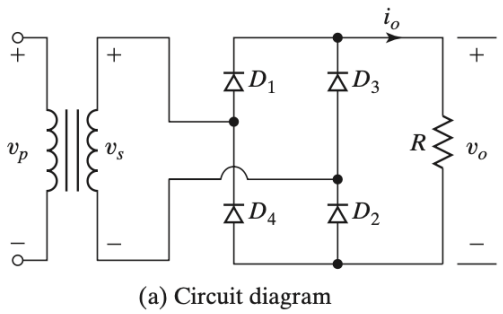
Full Wave Bridge Rectifier Using Diodes

Objective

- To construct a single-phase full-wave bridge rectifier using diodes.
- To analyze the output waveforms for resistive and inductive loads.
- To understand the working principle of a full-wave bridge rectifier.

Circuit Diagrams



(a) Circuit diagram

Figure 1: Full Wave Bridge Rectifier Circuit [1]

Observations

- Constructed a full-wave bridge rectifier using four diodes.
- Observed output waveforms for resistive and inductive loads.
- Verified continuous conduction through the bridge for both half-cycles.
- Confirmed that the output DC voltage is smoother compared to a half-wave rectifier.

Outputs

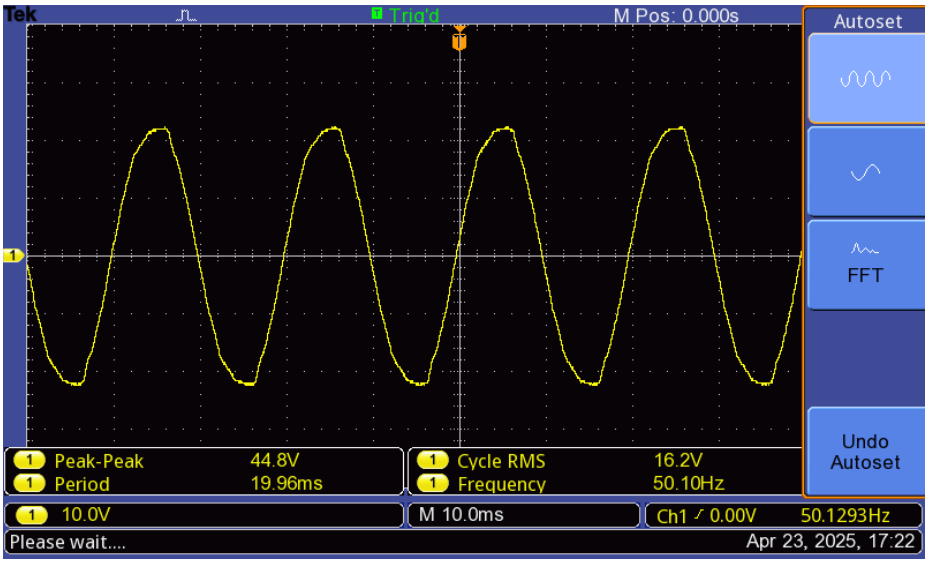


Figure 2: Full wave rectifier input voltage signal

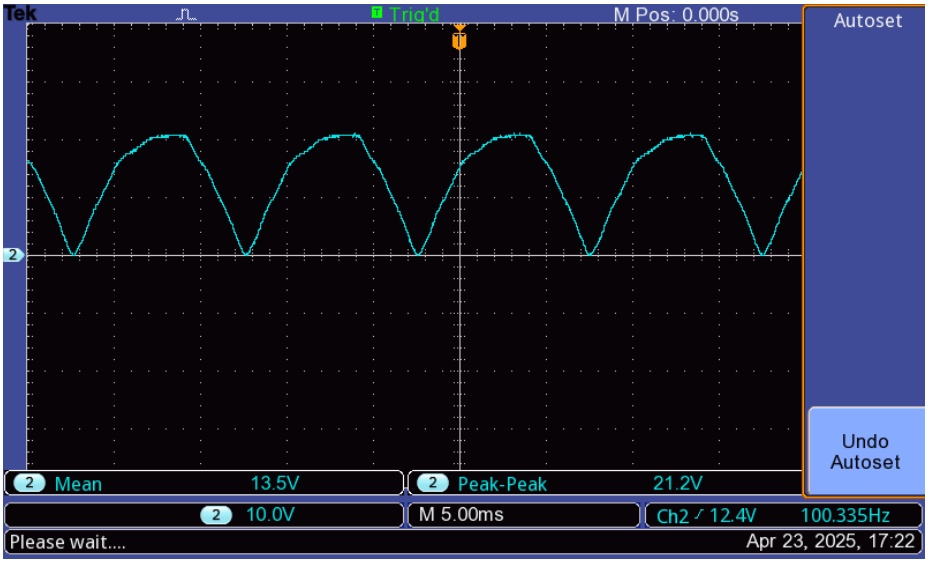


Figure 3: Full wave rectifier output voltage signal

References

[1] M. H. Rashid, *Power Electronics: Circuits, Devices, and Applications*, 4th ed. Pearson, 2013.