

Objective

This lab was designed to teach the students how diodes work. The lab showed the students that diodes only allow current in one direction, require a certain voltage before they function, and that they can be simulated with an additional power supply and resistor.

Equipment Used

- Diode
- LED
- Wire
- Power Source
- Kiethley Curve Tracer
- Bread Board
- DMM
- Resistors

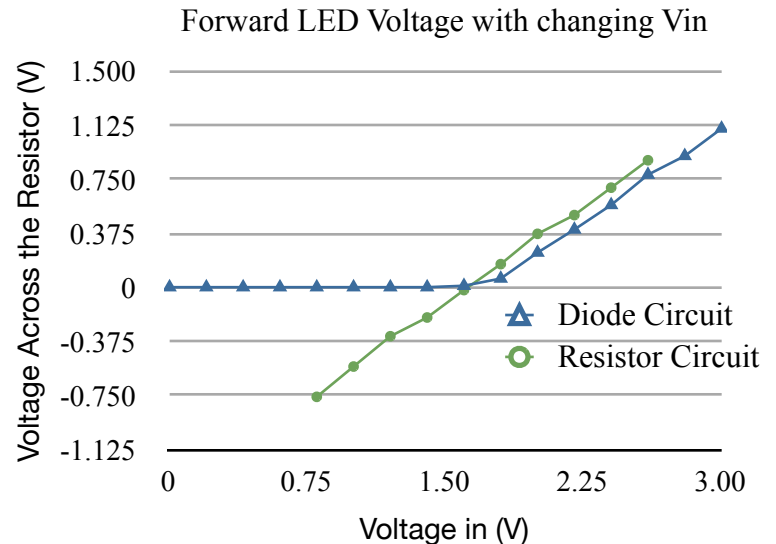
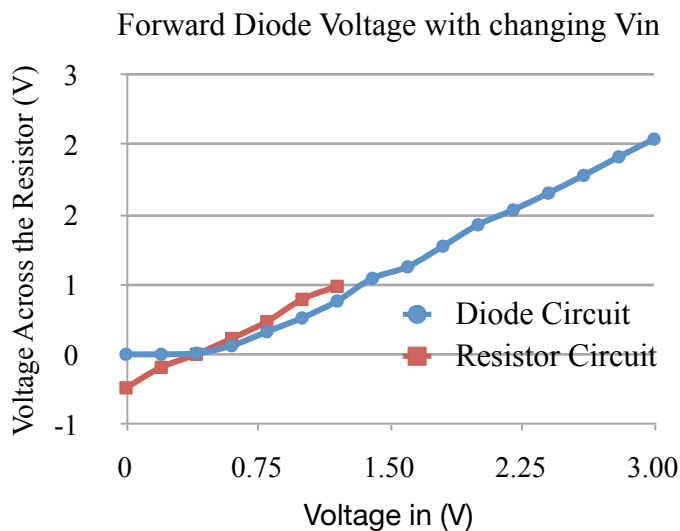
Brief Theory

Using the Curve Tracer we can determine the threshold voltage of the diode then we should be able to simulate that diode using another power supply and a resistor. Comparing the graphs of the two circuits will prove or disprove our theory.

Procedure

- Run Curve tracer with diode
- Calculate the threshold voltage
- Build the circuit
- Run the test at .2V intervals
- Record data
- Graph
- repeat steps 1-6 for LED

Results



Inferences

As both graphs show the diode was able to be simulated, with a second power source and a resistor, within a range of voltages outside of that however the voltage across the resistor would either be negative or would begin to behave differently than the circuit with the actual diode. This did prove the theory that the lab was teaching, but also showed how real life can differ from theoretical. The lab was straightforward and easy to follow and understand there is nothing I would change about it.

Experiment 2

Diode Models

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