of operation



- Can't achieve infinite boost, because of inefficiencies.
- Used **small ripple approximation** to plot efficiency vs D and Boost vs D.
- Interactive graphs showing practical efficiency and boost
- Concatenating one boost after another to get better efficiency for same boost.