



اسم المادة: الكترونيك
اسم التدريسي: ضحى علي طالب
المرحلة: الثانية
السنة الدراسية: 2023-2024
رقم التجربة: 2
عنوان التجربة: Connect the diode



Objectives:

To study the characteristics of the forward and reverse biased junction diodes.

Apparatus:

1. AC power.
2. Diode.
3. Resistor $1K\Omega$
4. Led

Theory:

The diode is a device formed from a junction of n-type and p-type semiconductor material. The lead connected to the p-type material is called the anode and the lead connected to the n-type material is the cathode. In general, the cathode of a diode is marked by a solid line on the diode. The primary function of the diode is rectification. When it is forward biased (the higher potential is connected to the anode lead), it will pass current. When it is reversed biased (the higher potential is connected to the cathode lead), current flow is blocked. A current flow in the forward direction is very large compared with that in the reverse direction and such a device is very useful as a rectifier. The diode is in the forward direction when an external battery is connected with positive terminal to the (p) region and negative terminal to the region (n). The reverse current through the diode varies greatly with temperature and with the semiconductor material used.



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Procedure:

1. Connect the circuit as shown in Figure (1) using silicon diode.
2. Connect the LED to the electrical circuit and connect it after the diode
3. Notice the Led worked, and here is the forward circuit
4. Change the direction of the diode as in the figure, the LED does not work and this is the reverse circuit.

Note:

For the reverse c/cs of (Si) diode the reverse current is very small compare with the current of (Ge) diode, so it assumed to be zero.

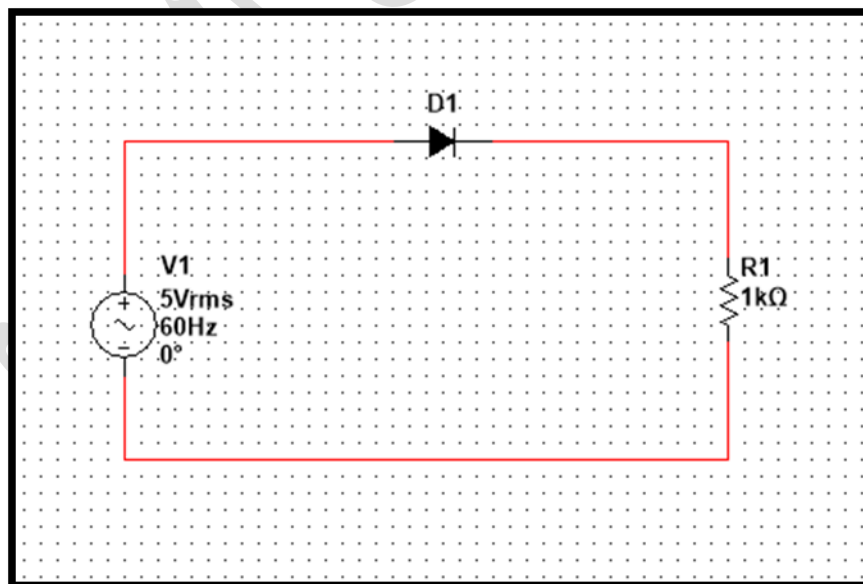


Fig.1 Forward circuit

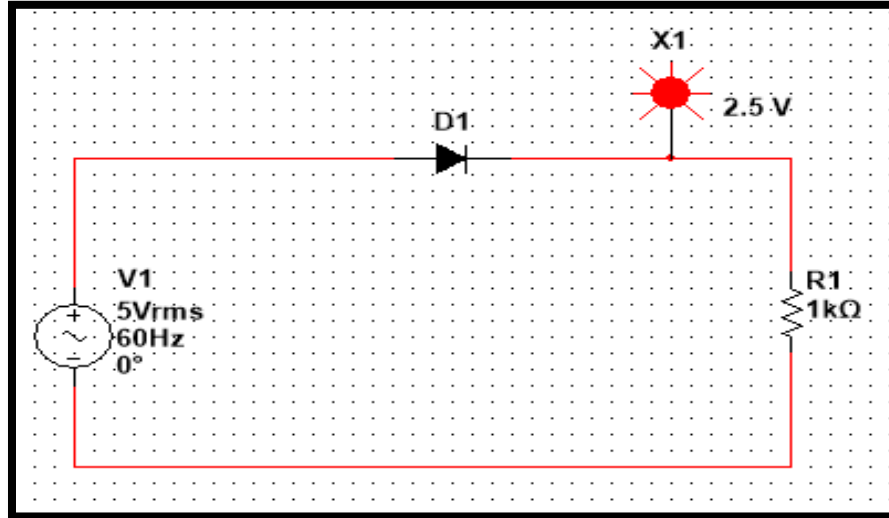


Fig.2

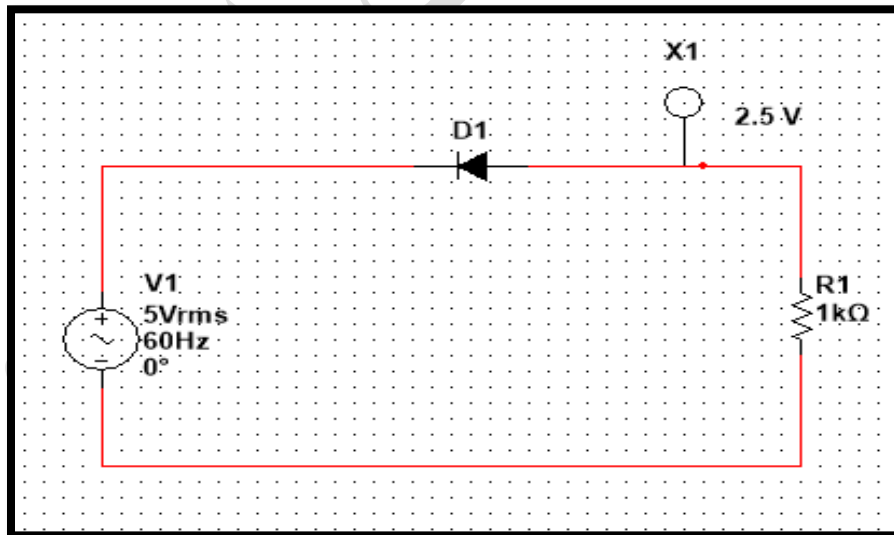


Fig.3 Reverse Circuit