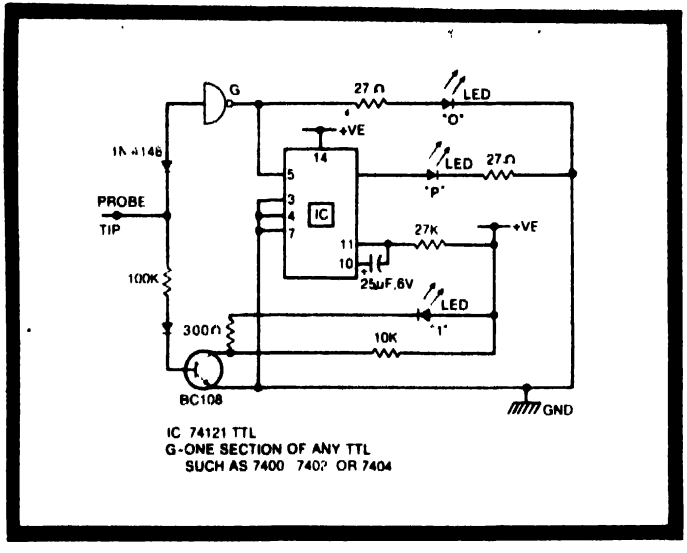
3-LED Logic Probe

Here is a simple logic circuit which is much more economical than a commercial unit.

A high level logic at the probe tip causes the transistor to conduct, thus illuminating the LED marked '1'. A low-level logic produces a high at the output of the inverter 'G' causing the LED marked 'O' to be lit.

If, however, the logic level at the probe tip is being pulsed, the monostable IC 74121 (TTL) will detect the pulses and stretch them to about 0.4s duration. The LED marked 'P' will then flash briefly. For quick detection, while using the probe, LEDs of three different colours can be used.

This simple logic probe uses a 5V regulated power supply. The power supply can also be drawn from the circuit under test. But power supply should not exceed 5V. The inverter 'G' can be any one section of TTL package such as



7400, 7402 or 7404, with its inputs paralleled.

The total cost of the probe is around Rs 50. Prototype was assembled on a piece of dot matrix board with point by point wiring.

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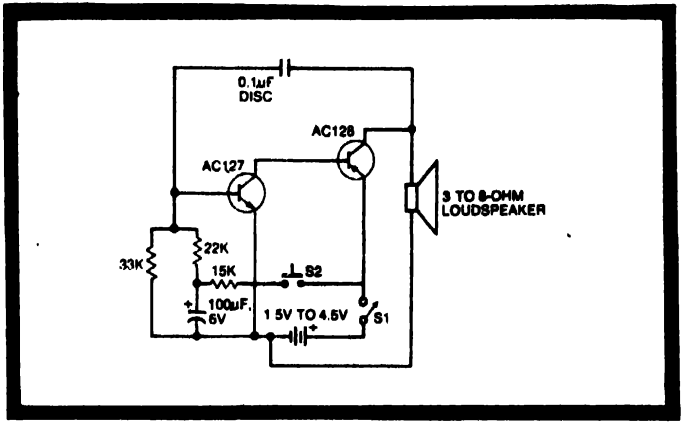
Siren

Here is a simple circuit to give you a room-filling Police doorbell, in intruder alarm circuits and for other general audio purposes.

The circuit produces a shrill siren when pushbutton switch S2 is depressed. S1 is the main switch to switch the unit on/off. The loudspeaker should be as small as possible to get a shrill sound.

Battery can comprise one to three standard 1.5V cells. As current consumption is very low, penlight cells can also be used.



Wiring is not critical, and the entire unit can be constructed on a small piece of PCB or groupboard.

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