

MSC1210

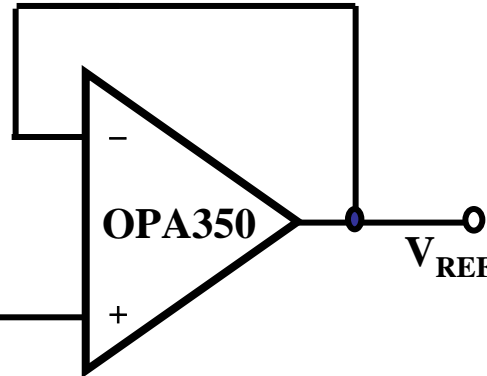
**Microcontroller
or
Microprocessor**

PWM output

V_{PWM}

R_1

C_1

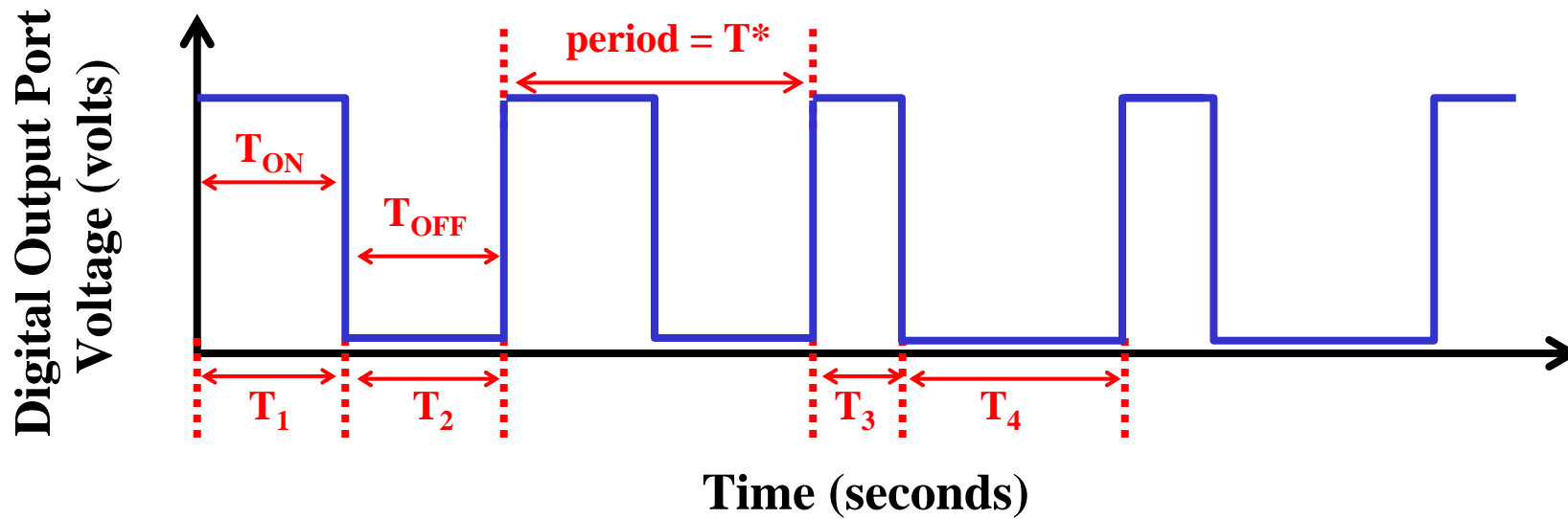


**Adjustable
Analog
Voltage
Reference**

V_{REF}

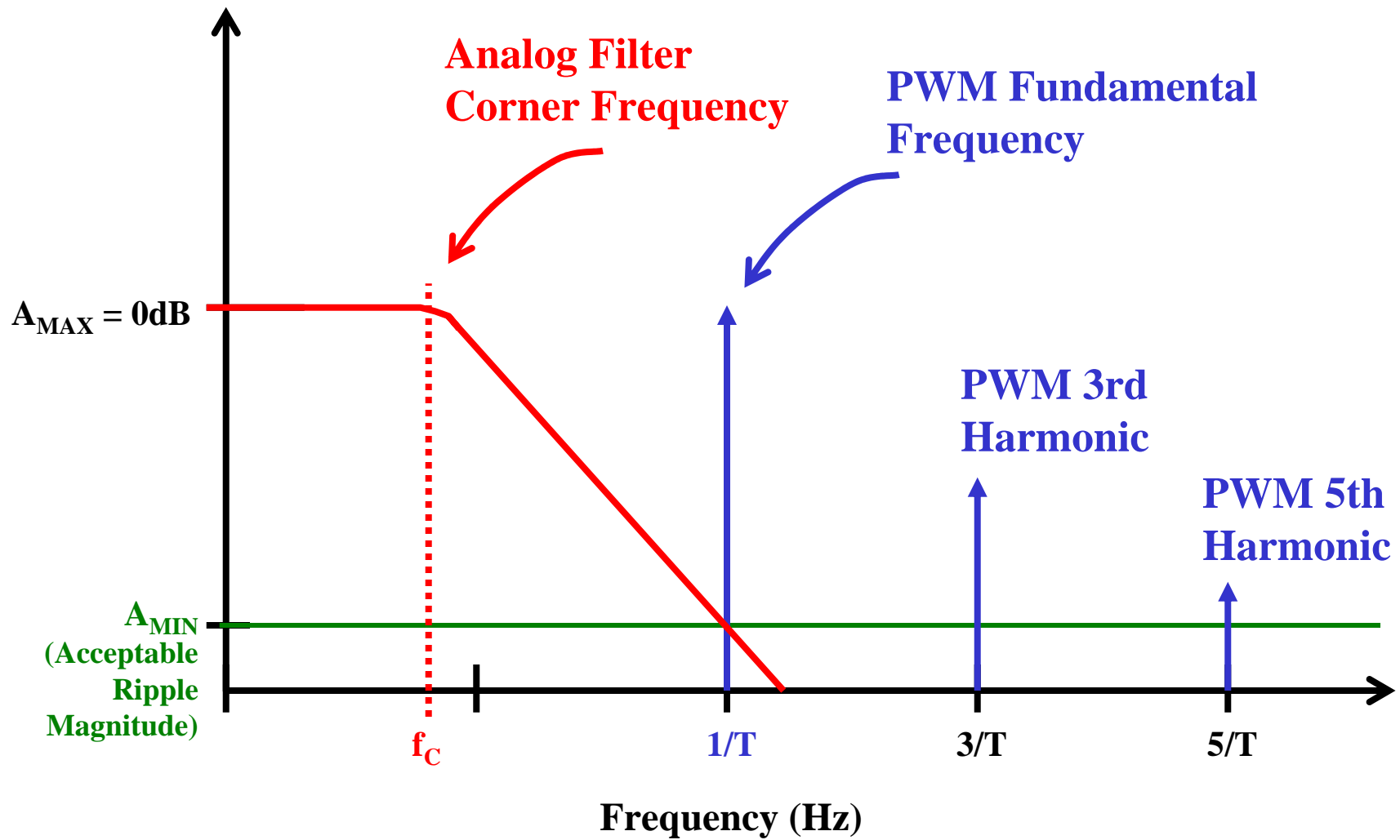
$$V_{REF-DC} = \frac{V_{PWM-MAX} T_{ON}}{T^*}$$





**Fundamental
frequency of
PWM signal = $1/T^*$**





Finding f_c , C_1 , and R_1

◆ First order filter

$$f_c = \frac{f_{PWM}}{\sqrt{(10^{(A_{MAX}-|A_{MIN}|)/10})-1}}$$

◆ Finding R_1 Value

- Pick standard value for C_1

$$R_1 = \frac{1}{(2\pi C_1 f_c)}$$

