Polarity Cum Continuity Tester

PROJECT COMPUTER TECHNOLOGY

Frankline Odero [ADM] CI/00050/014 | CCT 405 | September 22, 2017

Introduction

Many times it happens that people are not able to discover the polarity of any component and thus they end up mounting them wrong in the m wrong in the circuit which leads to damage of the component or may be the entire circuit.

For this reason, we need a continuity tester, a continuity tester is a device which tests the continuity of a wire at hand. As quoted: "It is an indispensable tool to check broken wires and undesired shorting of wires." More to that, this circuit is able to test the continuity of a circuit along with the polarity of the components. Therefore, the polarity of lots of components such as diodes, LED comprises Zener diode as well as infrared LED can be tested with the help of this very simple circuit.

Objectives

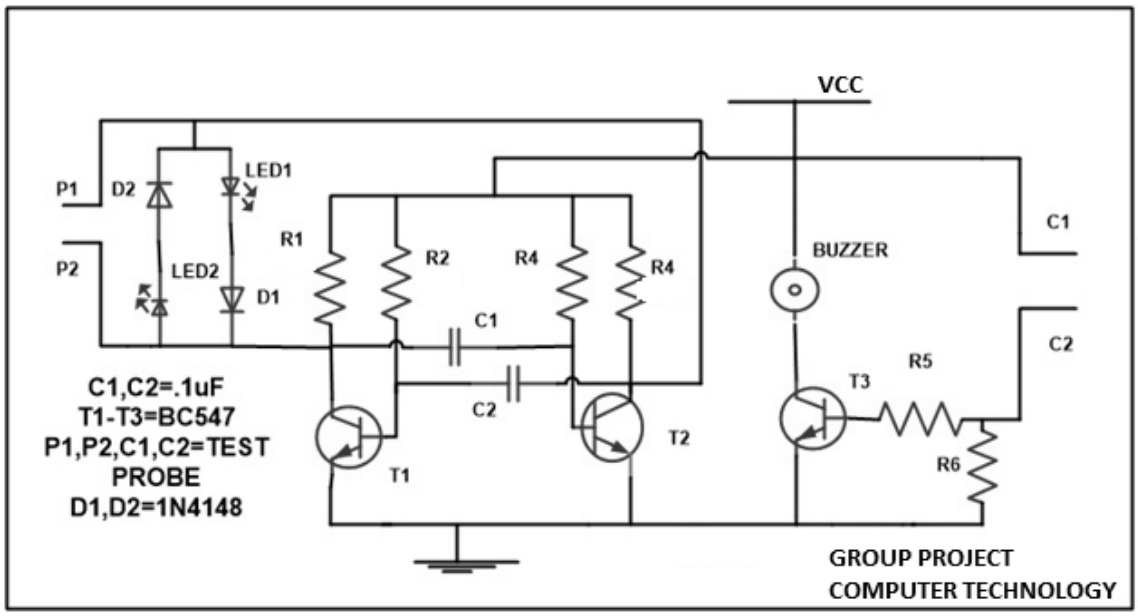
- To make a circuit(tester) that is able to check discontinuity of wires. Many a times when we are connecting the components on the printed circuit board or the bread board, there is always a possibility of the components to get attached due to defects in the printed circuit board or bread board or due to the mistakes which we may commit while assembling the circuit. What so ever the case is, the continuity tester helps us to debug our circuit with ease.
- Making a simple continuity tester with low cost hardware implementation without compromising on the performance of the device

Circuit Components

Components	Ratings	Quantity	Model
Resistors	820E 33K 270E 1M	2 2 1 1	Generic
Diodes	1N4148	2	Generic
LEDs(Light Emitting Diodes)	Vf=1.83V @ 20mA (Red LED)	2	Generic
Capacitors	1µF	2	Generic
Transistors	BC548B(NPN)	3	BK206
Buzzer/Speaker	24V	1	Generic
DC Power Supply	10V	1	HY3005D-3

Jumper Wires		Several	Generic
Breadboard		1	

Circuit Diagram:



Method:

Both the LEDs start to glow by default when the circuit is powered. Thus connect in any manner the components which you want to test with the probe. Glowing of any LED is in this circuit is the indicator of the cathode terminal. The probes are used to test the component's polarity.

If **LED1** start glowing it means that the **cathode side** of the component is coupled to the **probe 1** and if **LED2** start glowing it implies that the **cathode side** of the component is coupled with **probe 2**.

Checking for the **continuity of the circuit** coupled the circuit with the polarity cum continuity tester circuit with the help of **probe C1 and C2** provided in the circuit. A sound of the buzzer will start when both the probes are attached to each other it means that your circuit is in proper working condition.

Circuit Features/ Advantages

1. Easy installation
2. Low maintenance
3. Compact elegant design
4. Consumes very little energy(<10V)