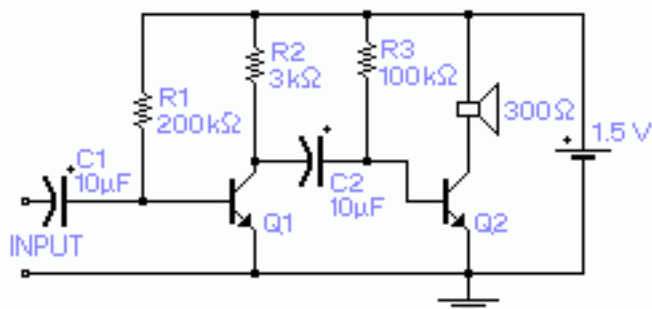




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## One Transistor Audio Amplifier Useable for Crystal Detector Radio

OddMix.com - Transistor Technology Note - TTN0803 - Karl Nagy



**Figure 1.** shows the schematic diagram for a very simple one-transistor audio amplifier stage that is useable by itself or with a [crystal detector radio](#). This amplifier has only five components, counting the small 300 Ohms headphones or a small speaker and the 1.5-Volt power cell.

**Figure 1.** Two Transistor Audio Amplifier

C1 and C2 is a good quality, low voltage electrolytic capacitor. It separates the input signal from its DC components. Q1 and Q2 is a small signal, silicon, NPN, general-purpose [transistor](#). The transistor is biased into its active region with a quiescent collector current (current without signal) of approximately to 0.5 to 1 mA. A three Ampere-hour AA size alkaline cell is capable to provide this current for longer then three thousand hours! A higher gain silicon transistor is preferable, but if that is not available a germanium is also useable. The 300 ohms speaker may be substituted with an eight ohms speaker removed from an old [transistor radio](#) along with its output transformer.

This circuit amplifies the input signal about ten times, and allows higher volume radio reception without using much power. A crystal detector radio - like the [high performance crystal radio set](#) - outfitted with this amplifier produces a louder, audio signal than it's usual output. It does that, however, at the expense of some extra work and components. Current consumption is so low, that a battery lasts almost as long as its shelf life. For operating convenience, add an optional power switch.

### Parts list for this one transistor audio amplifier:

- C1, C2 - [Electrolytic Capacitor](#) 10 uF 6-10 VDC
- R1 - [Resistor](#), 200 K, 1/4 Watt Carbon
- R2 - [Resistor](#), 3 K, 1/4 Watt Carbon
- R3 - [Resistor](#), 100 K, 1/4 Watt Carbon
- Q1, Q2 - [Transistor](#), NPN, silicon general purpose
- [1.5 Volt cell](#) - an AA alkaline is fine
- 300 Ohms headphones or small [speaker](#)



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