

# SUNRISE ALARM CLOCK

Phototransistor Q1 is very sensitive to light. The sun shining on this small device will cause a 100 Hz tone to wake you in the morning. Or you can use it in many other ways, anywhere you want to sense a light beam. Light left on in the garage? Headlights working? This circuit is the start of interesting ideas. The base of Q1 is not connected to anything. The speaker can be any small one and you will find that a small 9V transistor radio battery works well and lasts a long time.

## PARTS LIST FOR SUNRISE ALARM CLOCK

- C1—0.1- $\mu$ F capacitor, 15 VDC
- C2—6.8- $\mu$ F capacitor, 15 VDC
- C3—2- $\mu$ F capacitor, 15 VDC
- D1—1N4001 diode
- IC1—4011 quad NAND gate
- Q1—FPT100 phototransistor
- Q2—2N4403
- R1—300,000-ohm resistor
- R2—15,000-ohm resistor
- R3—150,000-ohm resistor
- R4—220-ohm resistor
- R5—1,000-ohm, resistor

