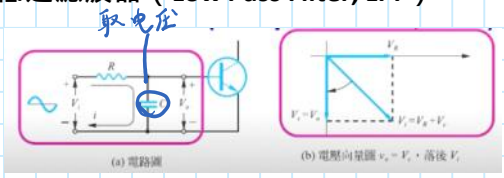
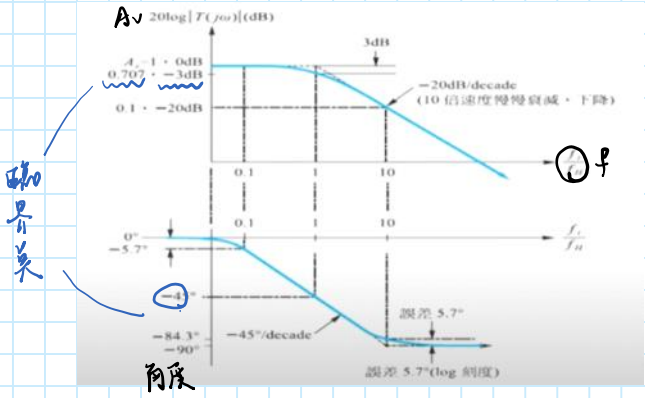
濾波器

2020年10月26日　　下午 02:53

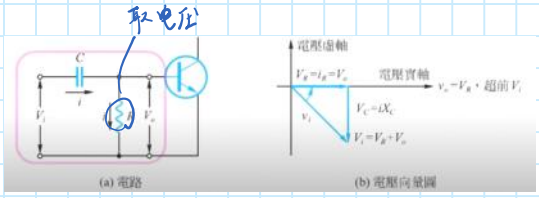
1.低通濾波器（Low Pass Filter, LPF）

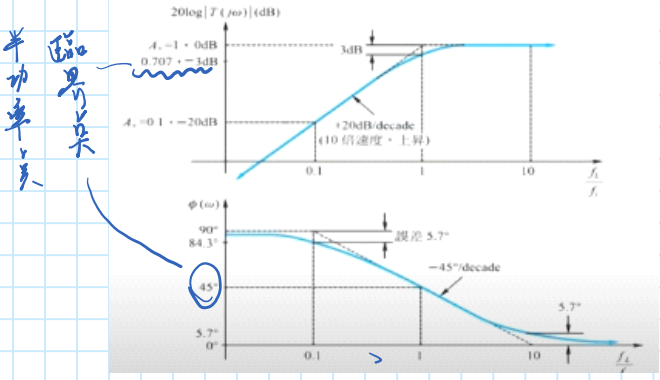




$$\Rightarrow \text{高頻截止頻率：} f_H=\frac{1}{2\pi RC}\text{Hz，在半功率點上：}\begin{cases}(1)f_H=\dfrac{1}{2\pi RC}\text{Hz，}(2)V_o\text{落後}45^\circ\\(3)R=X_C\text{，}(4)\dfrac{V_o}{V_i}=\dfrac{1}{\sqrt{2}}=0.707\end{cases}$$

2.高通濾波器（High Pass Filter, HPF）





$$\text{在半功率點上：}\begin{cases}(1)f_L=\dfrac{1}{2\pi RC}\text{Hz},(2)V_o\text{超前}V_i45^\circ\\(3)R=X_C,(4)\dfrac{V_o}{V_i}=\dfrac{1}{\sqrt{2}}=0.707\end{cases}$$

3.帶通濾波器（band pass filter, BPF）

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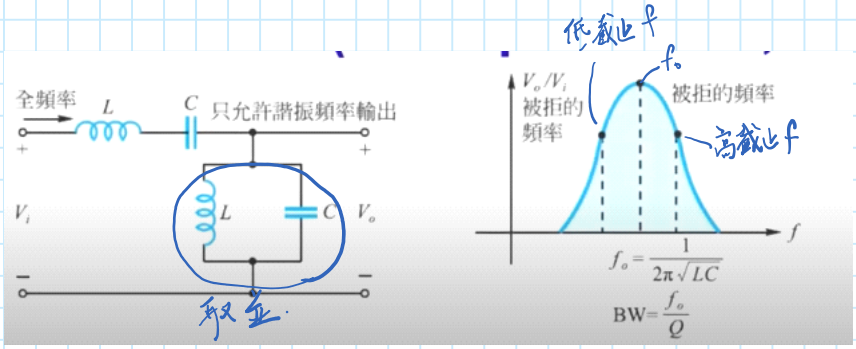
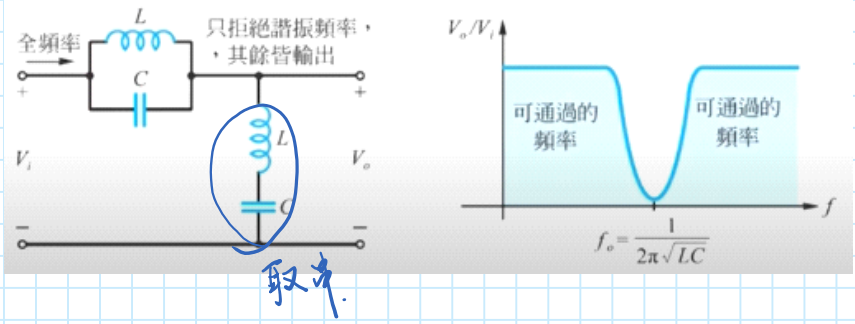


4.帶拒濾波器（band pass filter, BPF）



Conclusion: