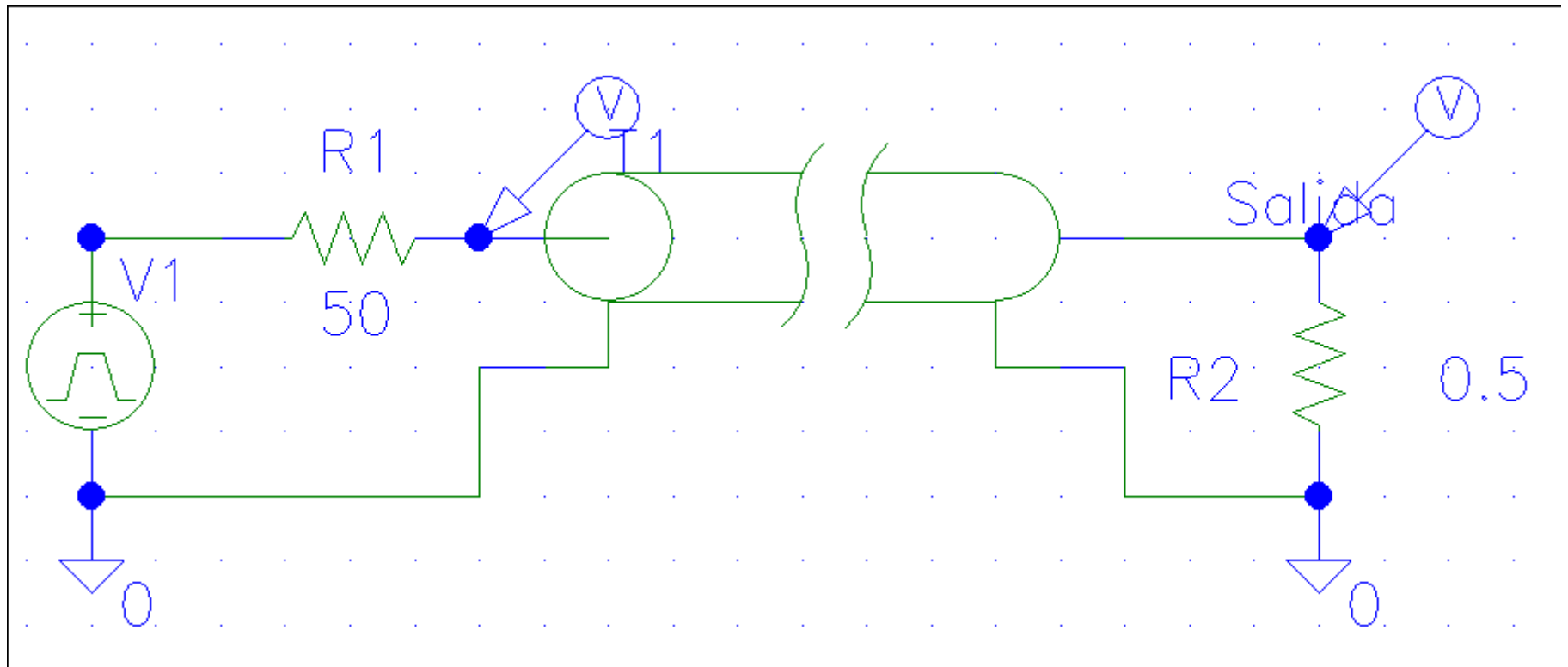


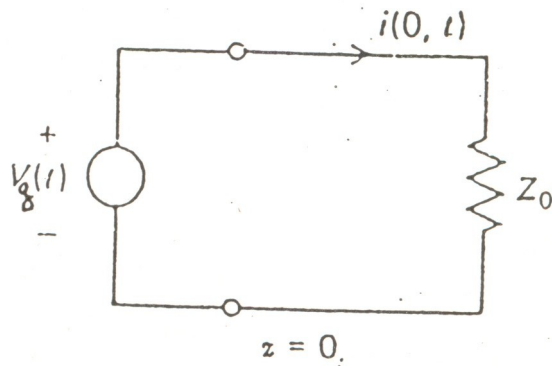
## **Práctica 4:**

# **Simulación de líneas de transmisión**

# *Circuito a simular con Pspice*



# Esquema eléctrico: cálculos



## 1 – Hallar Intensidad en T=0, z=0

Si  $Z_1 = \text{inf}$  o  $Z_1 = 0$

$$i(z=0, t=0) = i_0 = V/R = V1/(R1+Z_0)$$

sino

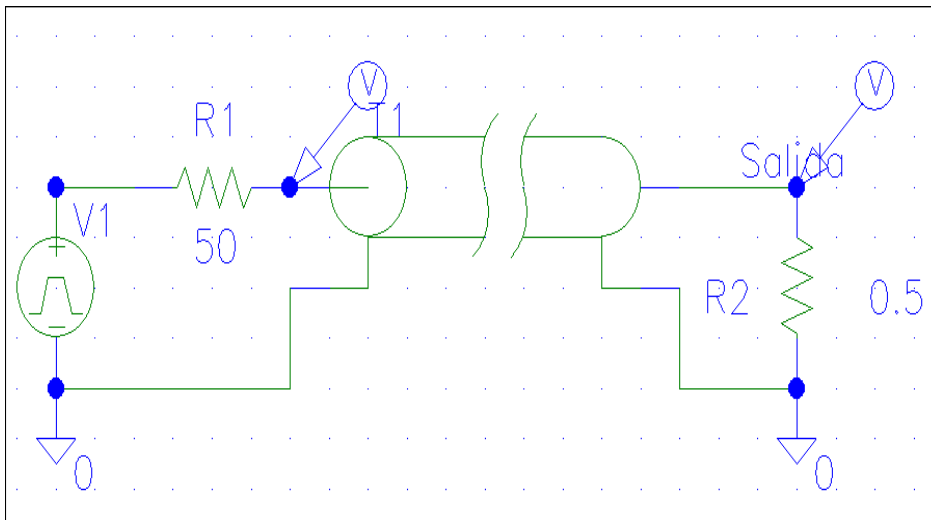
$$i(z=0, t=0) = i_0 = V/R = V1/(R1+Z_1)$$

$$i_0 = V1/(R1+Z_0) = 5/(50+75) = 0.04 \text{ A}$$

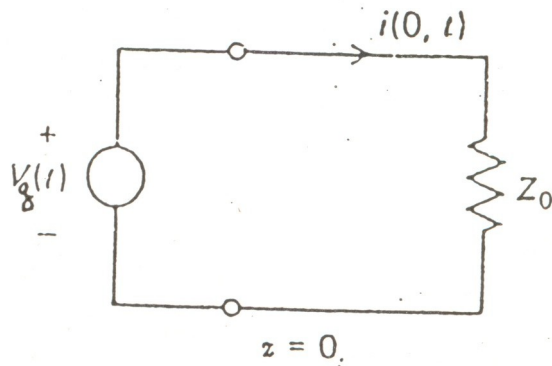
## 2 – Hallar tensión en T=0, z=0

$$v(z=0, t=0) = V1 - i_0 * R1$$

$$v(z=0, t=0) = 5 - 0.04 * 50 = 3 \text{ V}$$



# Esquema eléctrico: cálculos



## 3 – Hallar V en Tp, z=l)

$$v(z=l, t=T_p) = V_+ + V_- = 3 - 3 = 0 \text{ V.}$$

$$\text{CRef. Carga} = (R_2 - Z_0) / (R_2 + Z_0) = V_- / V_+$$

$$v(z=l, t=T_p) = 3 + V_- =$$

$$\text{CRef.} = (0.5 - 50) / (50 + 0.5) = -1 = V_- / V_+$$

$$V_- = -1 * V_+ = -3 \text{ V.}$$

## 4 – Hallar tensión en 2 Tp, 3Tp,...

$$v(z=0, t=2T_p) = V_+ + V_- + V_{\text{gen}} =$$

$$\text{CRef. Gen.} = (R_1 - Z_0) / (R_1 + Z_0) = V_- / V_+$$

$$V_{\text{gen}} = 0 \text{ V. (PER=1 ms., 2Tp= 800 ns.)}$$

$$\text{CRef.} = (50 - 50) / (50 + 50) = 0 = V_- / V_+$$

$$V_- = 0 * V_+ = 0 \text{ V.}$$

$$V_+ = V_- \text{ de } v(z=l, t=T_p) = -3 \text{ V.}$$

$$v(z=0, t=2T_p) = -3 + 0 + 0 = -3 \text{ V.}$$

