

Music Rhythm Led Dancing Light



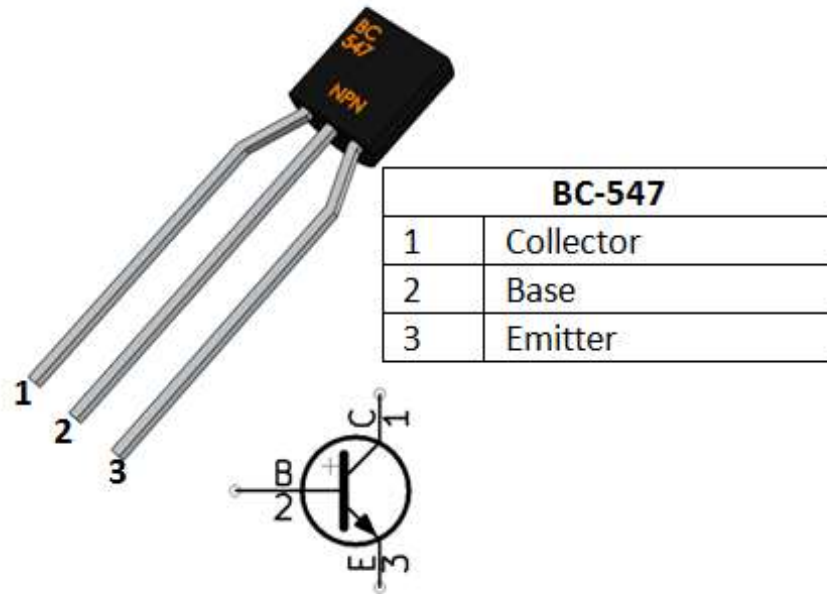
Microphone

- A **microphone** is a device that captures audio by converting sound waves into an electrical signal. This signal can be amplified as an analog signal or may be converted to a digital signal, which can be processed by a computer or other digital audio device.
- Vibration of the diaphragm causes surrounding components of the **microphone** to vibrate. Conversion of these vibrations is delivered as an audible signal.



BC547

BC547 is a NPN transistor hence the collector and emitter will be left open (Reverse biased) when the base pin is held at ground and will be closed (Forward biased) when a signal is provided to base pin.



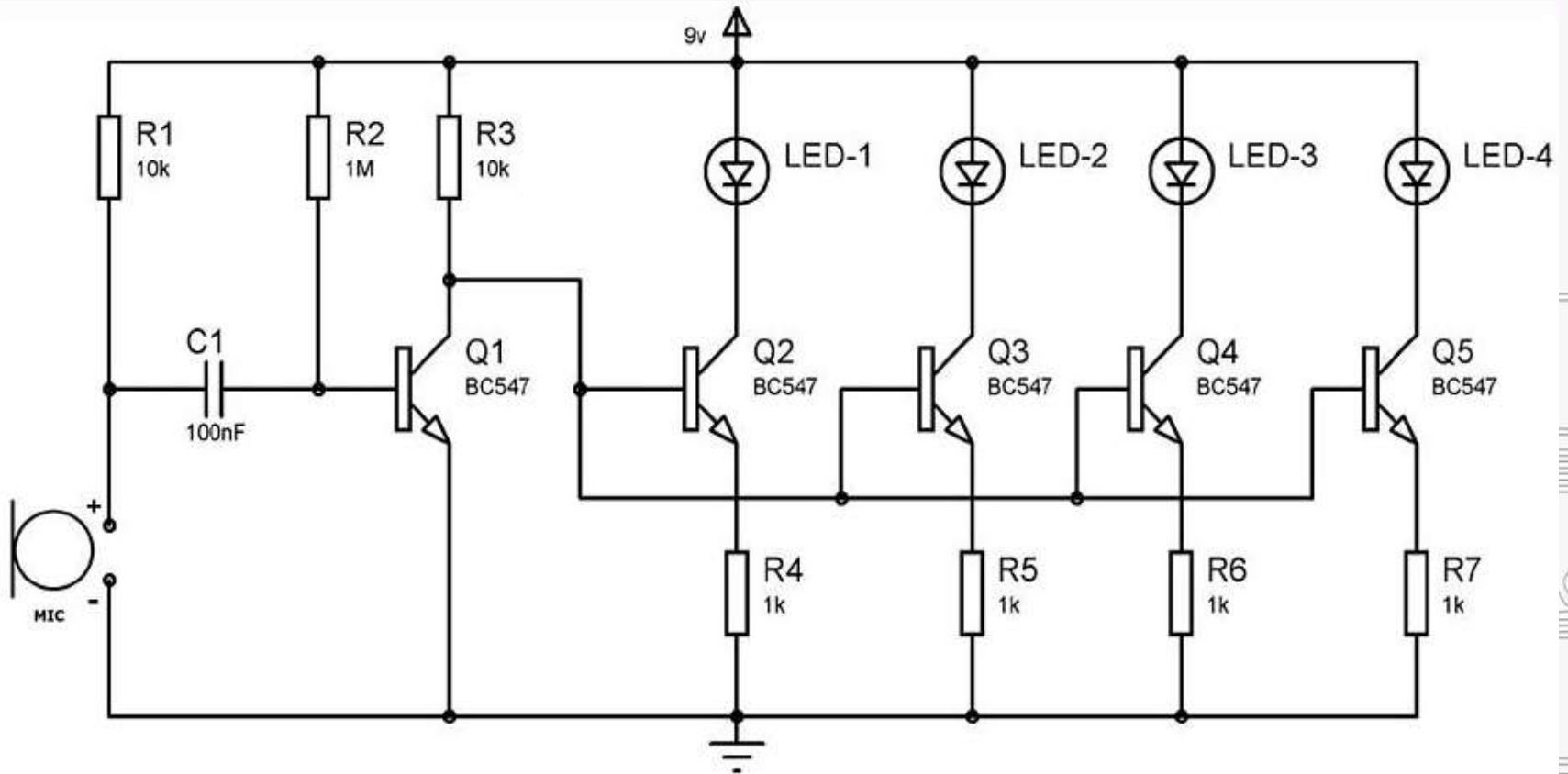
About Project

In this project we are going to show you how to make Music rhythm LED flash light using LEDs & Transistors. You might have seen the Disco Lights or DJ lights or light during a function that turn ON and OFF according to the beats or rhythm of the music. This Music rhythm LED flash light circuit is based on transistor BC547. This circuit is very simple and easy to build, it just requires few basic components.

Components

- Zero PCB
- Soldering Machine
- Soldering Wire
- Microphone
- LED
- Resistors 10k, 1M, 1k
- Transistors BC547
- Capacitor 100nf
- 9v battery
- Battery connector

Connection Diagram



Working of project

In this Music rhythm LED flash light, condenser mic picks up the sound signals and converts them into voltage levels. These voltage signals are further fed into R-C filter or HIGH PASS filter (R₂ and C₁), to eliminate the noise from the sound. Further a NPN transistor (Q₁- BC547) is used to amplify the signals, from the High Pass filter. Then finally these music signals are given to the array of four transistors. Transistor in this array works as amplifier, and glows the four LEDs according to the sound pattern. This generates a very interesting sequence of dancing LEDs which follows the beats as per their intensity or pitch. We can also add more LEDs with transistor.

Future Scope

- The future scope of this project would be to design a mechanism that would be helpful in music therapy treatment and provide the music therapist the help needed to treat the patients suffering from disorders like mental stress, anxiety, acute depression and trauma.
- The proposed system also tends to avoid in future the unpredictable results produced in extreme bad light conditions and very poor camera resolution.



Project Link : https://youtu.be/C1-a_zR0I-o