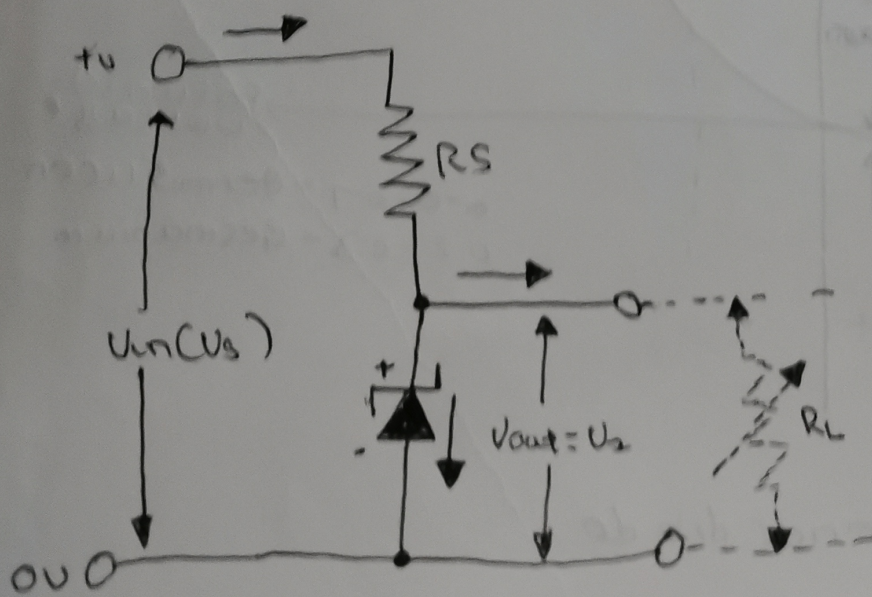


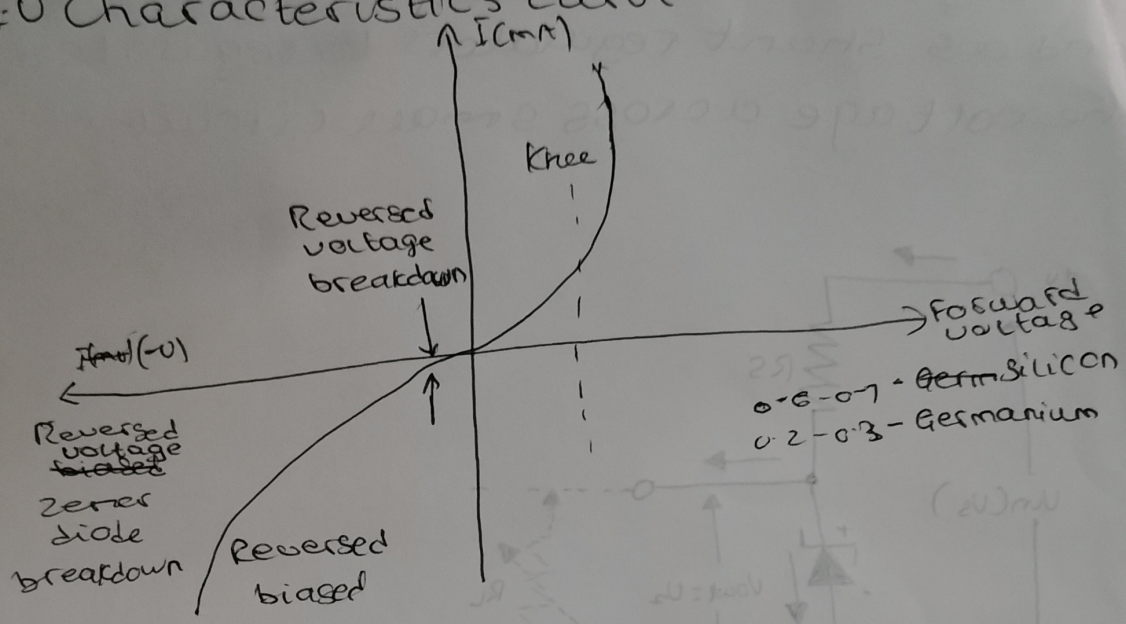
Zener diode regulator: They are widely used as voltage reference and as shunt regulators to regulate the voltage across small circuit



David David Lawrence  
 18/ENG06/039

Mechanical Engineering

1) I-V characteristics curve



2) First voltage of Zener diode

$$V_2 = \frac{\text{watt}}{\text{current}} = \frac{5}{500\text{mA}} = 10\text{V}$$

The minimum value

$$R_s = \frac{V_1 - V_2}{I_2} = \frac{20 - 10}{500\text{mA}}$$

$$R_s = 20\Omega$$

2b) current at 500Ω

$$I_2 = \frac{V_2}{R_L} = \frac{10}{500\Omega} = 0.02\text{A}$$