FORMULARIO 1

ELECTRÓNICA ANALÓGICA

$$I_D = I_{satura}\left(e^{\frac{V_D}{n V_{term}}} - 1\right)$$

$$V_T = \frac{kT}{q} = \frac{1.38 \times 10^{-23}T}{1.6 \times 10^{-19}}$$

$$Ge = 0.3 \quad Si = 0.7 \quad Gaas = 1.2$$

$$P_{Dmax} = V_D I_D$$

$$r_D = \frac{\Delta V_d}{\Delta I_d}$$

$$R_D = \frac{V_D}{I_D}$$

$$E = V_D + I_D R$$

$$I_D = \left.\frac{E}{R}\right|_{V_D = 0 \, V}$$

$$V_D = E|_{I_D = 0 \, V}$$

$$V_D = V_K$$

$$V_R = E - V_k$$

$$I_D = I_R = \frac{V_R}{R}$$

$$V_{cd} = 0.318 \, V_m$$

$$V_{cd} \cong 0.318(V_m - V_k)$$

$$V_{cd} = 0.636 \, V_m$$

$$V_{cd} \cong 0.636(V_m - 2V_k)$$

$$V_i R \, dijos$$

$$V = V_L = \frac{R_L V_i}{R + R_L}$$

$$V_L = V_Z$$

$$I_Z = I_R - I_L$$

$$P_Z = V_Z I_Z$$

$$V_i \, dijo \, y \, R_L \, variable$$

$$V = V_L = \frac{R_L V_i}{R + R_L}$$

$$R_{Lmax} = \frac{R V_Z}{V_i - V_Z}$$

$$I_{L_{maxmax}} = \frac{V_L}{R_L} = \frac{V_Z}{R_{L_{max}}}$$

$$V_R = V_i - V_Z$$

$$I_R = \frac{V_R}{R}$$

$$I_Z = I_R - I_L$$

$$I_{L_{max}} = I_R - I_{ZM}$$

$$R_{L_{max}} = \frac{V_Z}{I_{L_{max}}}$$

$$P_{max} = V_Z I_{ZM}$$

$$R_L \, dija \, V_i \, var$$

$$V_{imax} = \frac{(R_L + R)V_Z}{R_L}$$
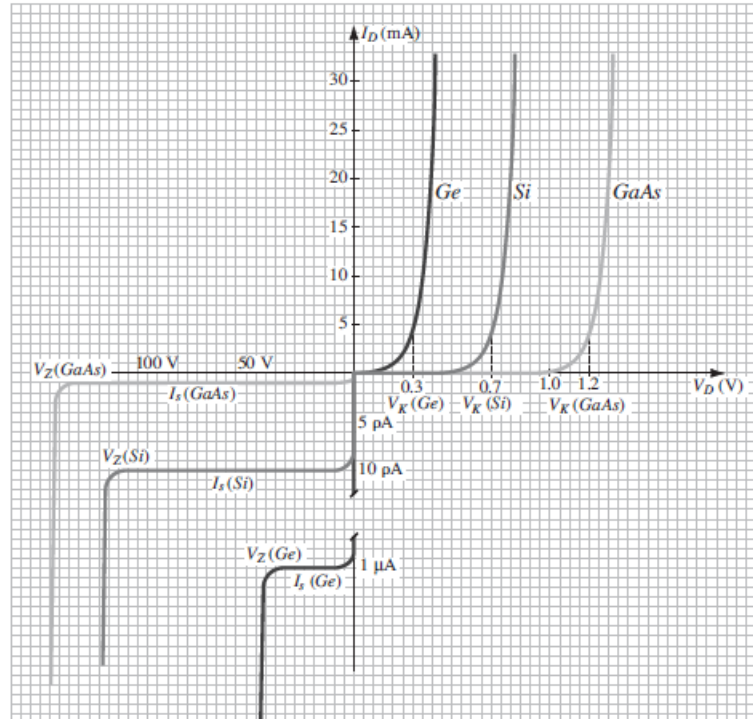
$$I_{Rmax} = I_{Zm} + I_L$$

$$V_{imax} = I_{R_{max}} R + V_Z$$

FIG. 1.18

Comparación de diodos de Ge, Si y GaAs.