t_1 – capacitor charge "ON" time is calculated as:

$$t_1 = 0.693(R_1 + R_2).C$$

t_2 – capacitor discharge "OFF" time is calculated as:

$$t_2 = 0.693\, R_2.C$$

Total periodic time (T) is:

$$T = t_1 + t_2$$

The output frequency, *f* is therefore given as:

$$f = \frac{1}{T}$$

Which gives a duty cycle value of:

$$\text{Duty Cycle} = \frac{R_1 + R_2}{(R_1 + 2R_2)}$$