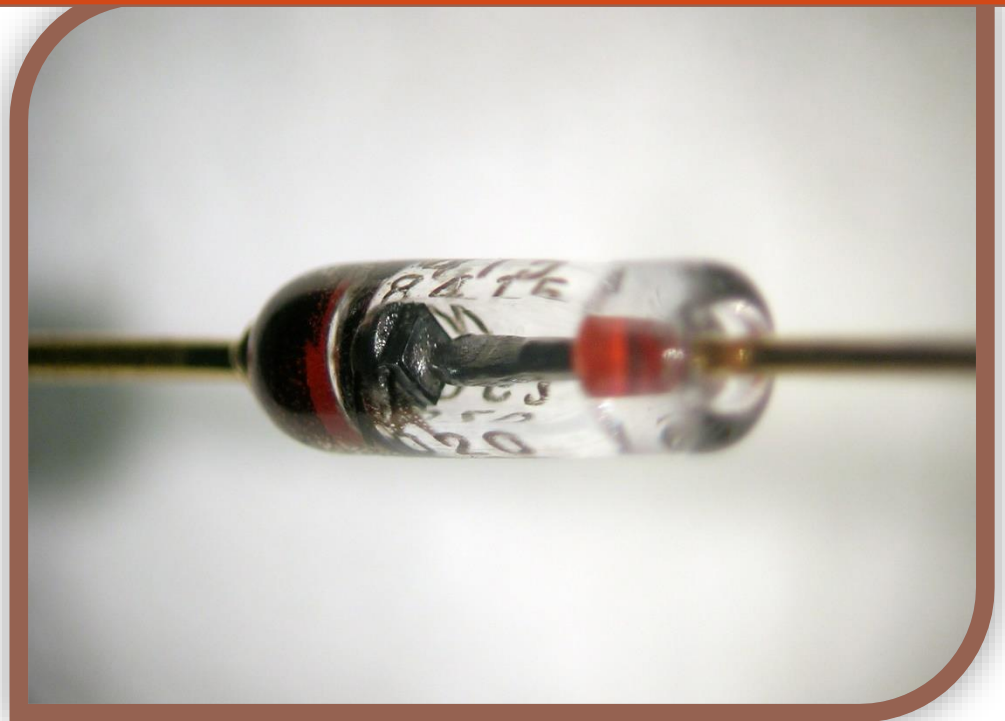


## COMPONENTS – The Diode



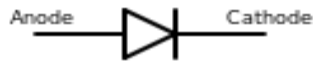
Exploring the “Diode”

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## What is a diode?

A diode is a component which only allows current to flow in one direction. It is like the one way street of electronics!

## What is the schematic symbol for the diode?



The schematic symbol is quite straightforward. Note that different types of diodes will have slight variations of this, you will learn to read them quite easily. By teaching you the basic symbol, you should rapidly recognize any type of diode – a quick google search for “types of diodes” will clear up any remaining doubts.

## How do I tell its value?

Diodes are a different type of component to resistors and capacitors. They do not have “values” as much as they have part numbers. You would use a part sheet to find a component with values that you wanted, then order that part number.

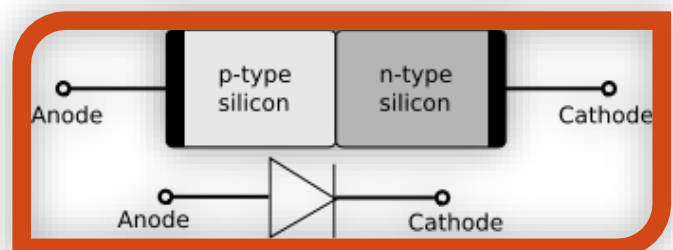
Because of their one-way behavior it is important to know which way to place it in your circuit! The diode will have a black band on one end of the glass tube. This band represents the “forward” direction or “cathode”. The direction you mount the diode will depend on its intended function. Follow instructions closely.

## What are some common uses?

They can be used in a rectifier circuit to turn AC to DC power, as well as a crude temperature sensor, as well as protection from spikes etc in zener diodes. They can be used to drop a known amount of voltage, as well as many other uses, they are quite diverse.

## What are diodes made of?

Diodes are usually made of silicon, with a glass enclosure and metal leads. They have a p-n junction, which is the term used to describe the place where 2 different semiconductor materials meet (p type and n type), inside a single crystal. See the image for an example.



## How do diodes work?

Diodes work by various methods depending on their type, and there are quite a lot of diodes. These are somewhat specialized components in such a way that, if you need one you will know what one you need...and if you don't know if you need one – you don't need one.

Certainly feel free to google and read about diodes, and pay special attention in project builds and circuits that you are making, to read the documentation as to why they are using that type of diode. Before you know it you will be fluent in electronics jargon!

## Example Use:

You may want to ensure a low voltage device cannot be damaged by reverse polarity. In this case you would use a diode to act as a one – way valve, blocking all current until the power source is reversed.

## Useful Resources etc:

As always we will add Wikipedia, feel free to [E-Mail](#) me with good resources you find. If it is clear and easy to understand you might just find yourself and your tip in the next version of this guide!