

Lie Detector Circuit

For Beginners



INTRODUCTION

The concept behind this Lie Detector Circuit is that, we assume when a person lie he kind of pumps up his anxiety level which makes him sweat and develop moisture on his skin. We then use this piece of circuit to detect if there is moisture on his skin and based on the result we glow and LED, a green one for truth and red for lie. Of course yes this cannot be claimed as a lie detector, but you can use this to play with your friends and have fun.



SPECIFICATION

Input Voltage (V)	9V
Operating Current (A)	100mA
Transistor	BC548

DESCRIPTION

In this circuit the resistor R6 is assumed to be the resistance of the finger. When no finger is placed the value of resistor is infinity. So simulate that condition Lets take the value to be 99999K.

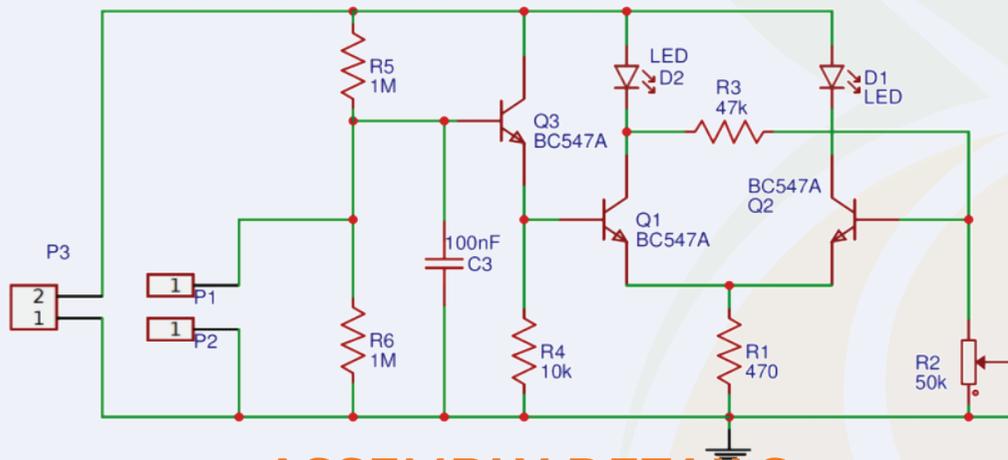
The green LED has turned on when no finger is placed because, the base voltage of Q1 and Q2 is around 3.2 voltage and hence the transistor is on making the Green LED to glow. At the same time since the Transistor Q2 is turned on, the base voltage across the transistor Q3 drops to be around 1.4V which will keep the transistor Q3 in off and hence the Red LED is turned off.

Now let's assume we have placed our finger across the resistor R4 and hence the value of R6 falls to 50 ohms. This will affect the value of resistor R4 and hence the red LED glows. Now the voltage drop across resistor R4 is less and hence the base voltage of Transistor Q1 and Q2 is almost 0V as shown above. This will keep them turned off and thus the Green LED will not glow. But since the transistor Q2 is off the entire supply voltage gets divided between the resistor R1 and base of Q3. This makes the base voltage of Q3 to be 3V which is enough to turn it on. You can fine tune the base voltage a bit more by using the potentiometer also. If the transistor Q3 is turned on the Red LED will also glow.

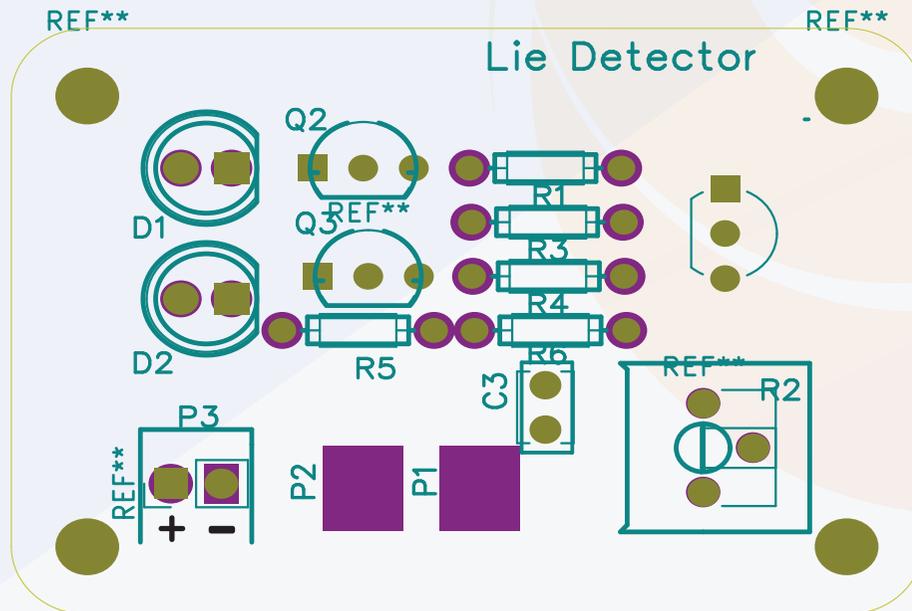
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CIRCUIT DIAGRAM



ASSEMBLY DETAILS



BOM

1	BC548	3	Q1,Q2,Q3
2	1M resistor	1	U2
3	10K resistor	1	R1
4	470 resistor	1	D1
5	47k resistor	1	D1
6	Green LED	1	D2
7	Red LED	1	D2
8	50K Pot	3	R1,R2,R5
9	100nf Capacitor	1	R3,R9

APPLICATIONS

To detect if person is telling lie.