

Regulator and LED circuit Test Plan

Team 14418

Goal: The aim of this testing is to assemble a prototype of the circuit, then test each portion of the circuit separately. The circuit should be able to limit the output voltage at 15V. It should also turn 1 LED on at 13.1V and turn the 2nd on at 15V. All three of these functions will be tested

Test Plan:

First the regulation portion of the circuit will be tested. This will be done by using an input voltage of 10V, 15V, and 20V. If the regulator outputs 10V, 15V, and 15V respectively, then it will be a successful test. If any of the 3 outputs is incorrect, the entire test must be seen as a failure.

Next, the LED that turns on with an input voltage of 13.1V is tested. An input voltage of 10V, 12.8V, 13.0V, 13.1V, and 15V will be used and the response of the LED will be observed and recorded. It will be deemed acceptable for the LED to dimly turn on at 13.0V even though the goal is 13.1V. But, if the LED turns on at 12.8V or less, the test will be considered a failure.

Finally, the second LED will be tested. This LED is designed to turn on at 15V. Input voltages of 14.5V, 14.8V and 15V will be used. It will be deemed acceptable if the LED turns on dimly for an input of 14.8V. If the LED turns on for the 14.5V input, the test will be considered a failure.

Note that all input voltages will be provided via a power supply rather than the crank being used in the project. This is to ensure a precise voltage.