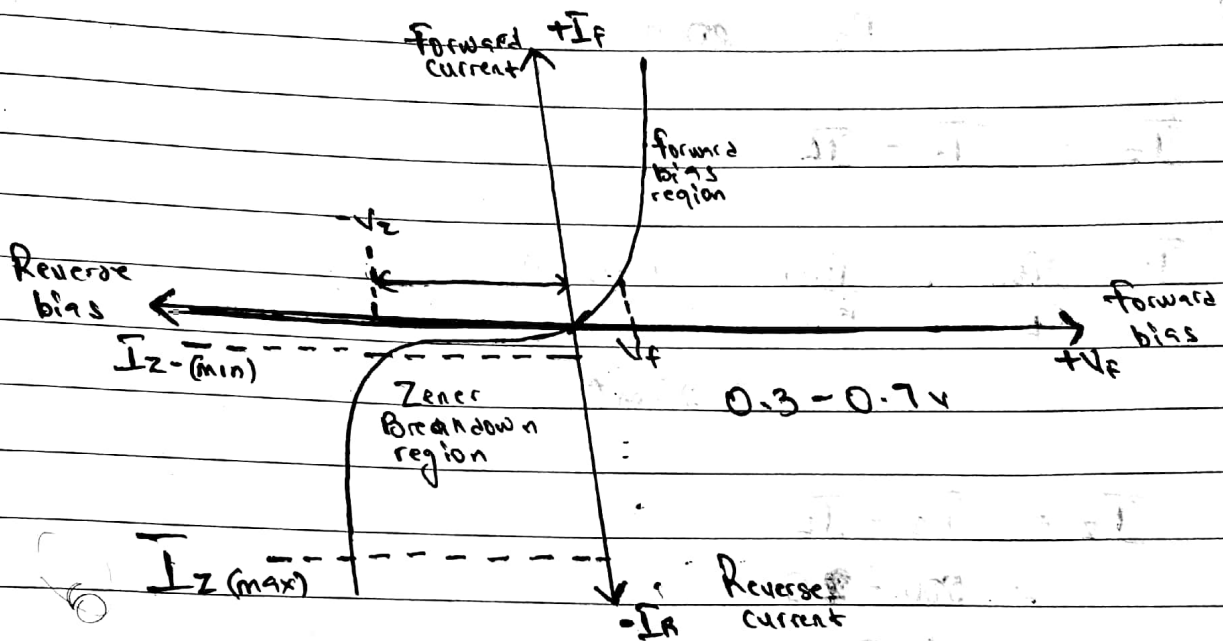
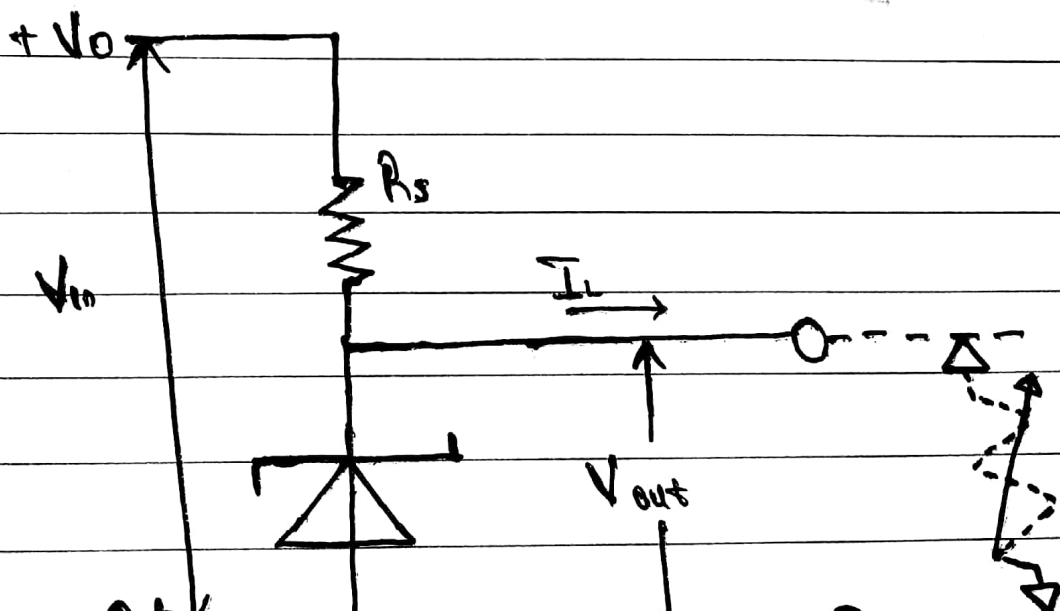


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A zener diode is a diode similar to the standard PN junction diode but they are specially designed to have a low specified reverse breakdown voltage.



I - V CHARACTERISTICS CURVE.



2

$$V_s = 20V$$

$$V_t = ?$$

$$\text{Maximum current} = 500\text{mA} = I_s$$

$$P_t = 5W$$

$$i \quad I_s = \frac{P_t}{V_t} = \frac{5}{500 \times 10^{-3}} = 10V$$

$$\therefore V_t = 10V$$

$$R_s = \frac{V_s - V_t}{I_s} = \frac{20 - 10}{500 \times 10^{-3}} = \frac{10}{500 \times 10^{-3}} = 20$$

$$R_s = 20 \Omega$$

$$ii \quad I_z = I_s - I_L$$

$$I_L = \frac{V_t}{R_L} = \frac{10}{500} = 0.02A$$

$$= 20\text{mA}$$

$$I_z = I_s - I_L$$

$$= 500 - 20$$

$$= 480$$

$$\therefore I_z = 480\text{mA}$$