## economy radar detector CIRCUIT (LM1458)

http://circuit-diagram.hqew.net/economy-radar-detector-CIRCUIT-%28LM1458%29_21863.html

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This circuit uses a 1458 dual op-amp to form a radar detector. C1 is the detector of the radar signal. The first op-amp forms a current-to-voltage converter and the second op-amp buffers the output to drive the piezo transducer. R5 sets the switching threshold of the second op-amp; normally it is adjusted so that the circuit barely triggers on background noise, then it`s backed off a bit. The response of the circuit may be tuned by adjusting the length of the leads on C1. For typical road-radar systems, the input capacitor`s leads should be about 0.5 to 0.6 inches

$$L = -.25 Log(f) + .75$$
$$L = inches \quad f = GHz$$
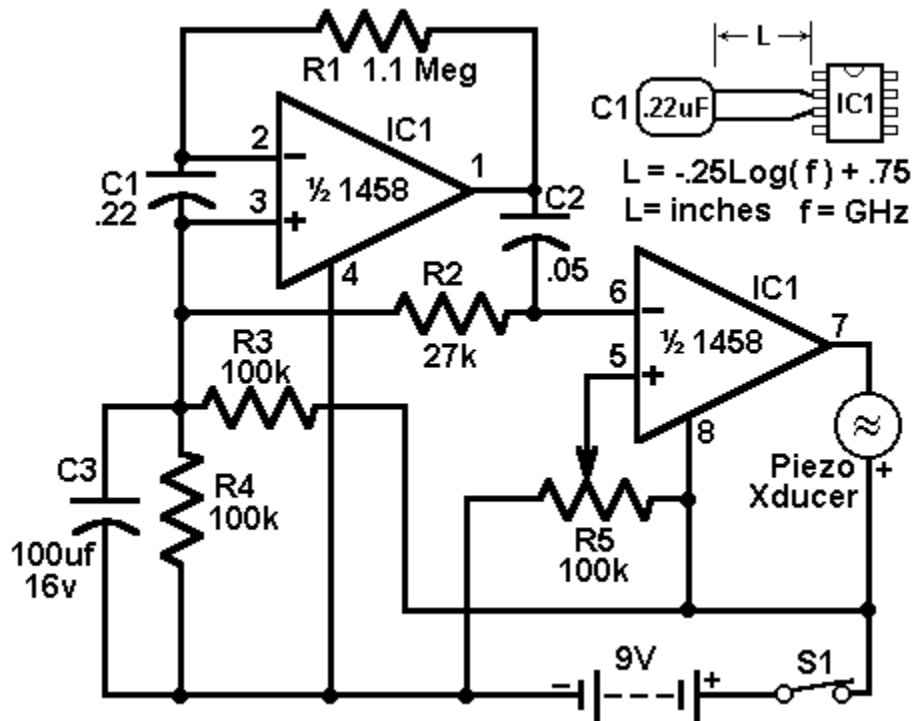
Radar signal detector

The circuit can be tuned to respond to signals between 50 MHz and 500 GHz. The economy model is shown in Fig. 1, and the deluxe model is shown in Fig. 2.The first op amp in each circuit functions as a current-to-voltage converter. In the economy model IClb buffers the output to drive the piezo buzzer. The deluxe model functions in a similar manner except that IClb is configured as a 20 buffer amplifier to drive the LM386. In both circuits Cl functions as a `transmission line` that intercepts the incident radar signal.

The response may be optimized by trimming Cl's lead length for the desired frequency. Typically the capacitor's leads should be 0.5-0.6 inches long.
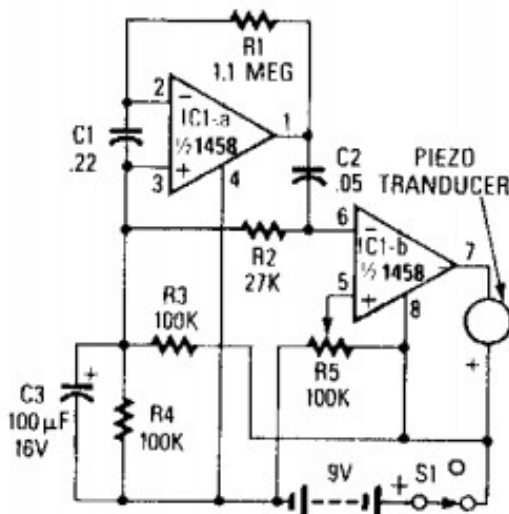

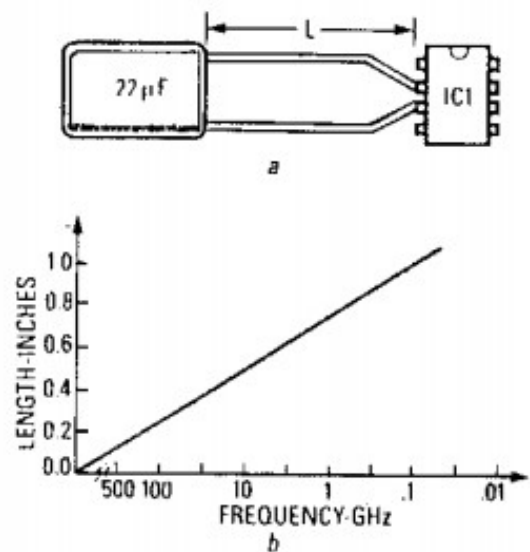FIG. 1—THE ECONOMY RADAR DETECTOR needs only one IC and a few discrete components.

FIG. 3—VARY THE LEAD LENGTHS OF C1 to tune the input circuit.