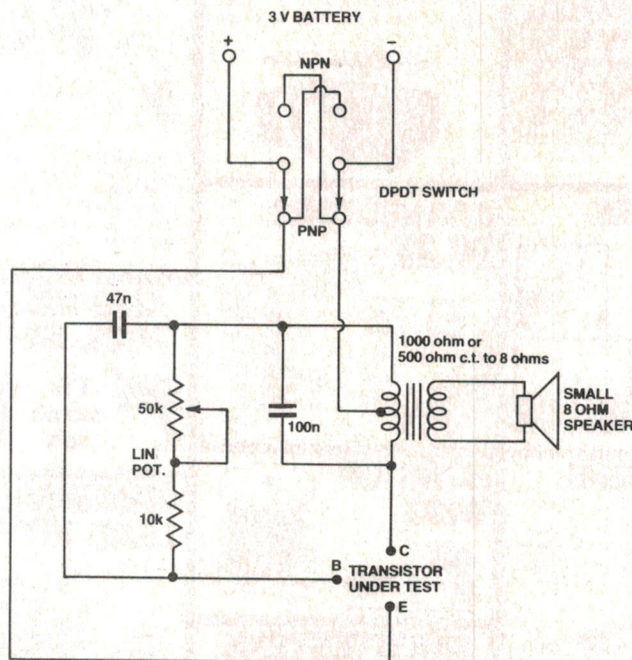


Ideas for Experimenters

These pages are intended primarily as a source of ideas. As far as reasonably possible all material has been checked for feasibility, component availability etc, but the circuits have not necessarily been built and tested in our laboratory. Because of the nature of the information in this section we cannot enter into any correspondence about any of the circuits, nor can we produce constructional details.



Quick transistor checker

This simple little circuit is quite effective for testing bipolar transistors, being a favourite of **Agostino Greco of Clayton in Victoria**, who has used it over the last few years.

The circuit is a basic Hartley oscillator using a centre-tapped audio output transformer of the type commonly found in small transistor

radios, driving a small 8 ohm speaker. The latter is a common item, stocked by many suppliers, or you can salvage one from a defunct transistor radio. You could salvage a suitable transformer from a defunct radio also, or you could obtain one of the models stocked by Tandy (catalogue No. 273-1380) or Dick Smith (catalogue No. M-0216).

A 50k potentiometer provides a means of varying the tone of the

oscillator, from a low frequency at high values of resistance to higher frequencies at lower values of resistance. The series resistor is provided to limit the high frequency range, as otherwise the circuit may cut off, depending on the particular transistor being tested, and further to limit the maximum current drawn by the circuit to a value well under 50 mA at full setting of the potentiometer.

The two capacitors are in no way critical and serve to set the frequency of operation of the oscillator. They have been chosen to give a pleasing tone with a 50k potentiometer. Increasing the value of either capacitor will result in a decrease in the frequency of the oscillator.

In use, the transistor to be tested is connected to the circuit via crocodile clips. If there is no response from the circuit, then the polarity change switch should be toggled, and hopefully there will now be a tone output from the speaker. If there is no result with the switch in either position, then the device is faulty; alternatively it may be an FET, UJT or SCR, etc, type device, in which case this tester will be of no use.

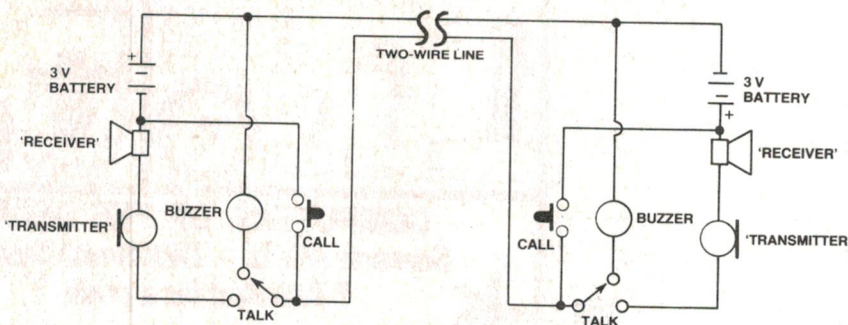
Note that there will be no harm done to a transistor if it is initially connected up to the circuit with the polarity switch in the wrong position, as it will be reverse biased and hence will draw only small leakage currents.

The simplest intercom

This is just about the simplest intercom one could devise, according to **David Timmins of Pullenvale in Queensland**. Its big advantage is that only a two-wire line is required.

The 'receiver' and 'transmitter' may be salvaged from 'surplus' telephone handsets. The transmitter unit is a carbon microphone and the receiver unit is a rocking armature earpiece. Any of the small electronic or electro-mechanical buzzers available may be pressed into service. Dick Smith stocks one, catalogue No. L-7009, while Tandy

list several suitable types, such as catalogue Nos. 273-004 or 273-060. Pressing either 'call' button will sound both buzzers.



Each 'talk' switch should be a spring return-type. If you can arrange to hang the handset off them, so much the better.