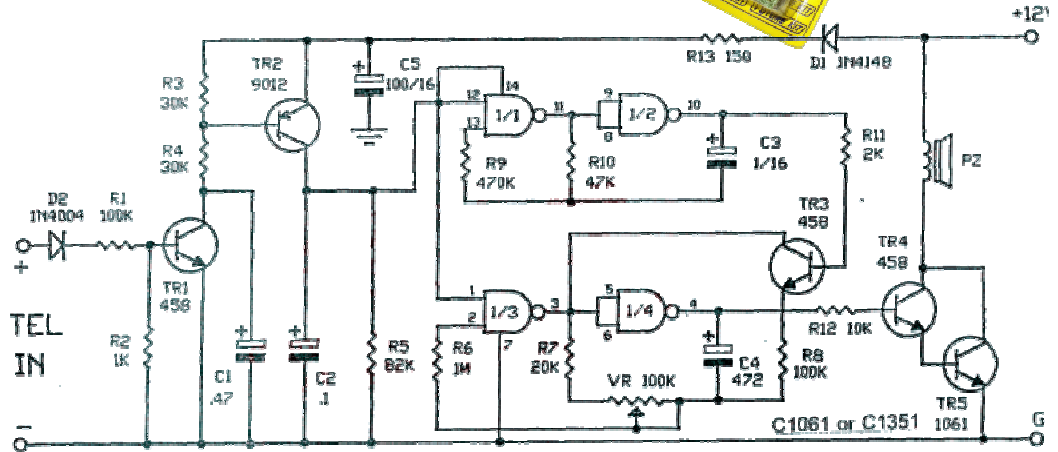


FK305 LOUD TELEPHONE RINGER

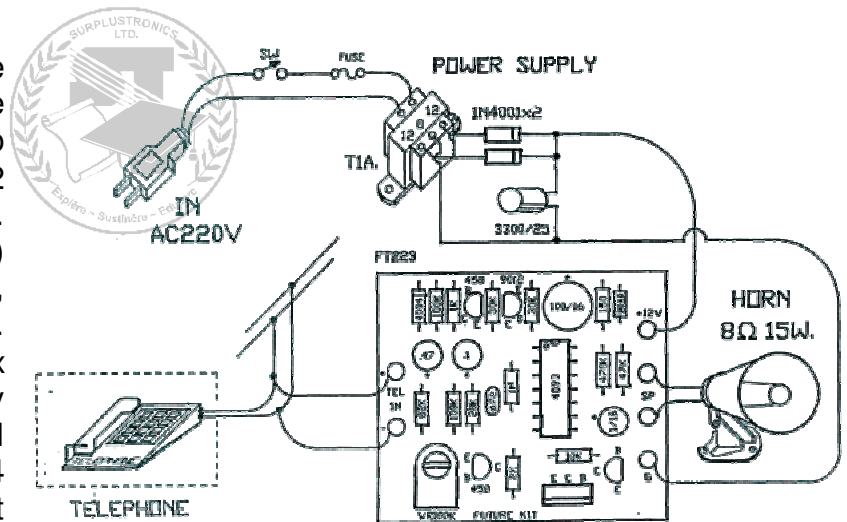
Ever in the classroom or outside and can't hear the phone ringing? **Remedy:** build the FK 305 kit. Simple, good lesson in soldering PCB parts including DIL IC's. Circuit suits **age15+**



Under normal condition without the phone ringing, TR1 and TR2 are inactive because there is only 48-60 volt supply in the telephone line. Since TR2 is inactive, 4 parts of IC1 are not triggered; (IC1 is a 4093 Quad, 2 input NAND gate)



Therefore there is no sound from the dynamic buzzer. When the phone rings, the voltage is increased to approximately 100 volt, TR1, TR2 and the 4 parts of IC1 start acting. IC1/1 and IC1/2 (two of the 4 gates) act as a low frequency generator, which is transferred to leg B of TR3. TR3 passes low frequency, to mix with the high frequency generated by IC1/3 and IC1/4. The mixed frequency is then transferred to TR4 and TR5 for amplification and sent out to the dynamic buzzer accordingly.



In the assembly of this kit, like most others in the "Future Kit" range, it is best to start by first checking that you have all the components. Then attach them in order of their height from the board. I.e. resistors first and so on. The last items that should be attached however should always be any semiconductors including transistors. This avoids unnecessary heat on sensitive components. The PCB or 'printed circuit board' will be marked already for the components. If polarity is essential then this is marked also. Values of components marked are brief and because of the translation are sometimes incorrect, therefore it is best to double check before placing.

Component list:

- R1 & 8** 100k (100,000 ohm)
- R2** 1k (1,000 ohm)
- R3 & 4** 30k (30,000 ohm)
- R5** 82k (82,000 ohm)
- R6** 1M (1,000,000 ohm)
- R7** 20k (20,000 ohm)
- R9** 470k (470,000 ohm)
- R10** 47k (47,000 ohm)
- R11** 2k (2,000 ohm)
- R12** 10k (10,000 ohm)

- R13** 150 ohm
- C1** 0.47µF 50v electro
- C2** 0.1 µF 50v electro
- C3** 10 µF 16v electro
- C4** 4.7nF 50v green cap
- C5** 100 µF 16v electro
- D1** 1N4004 power diode
- D2** 4148 signal diodes
- TR1,3 & 4** 458
- TR2** 9012
- TR5** 1061

- SP** Speaker 2" 8 ohm ¼ watt
- VR1** Trim pot 100K
- IC 1** 4093 cmos Quad, 2 input NAND gate

Suits **age 15+**