Field-strength meter

source: RED Free Circuit Designs

Small, portable, anti-bag-snatching unit

Also suitable for doors and windows control

Parts:

R1____________330K  1/4W Resistor
R2____________100R  1/4W Resistor
C1_____________10nF  63V Polyester or Ceramic Capacitor
C2____________100΅F   25V Electrolytic Capacitor
Device purpose:

This circuit, enclosed in a small plastic box, can be placed into a bag or handbag. A small magnet is placed close to the reed switch and connected to the hand or the clothes of the person carrying the bag by means of a tiny cord. If the bag is snatched abruptly, the magnet looses its contact with the reed switch, SW1 opens, the circuit starts oscillating and the loudspeaker emits a loud alarm sound. The device can be reverse connected, i.e. the box can be placed in a pocket and the cord connected to the bag. This device can be very useful in signalling the opening of a door or window: place the box on the frame and the magnet on the movable part in a way that magnet and reed switch are very close when the door or window is closed.

Circuit operation:

A complementary transistor-pair is wired as a high efficiency oscillator, directly driving a small loudspeaker. Low part-count and 3V battery supply enable a very compact construction.

Notes:

- The loudspeaker can be any type, its dimensions are limited only by the box that will contain it.
- An on-off switch is unnecessary because the stand-by current drawing is less than 20µA.
- Current consumption when the alarm is sounding is about 100mA.
- If the circuit is used as anti-bag-snatching, SW1 can be replaced by a 3.5mm mono Jack socket and the magnet by a 3.5mm. mono Jack plug with its internal leads shorted. The Jack plug will be connected with the tiny cord etc.
• Do not supply this circuit with voltages exceeding 4.5V: it will not work and Q2 could be damaged. In any case a 3V supply is the best compromise.