

Example 1

Design an Opamp Monostable multivibrator if $T_1=10\text{msec}$, $V_{CC}=10\text{V}$ and $V_{EE}=5\text{V}$.

Solution

$$T_1 = \tau \ln \left(\frac{V_{EE} + V_{CC}}{\beta V_{CC}} \right) \quad \text{where } \tau = \frac{R_1 R_2}{R_1 + R_2}$$

$$\text{Assume } \beta = \frac{1}{3} = \frac{R_1}{R_1 + R_2}$$

Assume that $R_1=1\text{K}$ then $R_2=2\text{k}$.

Substitute with T_1, R_1, R_2 and β in the above equation to get C.

$$C = 10 \times 10^{-6} \text{sec}$$