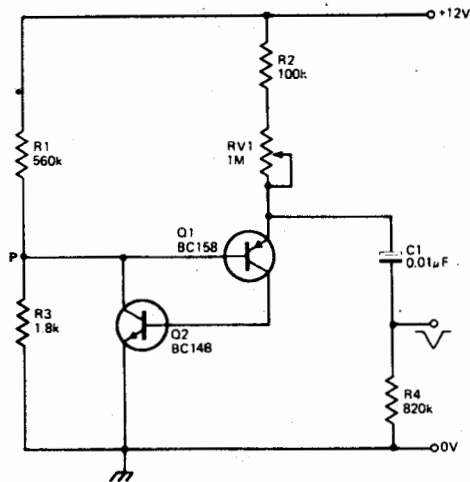


## PULSE GENERATOR

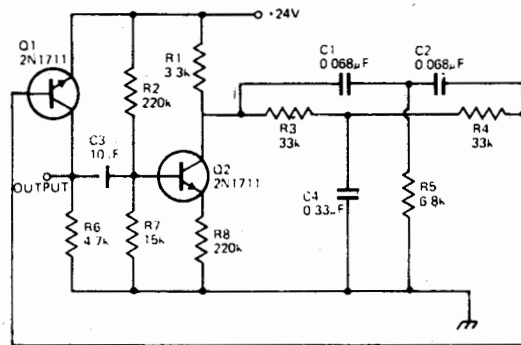


This simple pulse generator produces 100 nanosecond negative pulses of 8 volts amplitude.

At switch on, Q1 and Q2 are off, and C1 charges through R2, RV1 and R4. When the potential across C1 becomes 0.7 volts above point P, the transistors saturate, discharging C1 through R4. A negative pulse is thus generated across R4.

When the capacitor is fully discharged the transistors turn off and the cycle repeats. Pulse spacing may be adjusted between 1.5 and 15 milliseconds by RV1 and the pulse duration may be altered by using a different value for C1.

## STABLE RC OSCILLATOR



The frequency of oscillation of this circuit is determined by a twin T network and is stable to within 0.05% for  $\pm 10\%$  supply variation.

A temperature stability of 0.2% from  $-20^{\circ}\text{C}$  to  $80^{\circ}\text{C}$  will be obtained if polycarbonate capacitors are used throughout.

With the values shown the circuit oscillates at 60 Hz. It will operate at very low frequencies for which the values required are given by the formula:—

$$F = \frac{0.159}{R_3 C_1}$$

where F = frequency in hertz and  $R_3$  is in ohms  $C_1 = C_2 = \frac{1}{2} C_4$  and  $R_3 = R_4 = 2R_5$ .