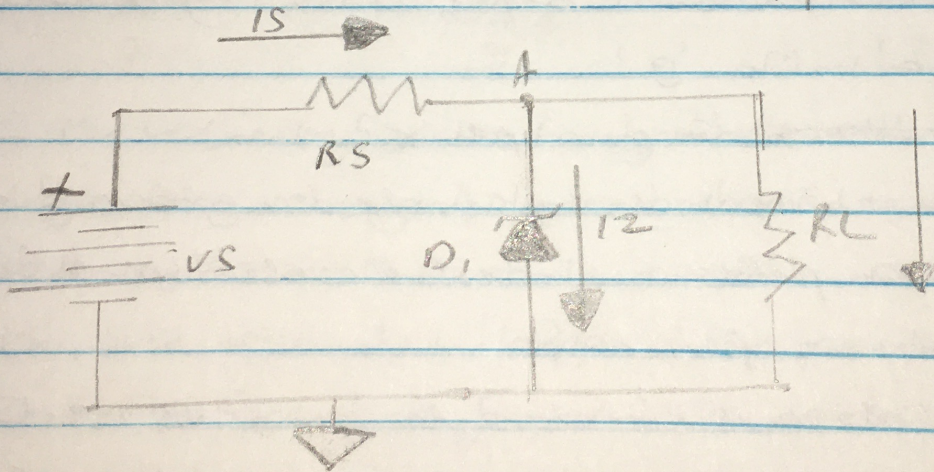
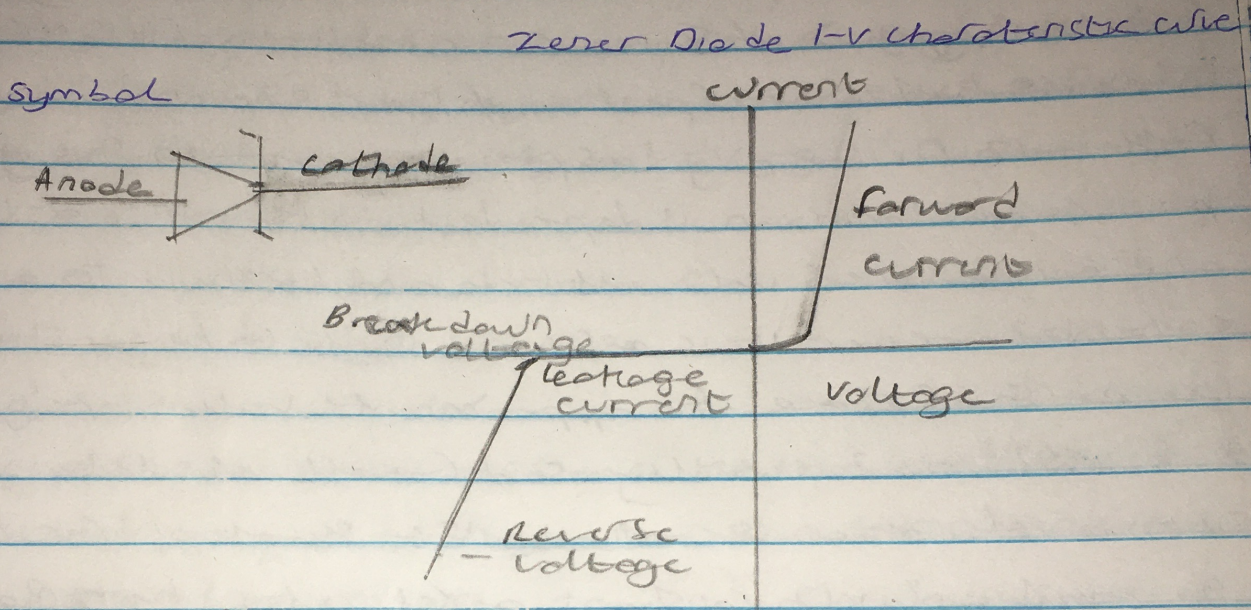


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1) A Zener diode is a form of semi-conductor diode in which at a critical reverse voltage a large reverse current can flow.



2) max power = S_w $P_z = S_{o\max} = 0.5W$, $Z_{o\max}$

1) max current = $\frac{\text{max power}}{\text{voltage}} = \frac{S_w}{V} = 0.5A$

$V_z = 10V$

Design of a different

$$\text{minimum resistance} = \frac{12.74 - 10}{0.5} = 5.48 \Omega$$

$$\text{Load current } I_L = \frac{V_L}{R_L} = \frac{10}{500} = 0.02 \text{ A or } 20 \text{ mA}$$

$$I_2 = I_1 - I_L$$

$$= 500 - 20 = 480 \text{ mA}$$