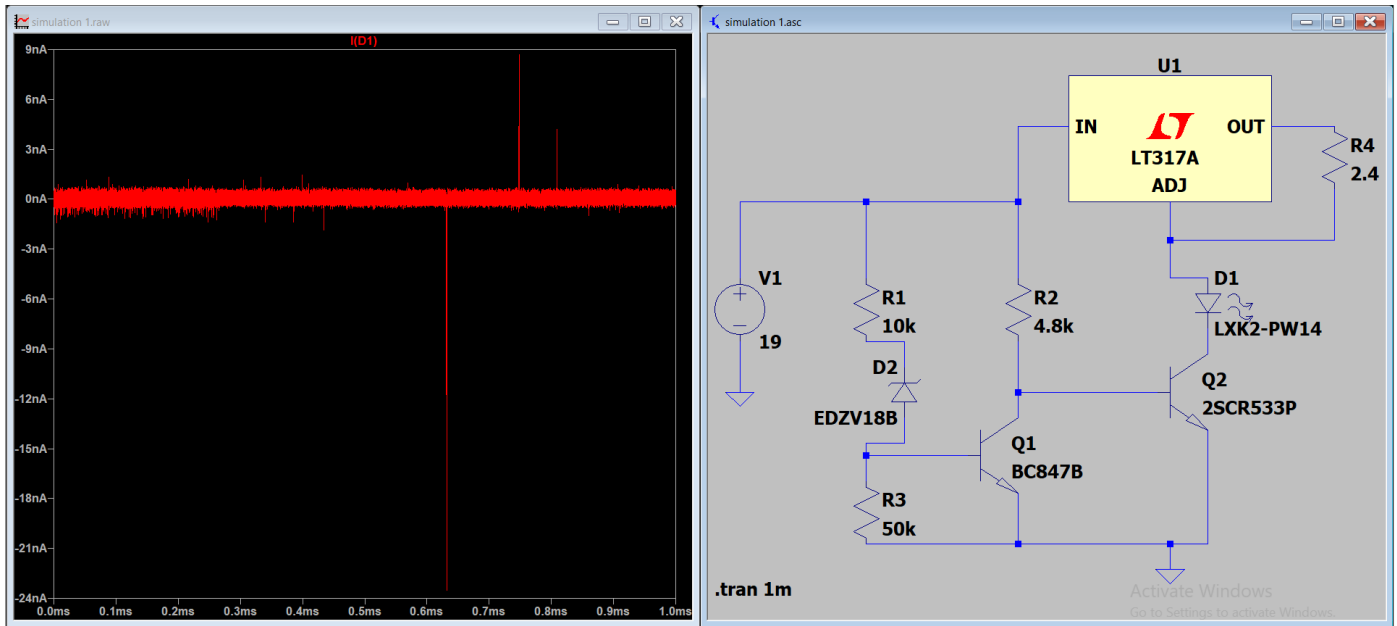


# Overvoltage protection circuit

## Using NPN:



In this case we connect the BJT as low side switching.

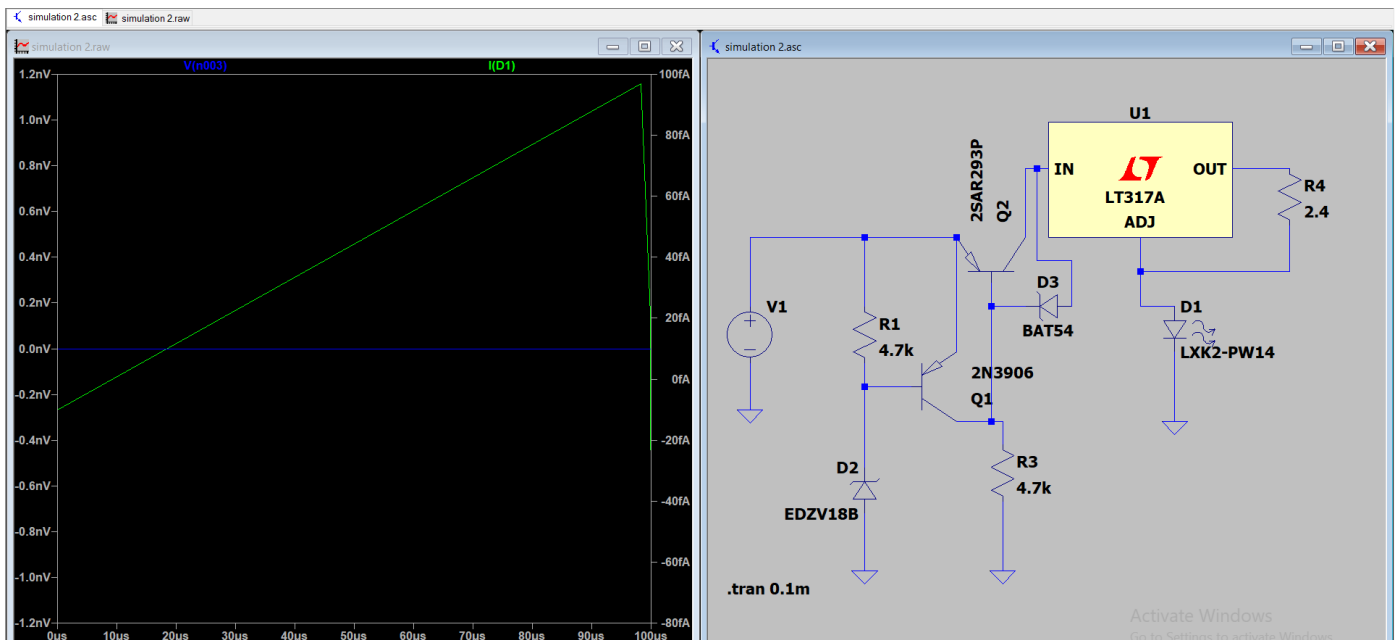
We control the load by transistor Q2 which is controlled by transistor Q1. The Zener diode controls the state of transistor Q1.

The key in this case is the Zener voltage. When the input voltage is less than the Zener voltage, Zener acts as an open circuit so transistor Q1 becomes open and transistor Q2 acts as a closed switch so the load becomes connected.

When input voltage is greater than Zener voltage, Zener acts as a closed switch so transistor Q1 also acts as a closed switch which disconnects transistor Q2, so the load becomes disconnected.

[Click here for video link](#)

## Using NPN:



In this case we connect the BJT as high side switching.

We control the load by transistor Q2 which is controlled by transistor Q1. The Zener diode controls the state of transistor Q1.

The key in this case is the Zener voltage. When the input voltage is less than the Zener voltage, Zener acts as an open circuit so transistor Q1 acts as a closed-circuit switch and transistor Q2 acts as a closed switch so the load becomes connected.

When input voltage is greater than Zener voltage, Zener acts as a closed switch so transistor Q1 also acts as an open switch which disconnects transistor Q2, so the load becomes disconnected.

[Click here for video link](#)