FUTURE KIT

HIGH QUALITY ELECTRONIC KITS

TELEPHONE PRIVACY PROTECTION
CODE 319 LEVEL 1

This circuit is suitable for home or official telephone line which has many telephone with the same phone number. Whenever 1 set of telephone is used or firstly picked up, the circuit will automatically cutting other lines off and circuit wil be used till the connected line free.

Technical specifications:

- no need power supply

- display : 2 LED's used/unused indication for each telephone

- this circuit is connected parallel with the telephone line.

- PCB dimensions : 2.02 x 1.68 inches.

How to works:

Each circuit is separately controlled. It does not work under normal condition when no one pick up the line up due for the current does not flow through the line. When first line is picked up, current flow through TR1, R1 to ZD1 to D3 to twisted-pair line. So TR1 is conducting current and the emitter of TR1 gets high voltage and then transfer to the base of TR2 through R3 caused TR2 conducts current. While TR1 and TR2 sustain current, twisted-pair line's voltage is deducted to 6-10 volts caused ZD1 to stop conducting current. However, TR1 and TR2 still sustain current caused line 1 circuit connected. If line 2 is picked up, ZD2 cannot conduct current because twisted-pair line voltage is less than zener voltage. As TR3 and TR4 do not work, line 2 is not connecting with twisted-pair line. But if line 2 is firstly picked up, ZD2 will prior conduct current, so TR3 and TR4 connect to the line 2 directly and line 1 cannot be sed as well.

PCB assembly:

Shown in Figure 3 is the assembled PCB. Starting with the lowest height components first, taking care not to short any tracks or touch the edge connector with solder. Some tracks run under components, and care should be taken not to short out these tracks. All components with axial leads should be carefully bent to fit the position on the PCB and then soldered into place. Make sure that the electrolytic capacitors are inserted the correct way around. The LED has a flat spot on the body which lines up with the line on the overlay. Now check that you really did mount them all the right way round!

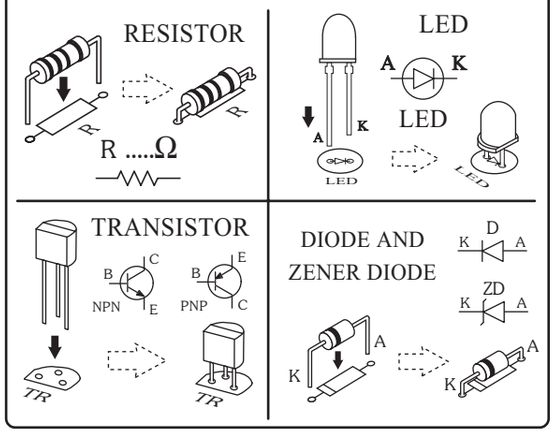
Testing:

Connect all component following figure 3. And then picking up telephone no.1, LED1 will display even you pick up telephone no.2, LED2 does not display and line 2 does not work. Vise versa testing by picking up line 2 prior, you will notice that line 1 does not work as well.

Application:

This circuit is used for 2 lines sneaking protection. If you want to connect for 3-4 lines, adding another circuit accordingly.

Figure 1. Installing the componants



Troubleshooting:

The most problem like the fault soldering. Check all the soldering joint suspicious. If you discover the short track or the short soldering joint, re-solder at that point and check other the soldering joint. Check the position of all component on the PCB. See that there are no components missing or inserted in the wrong places. Make sure that all the polarised components have been soldered the right way round.

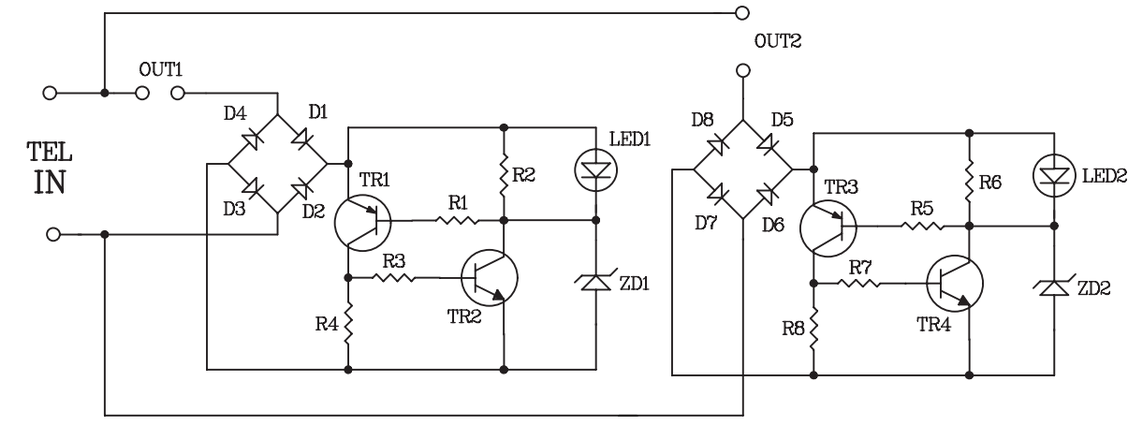
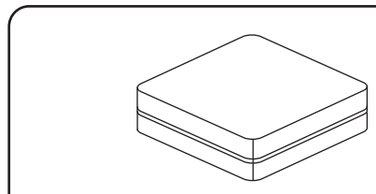


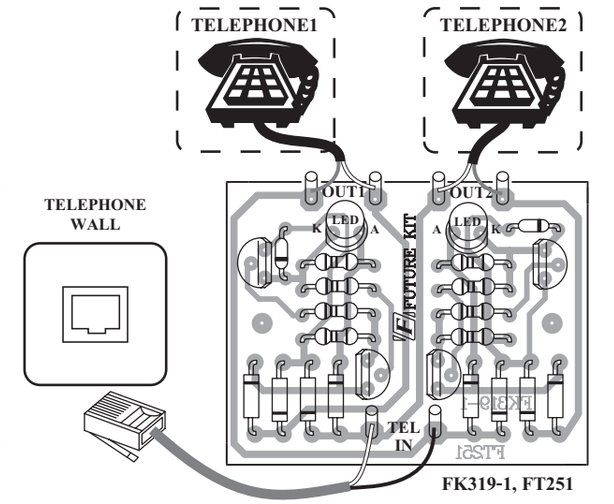
Figure 2. The telephone privacy protection circuit

Figure 3. Connections



NOTE:

FUTURE BOX FB01 is suitable for this kit.



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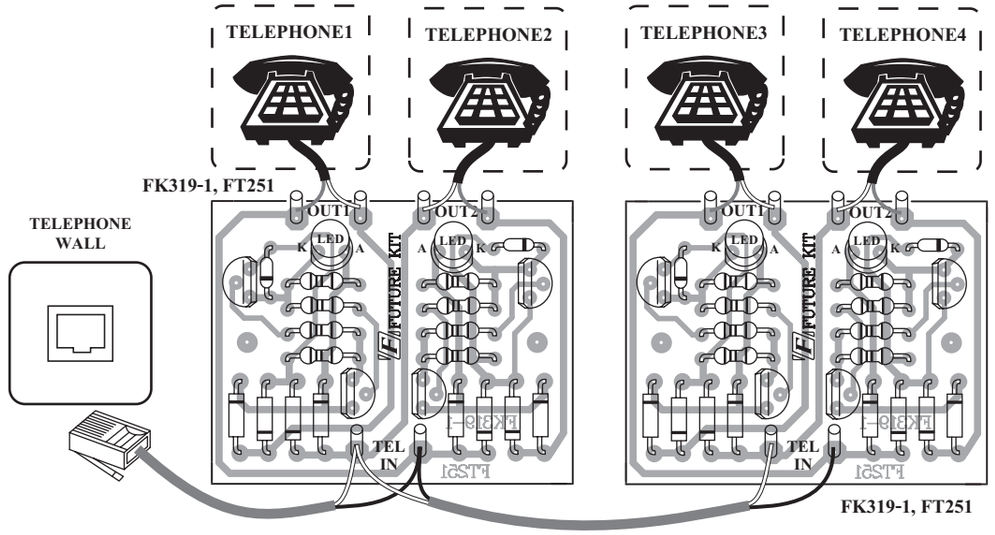

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