

PUNTO 1

$$V_U = -R_G I_{RG}$$

$$I_{RG} = I_3 + I_2$$

$$I_2 = E/R_2$$

$$I_3 = \frac{V_{U2}}{R_3}$$

$$V_{U2} = -R_T I_1$$

$$I_1 = E/R_1$$

$$V_{U2} = -\frac{R_T}{R_1} E$$

$$I_3 = -\frac{R_T}{R_1 R_3} E$$

$$\Rightarrow V_U = -R_G (I_3 + I_2) = -R_G \left(-\frac{R_T}{R_1 R_3} E + \frac{E}{R_2} \right)$$

$$V_U = E R_G \left(\frac{R_T}{R_1 R_3} - \frac{1}{R_2} \right) \rightarrow \text{RISOLUZIONE CIRCUITO}$$

$$V_U = E R_G \left(\frac{R_T}{R_1 R_3} - \frac{1}{R_2} \right) \underset{R_1 = R_2}{=} E \frac{R_G}{R_1} \left(\frac{R_T}{R_3} - 1 \right)$$

$$R_T = R_0 (1 + G^F E) (1 + \alpha \Delta T) \quad \Delta T = T - T_0 \quad T_0 = 25^\circ \text{C}$$

$$V_U = E \frac{R_G}{R_1} \left[\frac{\cancel{R_0} (1 + G^F E) (1 + \alpha \Delta T)}{\cancel{R_3}} - 1 \right] = E \frac{R_G}{R_1} [G^F E + \alpha \Delta T + \cancel{G^F E \alpha \Delta T}]$$

$$V_U = \underbrace{E \frac{R_G}{R_1} G^F E}_S + \underbrace{E \frac{R_G}{R_1} \alpha \Delta T}_{\Delta V} = S E + S \cdot \frac{\alpha \Delta T}{G^F}$$

$\frac{E R_G}{R_1} \frac{G^F}{G^F}$

SUGGERIMENTO

$$\varepsilon_M = \frac{V_U}{S} = \frac{3V}{S} = 0.002 \rightarrow 2000 \mu \varepsilon$$

$$\text{ERRORE} = \frac{\Delta V}{S} = \frac{\alpha \Delta T}{G^F}$$

||

- 50 $\mu \varepsilon$

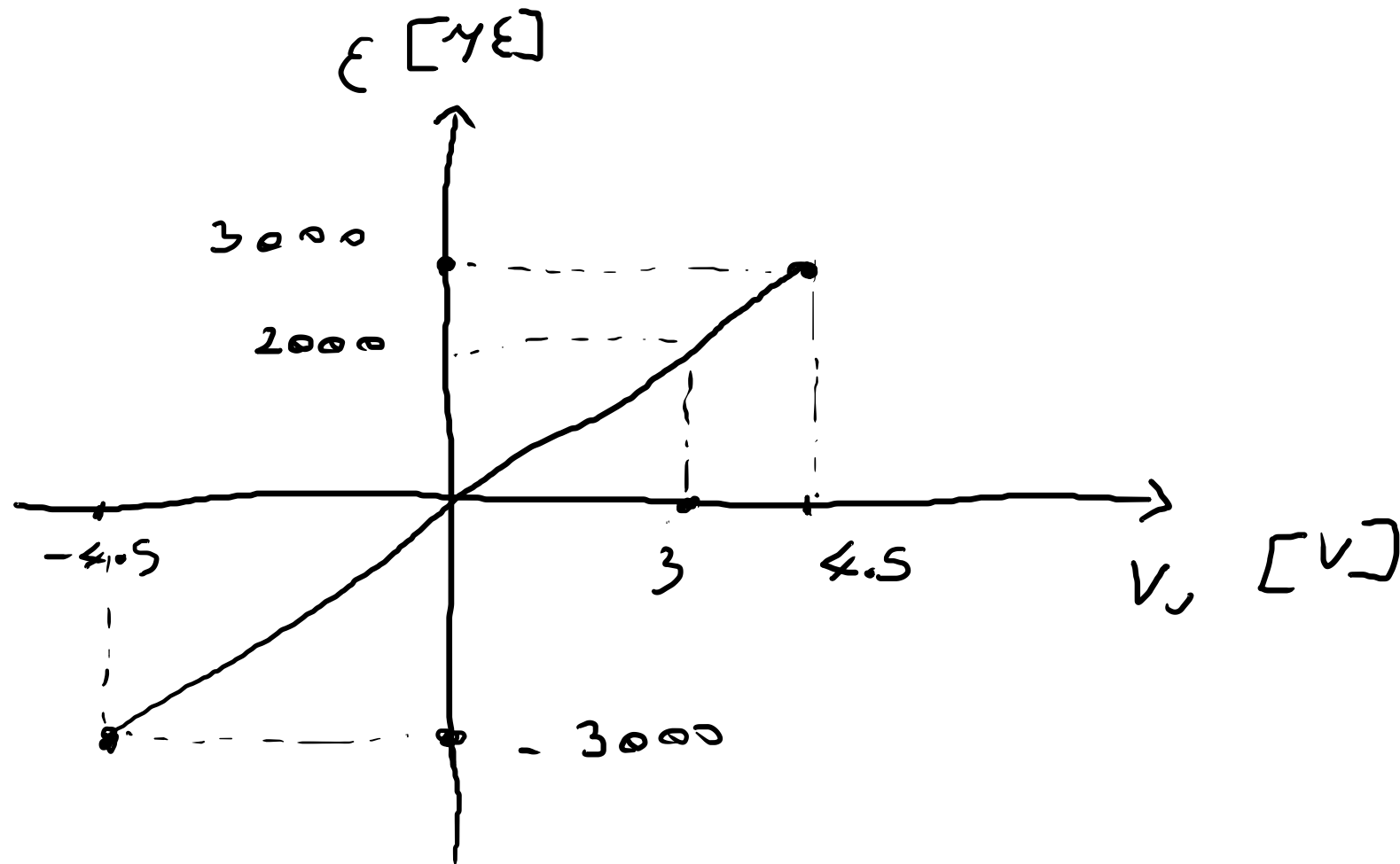
$$S = E R_G / R_1 G^F = 1500 \text{ V}$$

PUNTO 2

$$\xi = V_U / S \rightarrow \text{CURVA TARETURA}$$

$$C = \frac{1}{S} = 6.67 \cdot 10^{-5} \text{ [V}^{-1}\text{]}$$

$$V_U (\pm 3000 \text{ }\mu\text{V}) = \pm 3000 \cdot 10^{-6} = 4.5 \text{ V}$$



PUNTO 3

$$ERRORE = \frac{\alpha |\Delta T|}{G_F} < 10 \cdot 10^{-6}$$

$$|\Delta T| < \frac{G_F}{\alpha} 10 \cdot 10^{-6}$$

$$|\Delta T| < 1^\circ\text{C} \Rightarrow \text{RANGE } [T_0 - 1; T_0 + 1] \rightarrow [24; 26]^\circ\text{C}$$

$$R_{OG} = R_0 (1 + G_F \varepsilon) (1 + \alpha \Delta T) \longrightarrow \text{IDENTICO A } R_+ \text{ E MONTATO AL POSTO DI } R_3$$