



ENGS152 Circuits Lab

Diode rectifier

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April 22, 2025

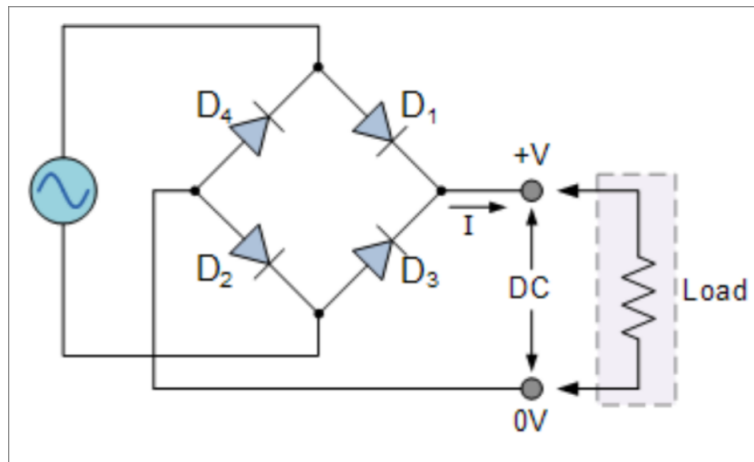


Figure 1: Schematic for step 1 and 2

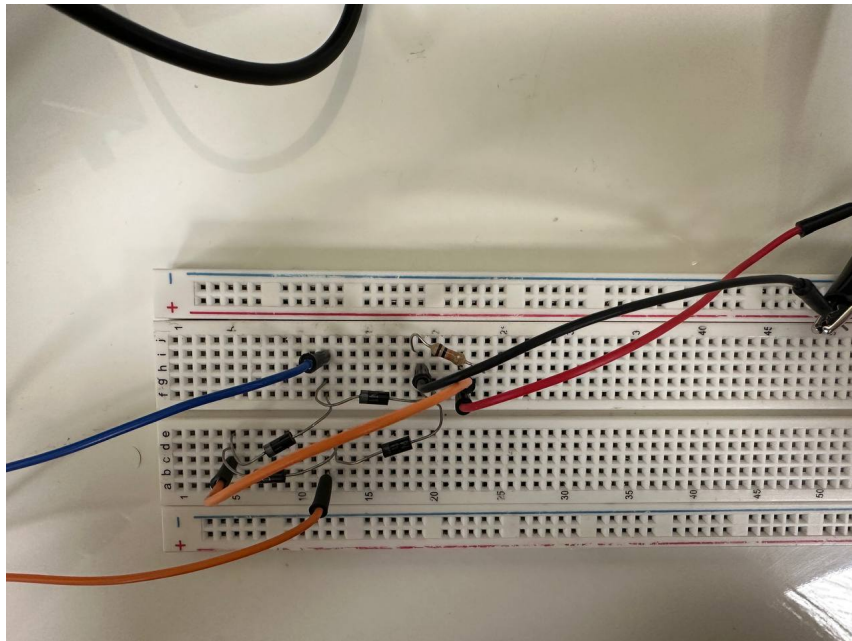


Figure 2: Connecitons for step 1 and 2

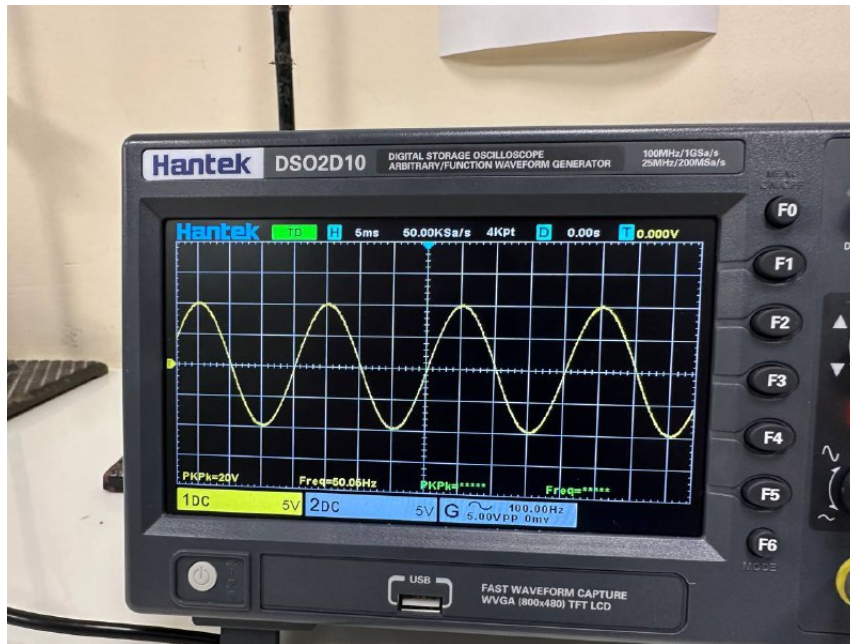


Figure 3: Input signal for step 1 and 2

Step 1: Full wave rectifier

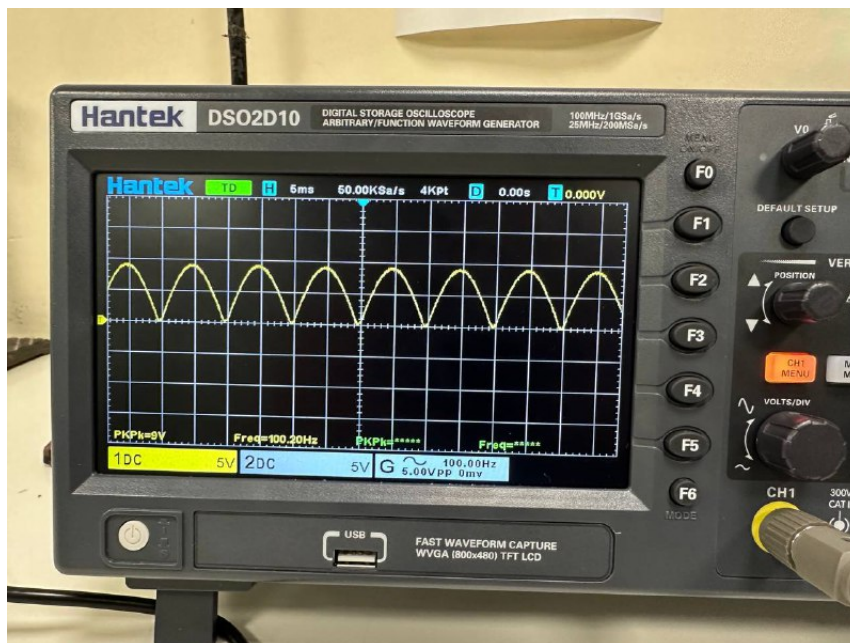


Figure 4: Normal diode connections

Output peak voltage is 1 volt lower than input, as in a given instant a current passes through two diodes and each diode has forward voltage of 0.5V.

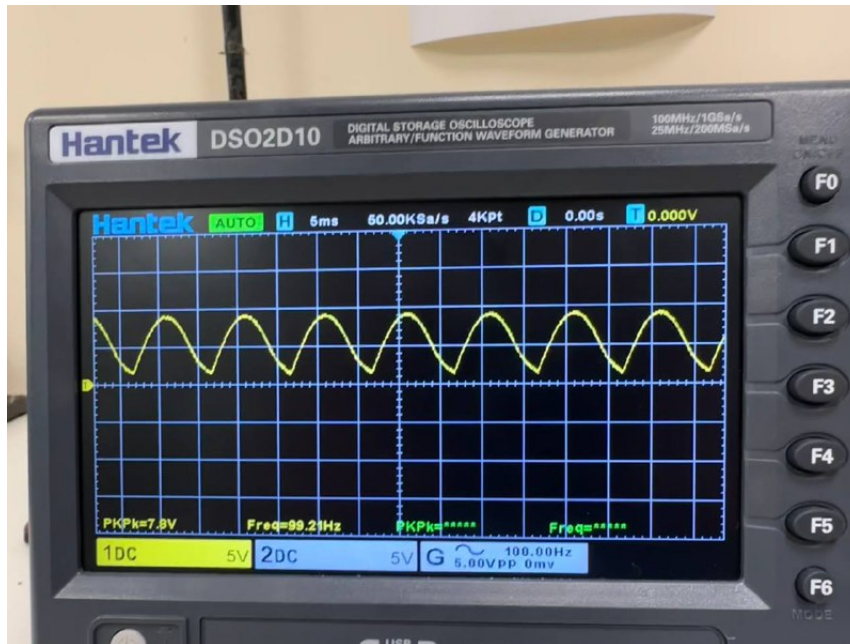


Figure 5: Normal diode rectifier with $0.22\mu F$ capacitor



Figure 6: Normal diode rectifier with $2.2\mu F$ capacitor

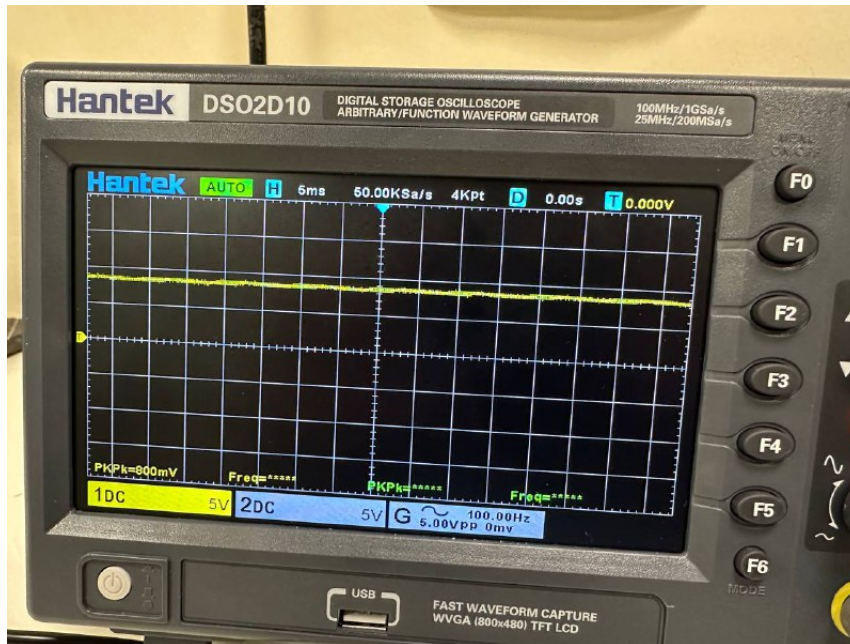


Figure 7: Normal diode rectifier with $22\mu F$ capacitor

Output is approaching DC, when adding a capacitor. Higher capacitance, closer to DC.

Step 2: Full wave rectifier using Schottky diodes

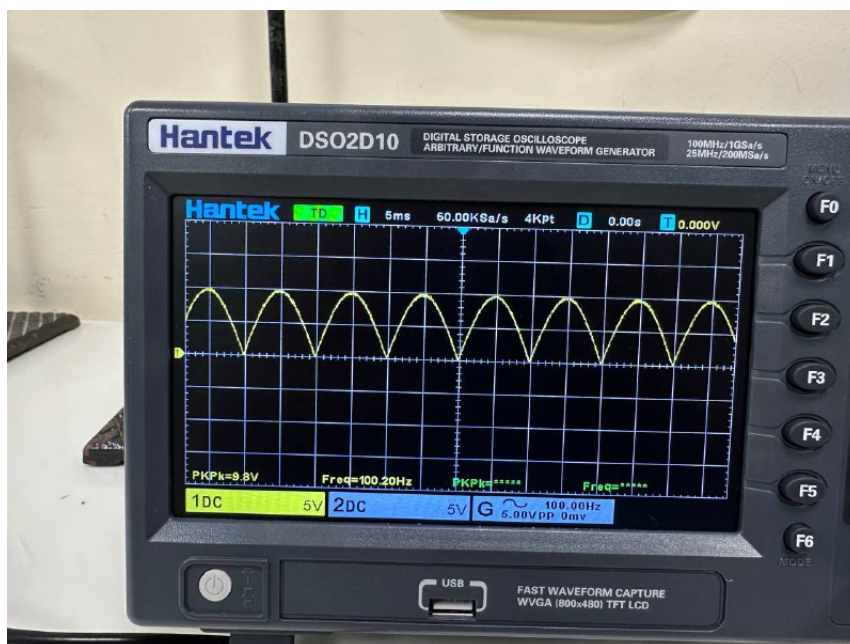


Figure 8: Schottky diode connections

Output peak voltage is 0.2 volt lower than input, as in a given instant a current passes through two diodes and each diode has forward voltage of 0.1V.

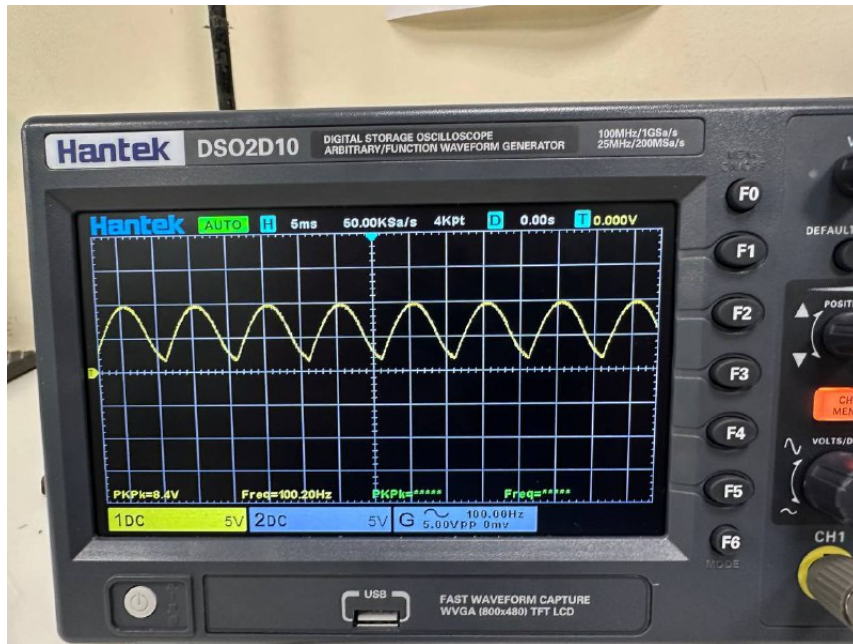


Figure 9: Schottky diode rectifier with $0.22\mu F$ capacitor

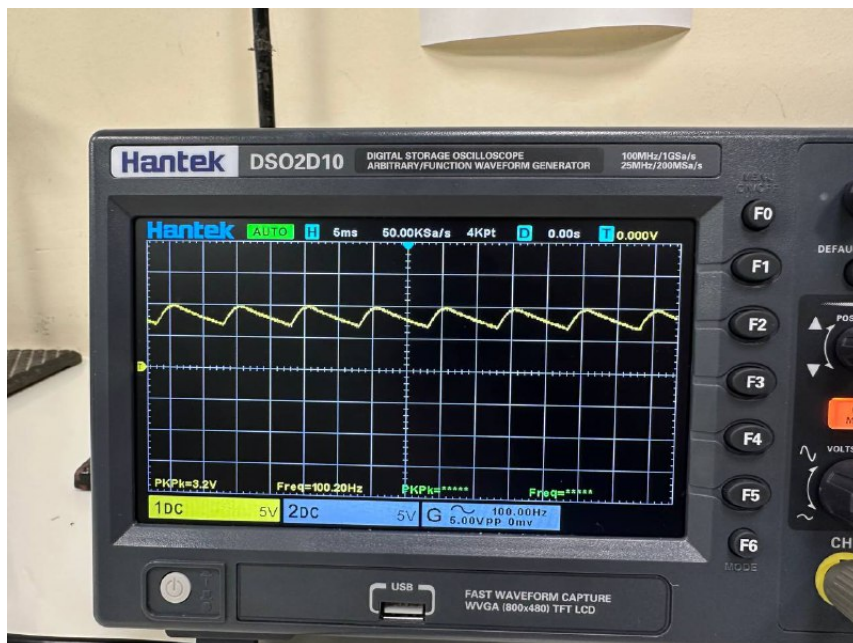


Figure 10: Schottky diode rectifier with $2.2\mu F$ capacitor

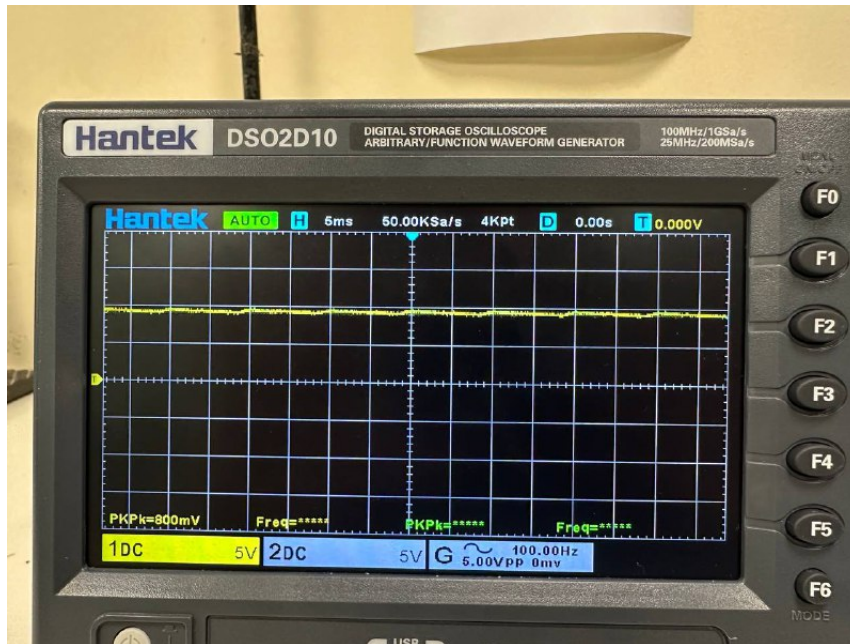


Figure 11: Schottky diode rectifier with $22\mu F$ capacitor

Output is approaching DC, when adding a capacitor. Higher capacitance, closer to DC.