

***Stabilizator cu dioda zener***

$$R_{s_{min}} = \frac{V_{in_{min}} - V_Z}{I_Z}$$

$$R_{s_{max}} = \frac{V_{in_{max}} - V_Z}{I_Z}$$

$$R_{s_{min}} < R_s < R_{s_{max}}$$

***Stabilizator cu dioda zener + tranzistor***

$$R_s = \frac{V_{in} - V_Z}{I_Z + I_{out}} = \frac{V_{in} - V_Z}{I_Z + \frac{I_o}{\beta}}$$

$$V_{out} = V_Z - V_{BE}$$

***Stabilizator cu dioda zener + tranzistor + A.O. – Varianta 1***

$$R_s = \frac{V_{in} - V_Z}{I_Z}$$

$$V_Z = V_{out}$$

***Stabilizator cu dioda zener + tranzistor + A.O. – Varianta 2***

$$R_s = \frac{V_{in} - V_Z}{I_Z}$$

$$V_{out} = \left(1 + \frac{R_1}{R_2}\right) V_Z$$