

Zener DC-to-DC Converter

Procedure

Some devices (for example, the ultrasonic sensor in your kit) are designed to work with a maximum voltage supply below the 9-volts that you have in your kit. This exercise will allow you to complete a design for a 9-volt-to-5-volt dc converter. The end result will be something that behaves much like a 5-volt battery although with a higher effective resistance than the original battery.

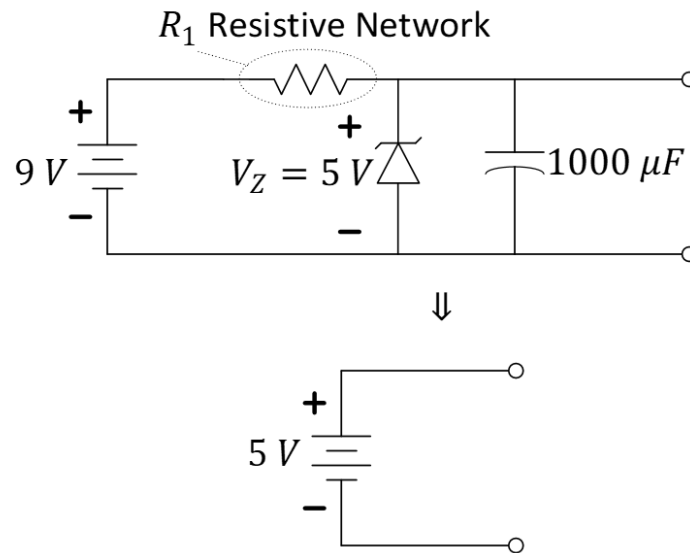


Figure 1: A 9VDC-to-5VDC Zener-regulator circuit (top schematic).

For a non-design version of this device, just use a 220 Ω resistor for R_1 . It may be non-ideal but will be suitable for many needs.