

ES1 1) RISOLUZIONE CIRCUITO \rightarrow VEDI LEZIONI 6

$$V_U = \frac{R_G}{R_1} E \left(\frac{R_T}{R_3} - 1 \right)$$

$$R_T = R_0 (1 + G_F E) (1 + TCR \Delta T)$$

$$\Delta T = T - T_0$$

$$T_0 = 25^\circ \text{C}$$

$$V_U = \frac{R_G}{R_1} E \left(\frac{\cancel{R_0} (1 + G_F E) (1 + TCR \Delta T)}{\cancel{R_3}} - 1 \right) =$$

$$= \frac{R_G}{R_1} E \left(\cancel{1} + G_F E + TCR \Delta T + G_F E TCR \Delta T - \cancel{1} \right) =$$

$$= \frac{R_G}{R_1} E (G_F E + TCR \Delta T)$$

$$S = \frac{\partial V_U}{\partial E} = \frac{R_G}{R_1} E \overset{\substack{\rightarrow 5V \\ \downarrow 3}}{G_F} = 1500 \text{ [V]}$$

$\Sigma 100$

$$V_U = \underbrace{S E}_{\text{VIDEOCO}} + S \underbrace{\frac{TCR \Delta T}{G_F}}_{\Delta V}$$

VIDEOCO

$\Delta V \rightarrow$ DOWTA ALL'EFFETTO di T E NON NOTA

$$\epsilon_{\text{RISONANZA}} = \frac{V_U}{S} = \frac{3V}{1500} = 2 \cdot 10^{-3} \Rightarrow 2 \cdot 10^3 = 2000 \text{ M}\%$$

$$\text{ERRORE} \rightarrow \frac{\Delta V}{S} \Rightarrow \frac{TCR \Delta T}{G_F} \Delta T \neq \Delta \text{ ~~ERRORE~~ }$$

$$\text{ERRORE} = \frac{3 \cdot 10^{-5}}{3} \overset{\substack{\rightarrow 20^\circ \text{C} \\ \downarrow 25^\circ \text{C}}}{(T - T_0)} = -5 \cdot 10^{-5} = \text{ ~~ERRORE~~ }$$

$-5 \cdot 10 \text{ M}\% = -50 \text{ M}\%$

3)

$$| \text{ERRORE} | = \frac{\text{TCR}}{GF} |\Delta T|$$

$$\Rightarrow \frac{\text{TCR}}{GF} |\Delta T| < 10 \cdot 10^{-6}$$

$$\Rightarrow |\Delta T| < 10 \cdot 10^{-6} \frac{GF}{\text{TCR}} = 10 \cdot 10^{-6} \frac{10^5}{3 \cdot 10^{-5}} = 1^\circ \text{C}$$

$$\Rightarrow \boxed{\quad} \quad \boxed{\quad} \quad |T - T_0| < 1^\circ \text{C}$$

$$\Rightarrow [24; 26]$$

DUNN GAGE \rightarrow COSE R_T

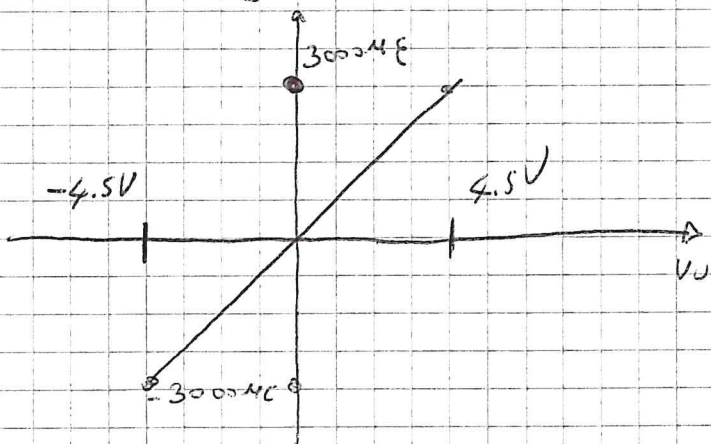
$$R_0 (1 + \text{TCR} \Delta T)$$

NOTATO AL POSTO DI R_3

2)

~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~

$$X = \frac{Y - 0}{5} \Rightarrow \varepsilon = \frac{V_0}{5}$$



$$V_0 = 5 \varepsilon = 1500 \cdot 3000 \cdot 10^{-6} = 4.5 \text{V}$$

$$c = \frac{1}{5} = 6.6667 \cdot 10^{-4} [\text{V}^{-1}]$$