

L: 0.2 mm Cu em
6 mm ϕ HF

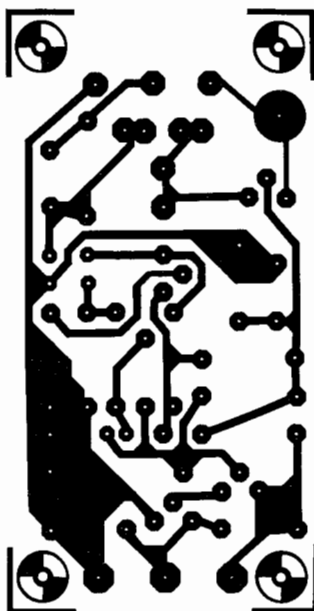
capacity relay

The capacity relay consists basically of an oscillator, a detector and a relay driver stage.

A length of wire is connected to a 'sensitive' point in the oscillator circuit. Any object in the vicinity of this wire will load and detune the oscillator; the extent to which this occurs depends on the size of the object, how 'lossy' it is, how close it is to the wire, and, of course, how stable the oscillator is. A large salt water container, such as the human body, is particularly effective. The preset potentiometer P1 is used to

so adjust the oscillator stage (T1) that it will only just start to oscillate. This adjustment should be made with the 'aerial' connected, so it becomes a question of trial and error: after each re-adjustment one must step back a few paces to see whether the oscillator will start again.

The oscillator drives an amplifier and detector stage (T2, D2, D3). As long as the oscillator is running, the base of T3 is driven negative. If a sufficiently large object approaches the aerial, however, the negative drive to T3 disappears. R7



Parts list:

Resistors:

R1, R3 = 1k
R2 = 270
R4, R6 = 100k
R5 = 47
R7 = 1M
P1 = 4k7

Capacitors:

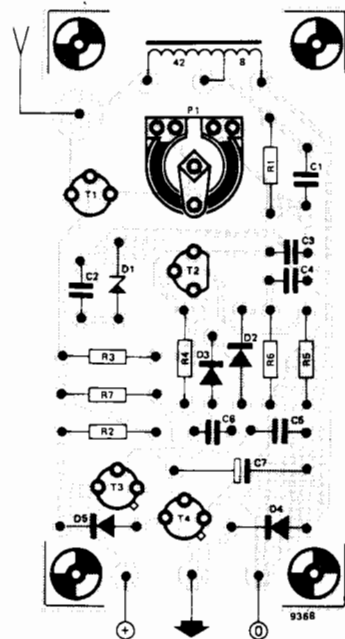
C1, C4, C5 = 470p
C2 = 4n7
C3, C6 = 270p
C7 = 47n... 10 μ /3V

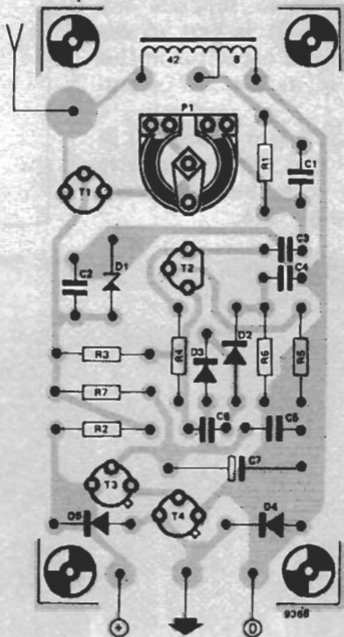
Semiconductors:

T1 = E300
T2 = BF494
T3, T4 = BC547B
D1 = 9.1 V zener (400 mW)
D2... D5 = 1N4148

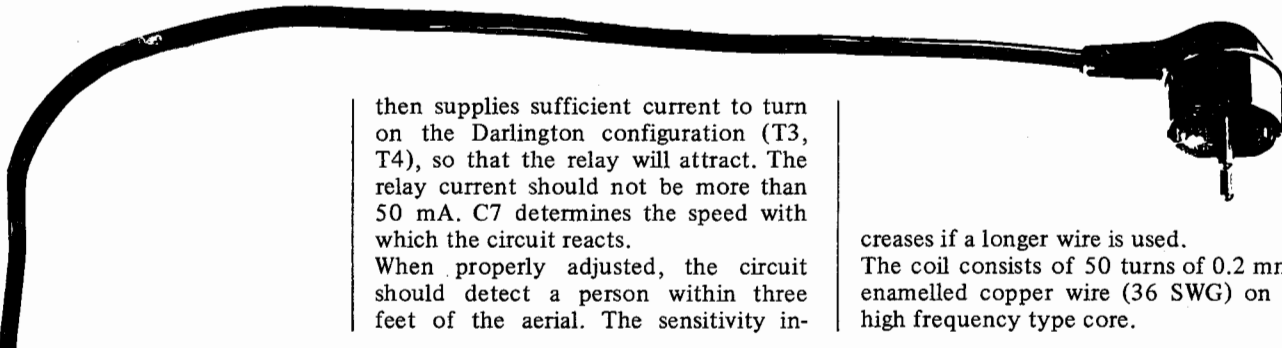
Misc.:

L1 = 50 turns 0.2 mm (36 SWG) Cu em on HF core
Relay: 10 V 50 mA max.





cu em



then supplies sufficient current to turn on the Darlington configuration (T3, T4), so that the relay will attract. The relay current should not be more than 50 mA. C7 determines the speed with which the circuit reacts.

When properly adjusted, the circuit should detect a person within three feet of the aerial. The sensitivity in-

creases if a longer wire is used.

The coil consists of 50 turns of 0.2 mm enamelled copper wire (36 SWG) on a high frequency type core.

