555 Oscillator

* Circuit:

![Circuit Diagram]

(4, 5 are no-connects)

* Design Equations:

\[ T_H = \text{time } V_o \text{ is high} = C(R_A + R_B) \ln 2 \]
\[ T_L = \text{time } V_o \text{ is low} = CR_B \ln 2 \]
\[ T = \text{period of oscillation} = T_H + T_L \]
\[ f = \text{oscillation frequency} = \frac{1}{T} \]
\[ D = \text{duty cycle (\% of time high)} = \frac{T_H}{T_H + T_L} = \frac{R_A + R_B}{R_A + 2R_B} \]

* Online design aid (Java applet):

www.users.bigpond.com/ajarmstr/FreeStuff/555_timer_design_tool.htm

⇒ easier to choose standard values with this tool.