

IR HEADSET

Description.

Here is a simple IR headphone circuit that is suitable for listening to TV or radio without disturbing others. For beginners the IR headset is a better option than FM headsets because they often produce desirable sound quality without tuning as well as difficult impedance matching that is often done in radio circuits which is difficult for beginners.

Transmitter.

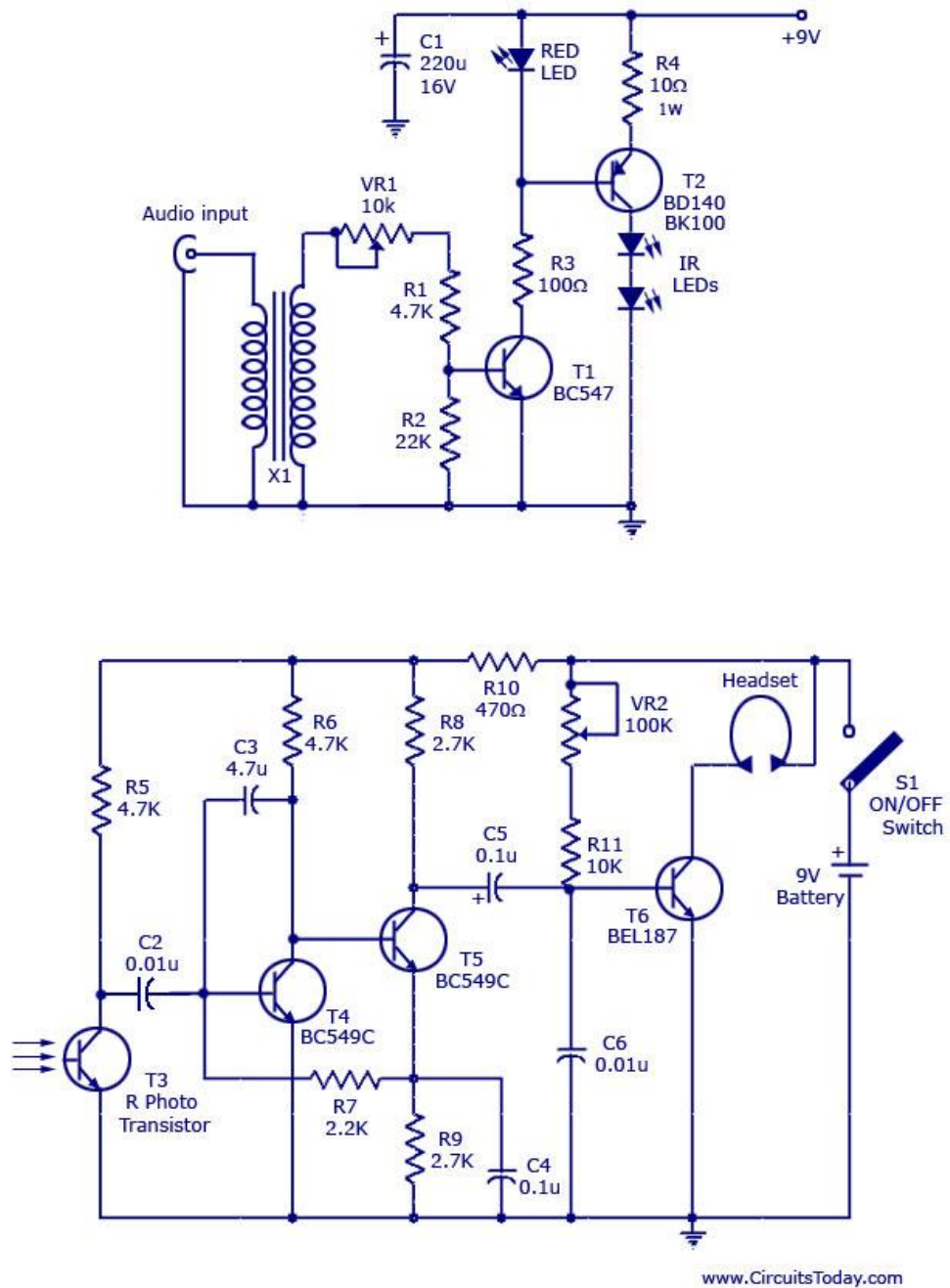
The audio signal is coupled to the base of T1 (BC547) by an audio transformer. The T1 pre-amplifies the signal. The transistor T2 (BD 140) drives the IR LEDs which transmit the sound as IR beams. The red LED provides fixed bias for the T2 as well as a power-on indication. The transmitter has a 5m range under normal conditions. A 9V battery can be used to power the transmitter.

Receiver.

The photo transistor T3 receives the IR signals. The collector of T3 is connected to the base of T4 (BC548) which amplifies the signal together with T5 (BC549) to regain the audio signal transmitted. The transistor T6 drives the headphone to reproduce the sound. The receiver can be powered by using a 9V battery.

Circuit diagram with Parts list.

Infrared (IR) Headphone Circuit



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Notes.

- The audio transformer can be easily obtained from a old transistor radio. It should be connected with the low impedance winding (thicker) to the audio input (TV or radio) side.
- The presets VR1 & VR2 can be adjusted for improving clarity.

Source: <http://www.circuitstoday.com/ir-headset>