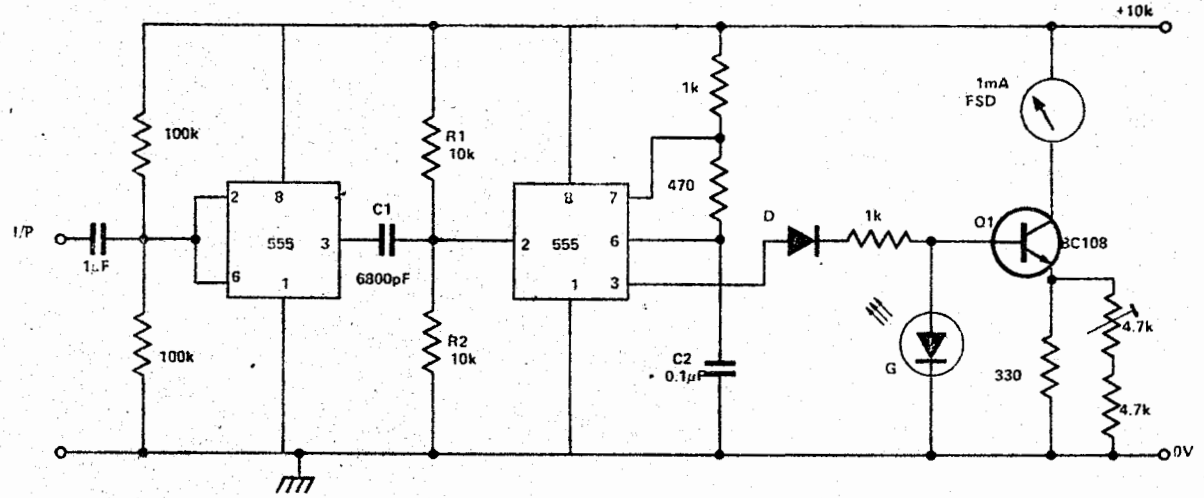
SIMPLE ACCURATE FREQUENCY METER



This circuit provides a meter deflection that is strictly proportional to the frequency of the input signal over the range 10Hz–300Hz. The first 555 timer IC is used as a Schmitt trigger, to convert the I/P signal to a fast-edge square wave. This is differentiated by the network C1, R1 and R2, and the resulting spikes used to trigger the second 555, which operates as a monostable, generating constant - width pulses. These are used to turn on the constant-current source Q1, so that the average current in the meter movement is proportional to the number of pulses arriving per second. A green LED is used to bias the current source as this gives near-perfect temperature compensation; the 4k7 preset pot gives a fine adjustment for calibration purposes. When the 1mA meter shown is used, fsd is given by 100Hz. To extend the range, reducing C2 to .01μF gives an fsd of 1kHz.