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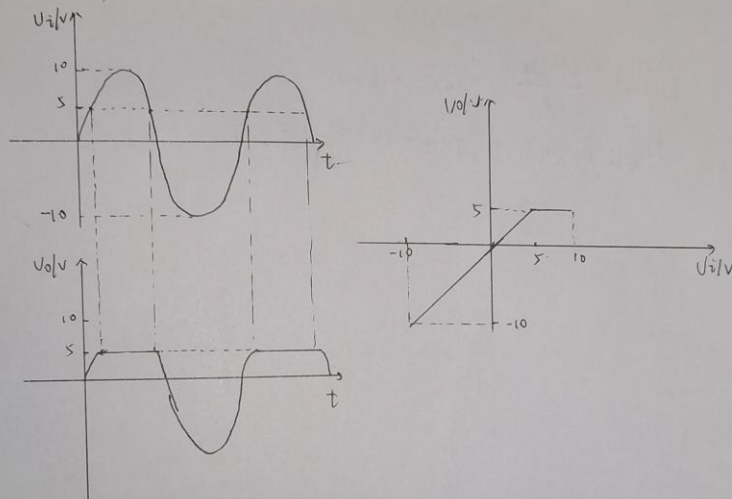
张轩铭

1-6. 1. $I = \frac{V - V_D}{R} = \frac{(10 - 0.7)V}{5.1k\Omega} \approx 1.8mA$

2. 温度升高, 硅管的正向压降减小, 即 V_D 减小, 那 I 随之增大

1-8 a) $u_i > 0$ 且 $u_i < 5V$, $u_o = u_i$; $u_i > 0$ 且 $u_i > 5V$, $u_o = 5V$

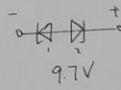
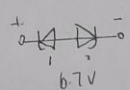
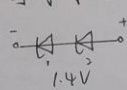
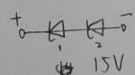
$u_i < 0$, $u_o = u_i$



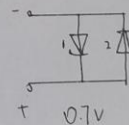
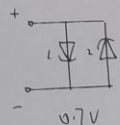
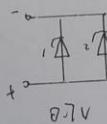
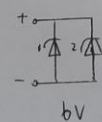
b) $u_i > 0$, 且 $u_i < 5V$, $u_o = u_i$; $u_i > 5V$, $u_o = 5V$

$u_i < 0$, $u_o = u_i$, 则图同上

1-9 4种



4种



1-10 1. $V_0 = \frac{R_L}{R_L + R} V_1 \approx \frac{20}{3} V > 6V$ 则假设 $V_0 = V_2 = 6V$

$I_0 = \frac{V_0}{R_L} = 6mA$ $I = \frac{V - V_0}{R} = 28mA$ $I_2 = I - I_0 = 22mA$

$I_{max} = \frac{P_{max}}{V} \approx 33mA$ $10mA$ $I_2 = 22mA < 33mA$

则 $V_0 = 6V$

$$2. \quad U_0 = \frac{R_L}{R_L + R} U_1 = 3.3V < 6V$$

则稳压管不能正常工作, $U_0 = 3.3V$

$$3. \quad I_2 = I = \frac{U_1 - U_Z}{R} = 28mA \quad 10mA < 28mA < 33mA$$

稳压管能正常工作

$$4. \quad I_{Zmax} = \frac{U - U_Z}{R} = 2mA < 10mA$$

即不论 R_L 如何变化, 稳压管都不能正常工作