EXPERIMENT 4

TRANSISTORS

4.1 Objectives

In this experiment, transistors will be examined, features of transistors will be identified and study principles of these equipment will be examined.

4.2 Equipment List

1. Multi-meter
2. Transistors (BC557, BC547)
3. Resistors

4.3 Preliminary Work

1. Find datasheets of BC557B and BC547 transistors. Research how to identify transistor terminals, how to test transistor is good or bad, how to test transistor with digital multi-meter.
2. Draw a schematic showing the terminals of transistors.

4.4 Experimental Procedure

1) In this step, the transistor will be tested on the diode test mode of the multi-meter.

a) Pick one of the transistors given to you

b) **<u>In diode mode of digital multimeter,</u>** connect the one of the probes to one of the transistor legs. When the one of probes is stable on the one of transistor legs and other probe should be contact with the other legs of transistor. If the value is read on the multi-meter screen, stable leg of the transistor is base terminal.

c) To find base terminal, the black probe is on the base terminal, type of transistor is PNP. If the red probe is on the base terminal, type of transistor is NPN.

d) After you identify the base terminal, variable probe should contact with other legs of transistor. Record which leg of transistor has bigger value because this terminal is emitter terminal and reading value on multi-meter is V_{BEon} value.

V_{BEon}: ……

Other leg that has small value is collector terminal and reading value on multi-meter is VCEon value.

V_{CEon}: ……

e) When the small value is substracted from the big value that is found in step b, result value is V_{CEsat} for transistor.

V_{CEsat}: ……..

2) Repeat step 1 to identify the terminals of the second transistor.