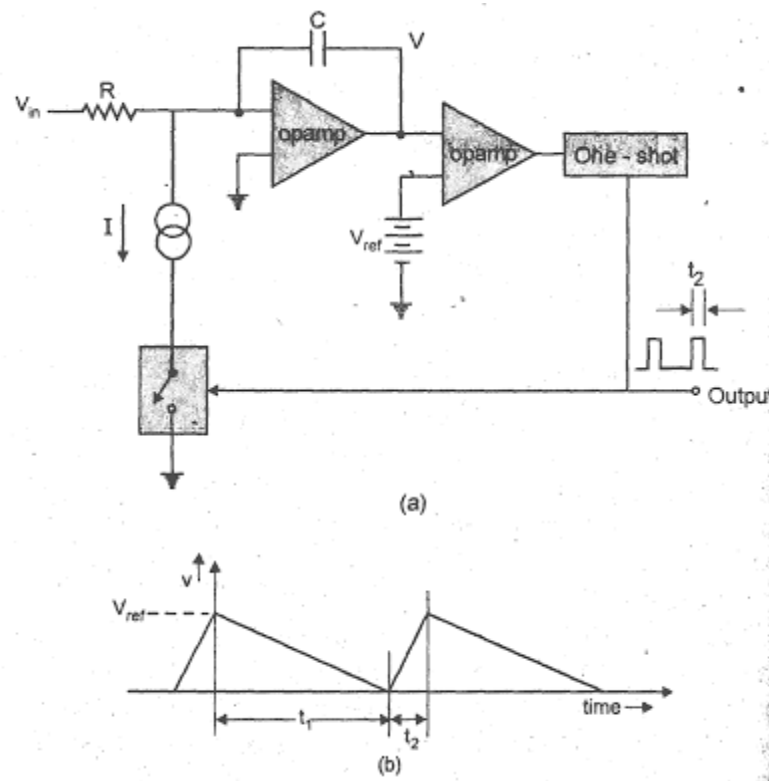


VOLTAGE TO FREQUENCY CONVERTER

This converter consists of an integrator that feeds a comp which in turn drives a one shot multivibrator. An electronic switch discharges the integrator via a current source. A voltage to frequency converter using op-amp.



The waveform associated with the voltage to frequency converter .The input voltage V_{in} causes the integrator output to ramp in the negative direction.

If integrator output starts from some positive voltage, the output reach zero voltage and the one shot multivibrator will provide an output pulse. Using this zero voltage of the integrator as the starting. For the investigation of the V/F converter, the integrator output be ramp n the positive direction for a time equal to t₂ this

delay is set by the duration of one shot and cause the integrator output to achieve an output level of V_{ref}. So V_{ref} interms of t₂, is given by

$$V_{ref} = t_2 \left(\frac{I - \frac{V_{in}}{R}}{C} \right) \quad \dots(7.5)$$

After the one-shot is reset, the integrator output ramps down to zero volt and the one shot is triggered again. The time taken to ramp from V_{ref} to zero volt is

$$t_1 = \frac{C V_{ref} R}{V_{in}} \quad \dots(7.6)$$