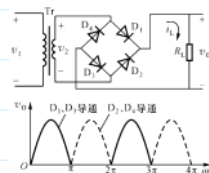


整流与滤波电路

全波桥式整流

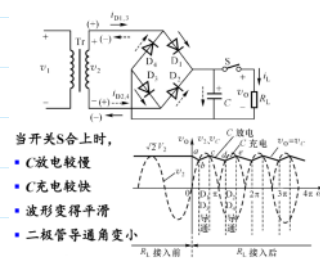


$$V_0 = \frac{2\sqrt{2}}{\pi} V_2 \approx 0.9 V_2$$

$$\text{二极管 } V_R = \sqrt{2} V_2 < V_{RM}$$

$$I_{D(AV)} = \frac{V_{O(AV)}}{2R_L} < I_F$$

电容滤波

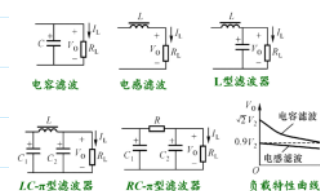


$$R_L = \infty, V_0 = \sqrt{2} V_2 \approx 1.4 V_2$$

$$R_L C \text{ 很小}, V_0 \approx 0.9 V_2$$

$$\text{一般}, V_0 \approx 1.2 V_2$$

其它滤波

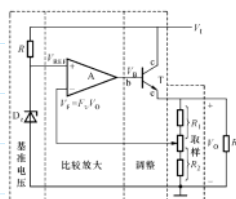


性能指标

$$\text{稳压系数 } S_r = \frac{\partial V_0}{\partial V_i} \approx \frac{\Delta V_0}{\Delta V_i} \Big|_{\Delta I_L=0} \text{ 越小越好}$$

$$\text{输出内阻 } R_0 = \frac{\partial V_0}{\partial I_L} = \frac{\Delta V_0}{\Delta I_L} \Big|_{\Delta V_i=0} \text{ 越小越好}$$

线性串联型稳压电路



$$V_{REF} = \frac{R_2}{R_1 + R_2} V_0$$

$$V_0 = V_{REF} \left(1 + \frac{R_1}{R_2}\right)$$