

Zener Diode Characteristics

Spoken Tutorial Project

<https://spoken-tutorial.org>

National Mission on Education through ICT

Spoken Tutorial & FOSSEE Team

IIT Bombay

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Learning Objectives



Learning Objectives

We will learn about



Learning Objectives

We will learn about

- **Voltage-Current(V-I) characteristics of Zener diode in forward and reverse bias**



System Requirement



System Requirement

- **Ubuntu Linux 20.04 OS**



System Requirement

- **Ubuntu Linux 20.04 OS**
- **CircuitJS Application**



Pre-requisites



Pre-requisites

To follow this tutorial, you should have basic knowledge of

- **Electrical Circuits**



Zener Diode



Zener Diode

- Zener diode is a specialized semiconductor device



Zener Diode

- Zener diode is a specialized semiconductor device
- It is designed to operate in the reverse breakdown region



Zener Diode



Zener Diode

- It maintains a constant voltage in reverse bias, also called as zener voltage



Zener Diode

- It maintains a constant voltage in reverse bias, also called as zener voltage
- It is used as a voltage regulator and to protect electronic circuits



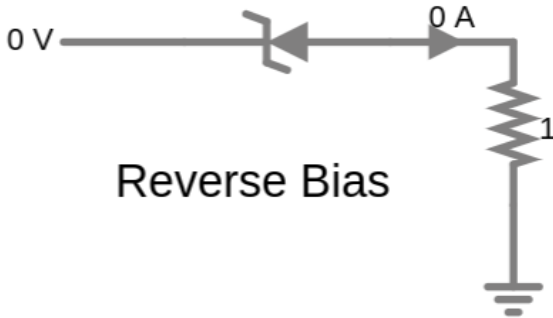
Zener Diode



Zener Diode Forward Bias



Zener Diode Reverse Bias



Silicon - Zener Diode comparison



Silicon - Zener Diode comparison

- Silicon diodes allow the current flow in one direction
- zener diodes allow the current to flow in both directions



Silicon - Zener Diode comparison



Silicon - Zener Diode comparison

- Silicon diodes are designed to work in forward bias
zener diodes are intended to work in reverse bias



Silicon - Zener Diode comparison



Silicon - Zener Diode comparison

- Silicon diodes are used as rectifiers in electronic circuits
- Zener diodes are used in voltage regulator circuits



Summary

In this tutorial, we learnt about

- **Voltage-Current(V-I) characteristics of Zener diode in forward and reverse bias**



About the Spoken Tutorial Project

- Watch the video available at https://spoken-tutorial.org/What_is_a_Spoken_Tutorial
- It summarises the Spoken Tutorial project
- If you do not have good bandwidth, you can download and watch it



Spoken Tutorial Workshops

The Spoken Tutorial Project Team

- Conducts workshops using spoken tutorials
- Gives certificates to those who pass an online test
- For more details, please write to contact@spoken-tutorial.org



Answers for THIS Spoken Tutorial

- Questions in THIS Spoken Tutorial?
- Visit <https://forums.spoken-tutorial.org>
- Choose the minute and second where you have the question
- Explain your question briefly
- The Spoken Tutorial project will ensure an answer



Acknowledgements

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Thank You

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