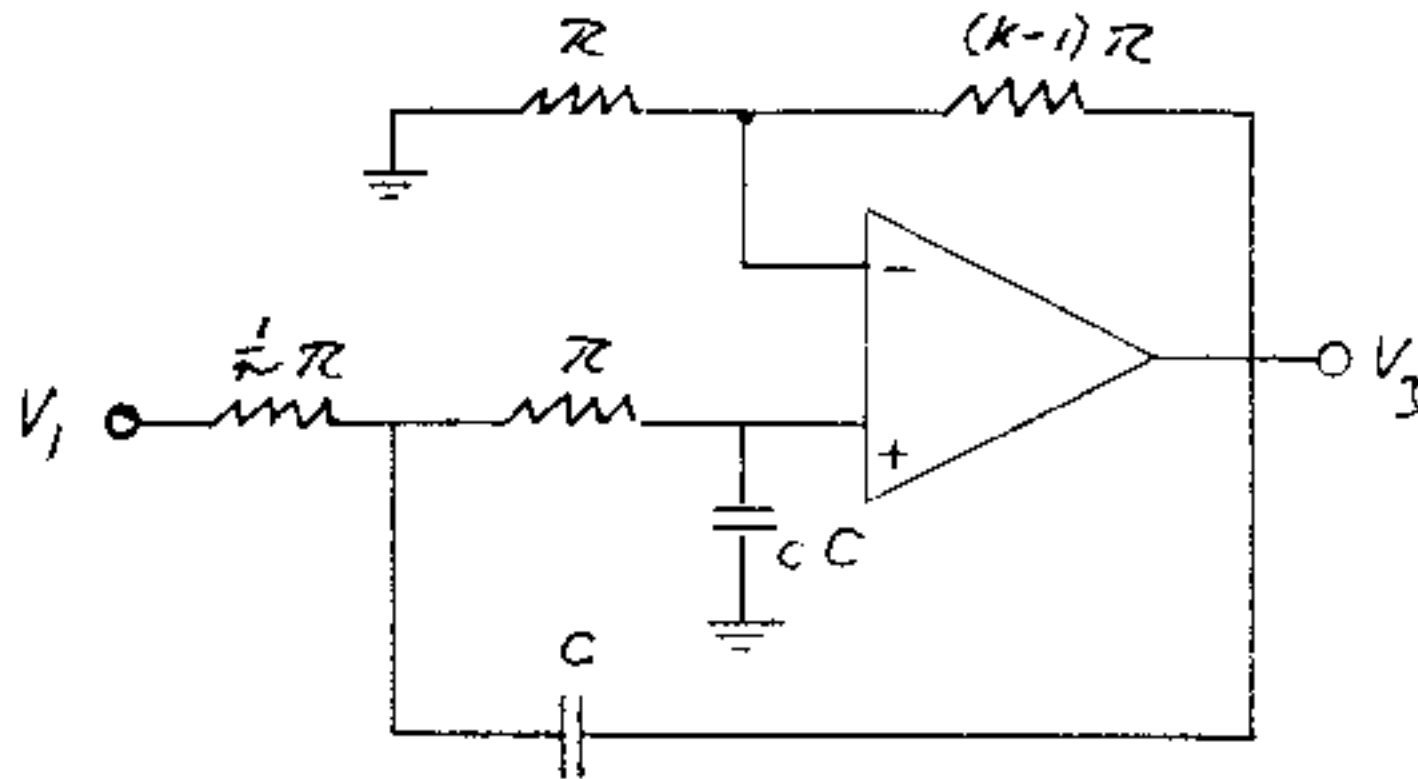


Summary: Single-opamp positive feedback topologies (2nd order)

Lowpass

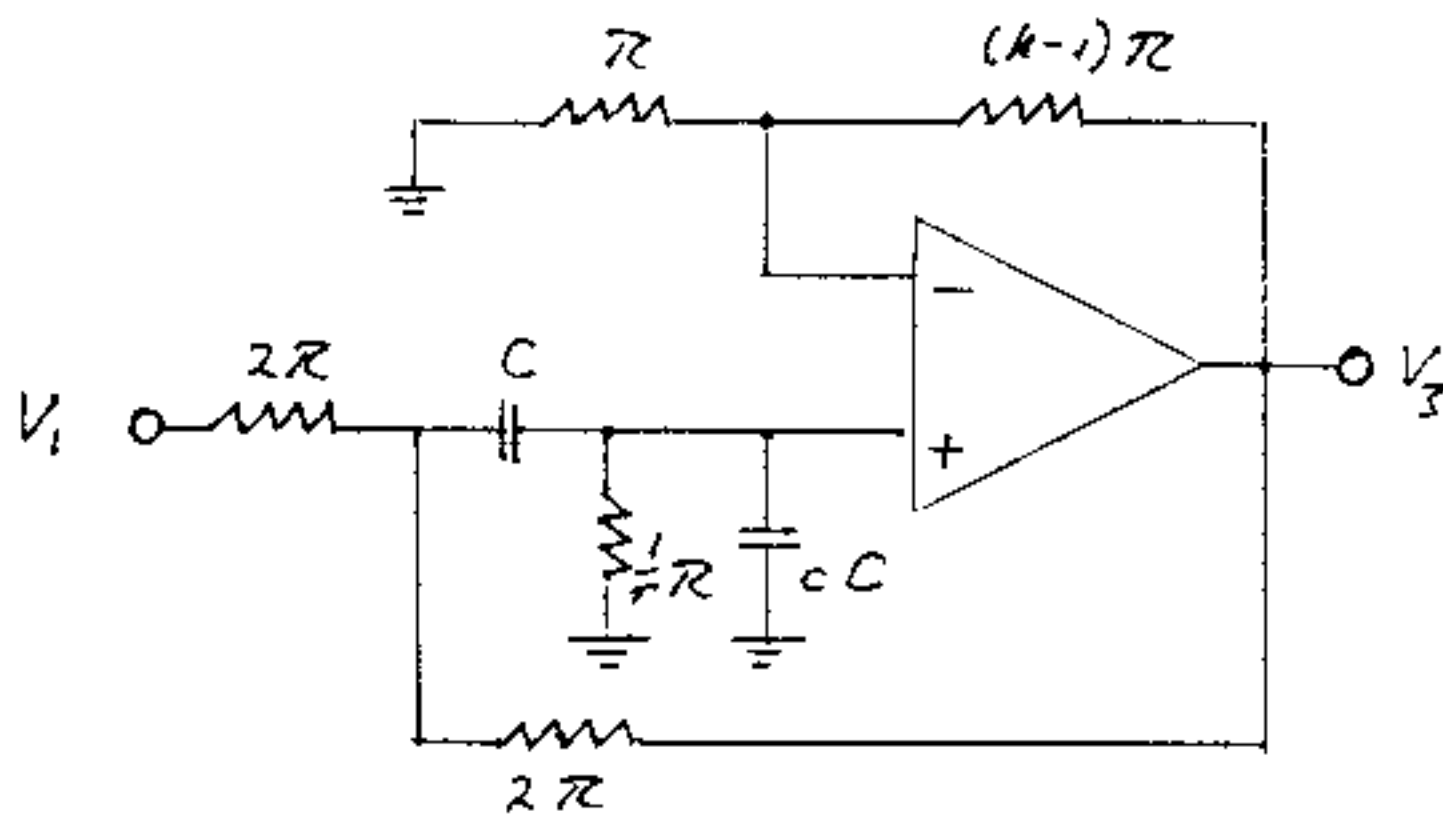


$$\omega_p = \sqrt{\frac{\tau}{C}} \frac{1}{\tau C}$$

$$Q_p = \frac{\sqrt{\tau \cdot C}}{C(1+\tau) - (k-1)}$$

$$T(s=0) = k$$

Bandpass

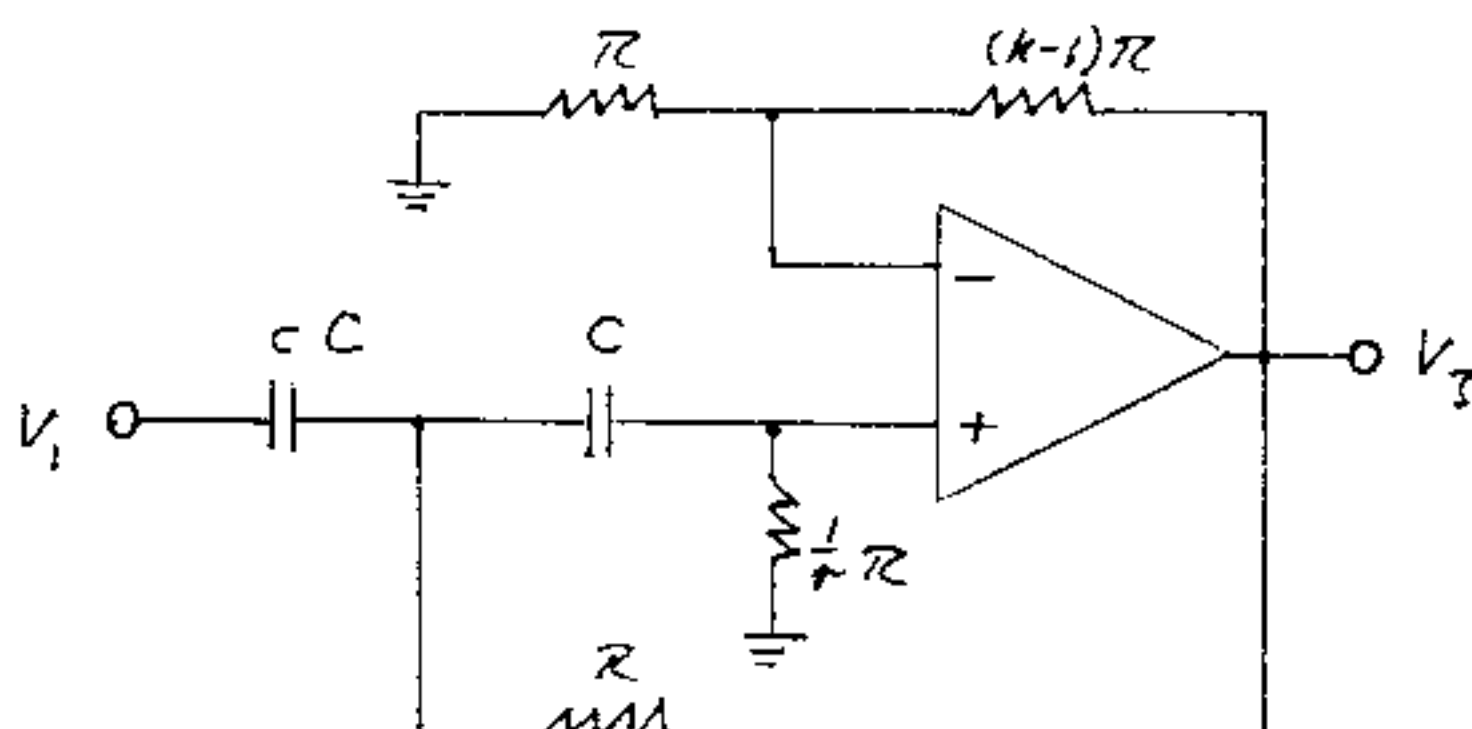


$$\omega_p = \sqrt{\frac{\tau}{C}} \frac{1}{\tau C}$$

$$Q_p = \frac{\sqrt{\tau \cdot C}}{\tau + C + \frac{1}{2} - \frac{1}{2}(k-1)}$$

$$T(s=j\omega_p) = \frac{k}{2(\tau+C)+1-(k-1)}$$

Highpass



$$\omega_p = \sqrt{\frac{\tau}{C}} \frac{1}{\tau C}$$

$$Q_p = \frac{\sqrt{\tau \cdot C}}{\tau(1+C) - (k-1)}$$

$$T(s \rightarrow \infty) = k$$