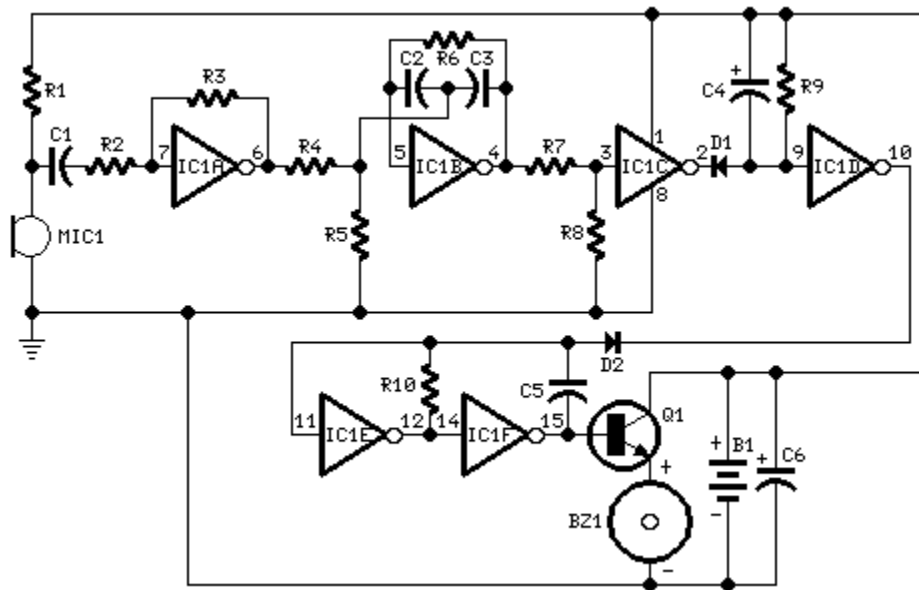


Whistle Responder

Beeps when hears your whistle
A gadget suitable for key-holders, games etc.

Circuit diagram:



Parts:

R1	22K	1/4W Resistor
R2	10K	1/4W Resistor
R3	4M7	1/4W Resistor
R4,R8	100K	1/4W Resistors
R5	220R	1/4W Resistor
R6	330K	1/4W Resistor
R7	47K	1/4W Resistor
R9	2M2	1/4W Resistor
R10	1M5	1/4W Resistor
C1,C5	47nF	63V Polyester or Ceramic Capacitors
C2,C3	10nF	63V Polyester Capacitors
C4,C6	1µF	63V Electrolytic Capacitors
D1,D2	1N4148	75V 150mA Diodes
IC1	4049	Hex Inverter IC

Q1_____BC337 45V 800mA NPN Transistor

MIC1_____Miniature electret microphone

BZ1_____Piezo sounder (incorporating 3KHz oscillator)

B1_____2.8 or 3V Battery (see notes)

Device purpose:

Some 15 years ago it was common to see small key-holders emitting an intermittent beep for a couple of seconds after its owner whistled. These devices contained a special purpose IC and therefore were not suited to home construction. The present circuit is designed around a general purpose hex-inverter CMOS IC and, using miniature components and button clock-type batteries can be enclosed in a matchbox. It is primarily a gadget, but everyone will be able to find suitable applications.

Circuit operation:

This device beeps intermittently for approx. two seconds when a person in a range of about 10 meters emits a whistle.

The first two inverters contained in IC1 are used as audio amplifiers. IC1A amplifies consistently the signal picked-up by the small electret-microphone and IC1B acts as a band-pass filter, its frequency being centered at about 1.8KHz. The filter is required in order to select a specific frequency, the whistle's one, stopping other frequencies that would cause undesired beeper's operation. IC1C is wired as a Schmitt trigger, squaring the incoming audio signal. IC1D is a 2 second (approx.) monostable driving the astable formed by IC1E & IC1F. This oscillator generates a 3 to 5Hz square wave feeding Q1 and BZ1, thus providing intermittent beeper's operation.

Notes:

- | Power supply range: 2.6 to 3.6 Volts.
- | Standing current: 150 μ A.
- | Depending on dimensions of your box, you can choose from a wide variety of battery types:
- | 2 x 1.5 V batteries type: AA, AAA, AAAA, button clock-type, photo-camera type & others.
- | 2 x 1.4 V mercury batteries, button clock-type.
- | 1 x 3 V or 1 x 3.6 V Lithium cells.