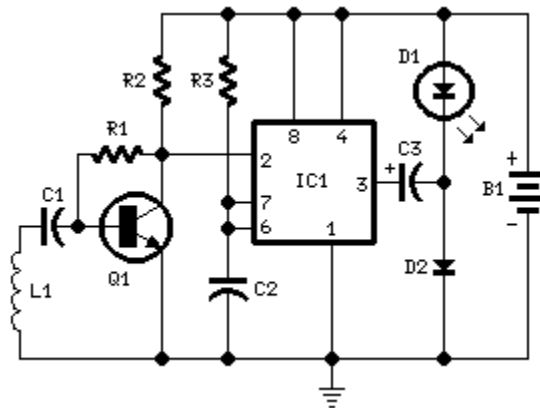


Cellular Phone calling Detector

Flashes a LED when detecting an incoming call
Powered by one 1.5V cell

Circuit diagram:



Parts:

R1	_____100K	1/4W Resistor
R2	_____3K9	1/4W Resistor
R3	_____1M	1/4W Resistor
C1,C2	_____100nF	63V Polyester Capacitors
C3	_____220µF	25V Electrolytic Capacitor
D1	_____LED	Red 10mm. Ultra-bright (see Notes)
D2	_____1N5819	40V 1A Schottky-barrier Diode (see Notes)
Q1	_____BC547	45V 100mA NPN Transistor
IC1	_____7555 or TS555CN	CMos Timer IC
L1	_____Sensor coil	(see Notes)
B1	_____1.5V Battery	(AA or AAA cell etc.)

Device purpose:

This circuit was designed to detect when a call is incoming in a cellular phone (even when the calling tone of the device is switched-off) by means of a flashing LED.

The device must be placed a few centimeters from the cellular phone, so its sensor coil L1 can detect the field emitted by the phone receiver during an incoming call.

Circuit operation:

The signal detected by the sensor coil is amplified by transistor Q1 and drives the monostable input pin of IC1. The IC's output voltage is doubled by C2 & D2 in order to drive the high-efficiency ultra-bright LED at a suitable peak-voltage.

Notes:

- | Stand-by current drawing is less than 200 μ A, therefore a power on/off switch is unnecessary.
 - | Sensitivity of this circuit depends on the sensor coil type.
 - | L1 can be made by winding 130 to 150 turns of 0.2 mm. enameled wire on a 5 cm. diameter former (e.g. a can). Remove the coil from the former and wind it with insulating tape, thus obtaining a stand-alone coil.
 - | A commercial 10mH miniature inductor, usually sold in the form of a tiny rectangular plastic box, can be used satisfactorily but with lower sensitivity.
 - | IC1 must be a CMOS type: only these devices can safely operate at 1.5V supply or less.
 - | Any Schottky-barrier type diode can be used in place of the 1N5819: the BAT46 type is a very good choice.
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