

五际开  
第一章

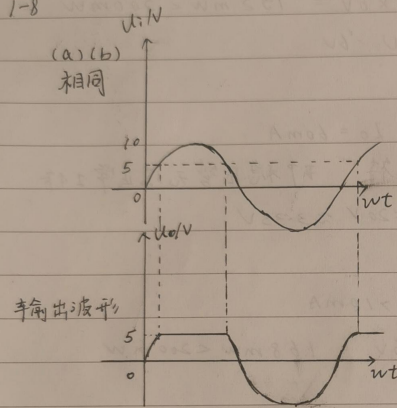
1-6 二极管正向导通, 压降  $U_{VD} = 0.7V$

$$\therefore I = \frac{10 - 0.7}{5.1} mA = \frac{9.3}{5.1} mA \approx 1.82 mA$$

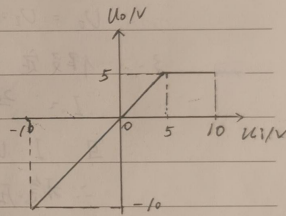
2. 温度升高时, 由二极管正向导通温度特性,

$U_D$  减小,  $I$  增大

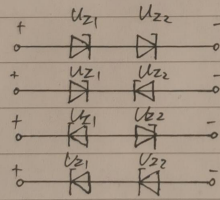
1-8



传输特性



1-9



串联: 4种稳压值

$$U_1 = 0.7V + 0.7V = 1.4V$$

$$U_2 = 0.7V + 9V = 9.7V$$

$$U_3 = 6V + 0.7V = 6.7V$$

$$U_4 = 6V + 9V = 15V$$

并联: 2种稳压值

$$U_1 = 0.7V$$

$$U_2 = 0.7V$$

$$U_3 = 0.7V$$

$$U_4 = 6V$$

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1-10

1.  $U_I = 20V$ ,  $R_L = 1k\Omega$

假定  $U_O = U_Z = 6V$   $I_O = 6mA$

$$I = \frac{U_I - U_O}{R} = \frac{14V}{500\Omega} = 28mA$$

$$I_Z = 28 - 6 = 22mA > 10mA$$

$$\text{又} \because I_Z \cdot U_Z = 22mA \times 6V = 132mW < 200mW$$

$\therefore$  符合条件 即  $U_O = 6V$

2.  $U_I = 20V$ ,  $R_L = 100\Omega$

假定  $U_O = U_Z = 6V$   $I_O = 60mA$

$$I = 28mA < I_O \therefore \text{不符 即稳压管无法正常工作}$$

$$U_O = U_I \cdot \frac{R_L}{R + R_L} = \frac{1}{6} \times 20V \approx 3.33V$$

3. 假定  $U_Z = 6V$

$$I = \frac{20 - 6}{500} = 28mA > 10mA$$

$$\text{且 } I \cdot U_Z = 28mA \times 6V = 168mW < 200mW$$

$\therefore$  稳压性能良好

4. 假定  $U_Z = U_O = 6V$

$$I = \frac{20 - 6}{500} = 28mA < 10mA$$

$\therefore$  无法稳压