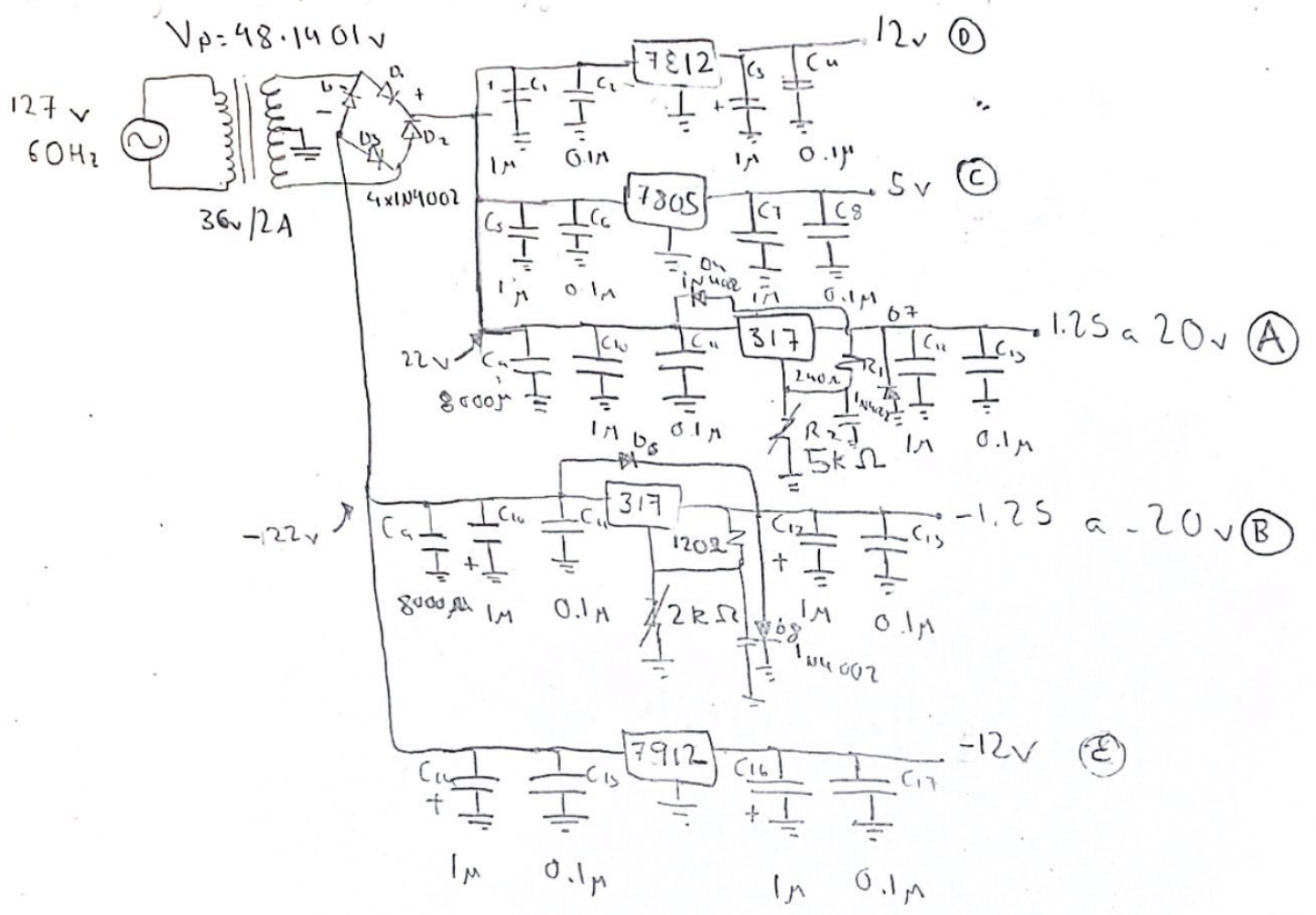


Tarea 1.9 Fuentes de voltaje

Ramírez Zotonieto Luis Fernando

- Ⓐ Voltaje variable positivo 1.25-20v a 1.2A
- Ⓑ Voltaje variable negativo 1.25-20v a 1.2A
- Ⓒ Voltaje Fijo de 12v a 1.2A
- Ⓓ Voltaje Fijo -12v a 1.2A
- Ⓔ Voltaje Fijo 5v a 1.2A



Voltage positivo variable

$$V_o = 1.25 \left(1 + \frac{R_2}{R_1} \right) \quad \text{Ⓐ} \quad V_o = 1.25 = 1.25 \left(1 + \frac{R_2}{R_1} \right)$$

$$\frac{R_2}{R_1} = 0 \text{ cuando } R_2 = 0$$

$$V_o = 20v = 1.25 \left(1 + \frac{R_2}{240} \right)$$

$$\frac{20v}{1.25v} = \left(1 + \frac{R_2}{240} \right)$$

$$16v - 1 = \frac{R_2}{240}$$

$$R_2 = (240)(16v - 1)$$

$$R_2 = (240)(15)$$

$R_2 = 3600\Omega$
 ó
 5kΩ
 valor comercial

Voltage negative variable

$$V_o = -1.25 \left(1 + \frac{R_2}{R_1} \right)$$

$$\textcircled{B} \quad V_o = -20V = -1.25 \left(1 + \frac{R_2}{120} \right)$$

$$-1.25 = -1.25 \left(1 + \frac{R_2}{120} \right)$$

$$\frac{-20}{-1.25} = 1 + \frac{R_2}{120}$$

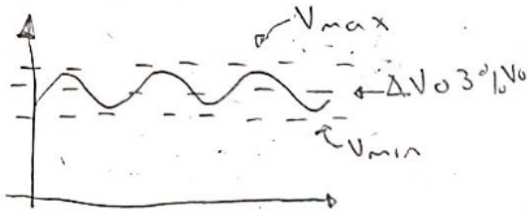
$$\frac{R_2}{120} = 0 \quad R_2 = 0$$

$$(16 - 1)(120) = R_2$$

$$(15)(120) = 1800 \Omega$$

$$R_2 = 18.00 \Omega$$

ó
2K valor
comercial



$$\Delta V_o = 3\% V_o = 0.03 V_o$$

$$\Delta V_o = V_{max} - V_{min}$$

$$V_o = \frac{V_{max} + V_{min}}{2}$$

$$V_{rms} = \frac{V_p}{\sqrt{2}}$$

$$V_{rms} = 34.0401V$$

transformador de:

$$36V \text{ a } 2A$$

$$V_{min} = V_o - \frac{1}{2} \Delta V_o$$

$$= V_o - \frac{1}{2} (0.03 V_o)$$

$$= V_o - 0.015$$

$$= V_o (1 - 0.015)$$

$$V_{min} = 0.985$$

$$V_o = \frac{V_{min}}{0.985} \rightarrow V_o = \frac{44V}{0.985} = 44.67V$$

$$V_{max} = V_{min} + \Delta V_o$$

$$V_{max} = 0.985 V_o + 0.03 V_o$$

$$= 1.015 V_o$$

$$= 1.015 (44.67)$$

$$V_{max} = 45.3401V$$

$$V_{max} = (V_p - 2V_o)$$

$$V_p = V_{max} + 2V_o$$

$$V_p = 45.3401 + 2(0.7) \rightarrow V_p = 48.1401V$$

Voltage F₁₀

$$\Delta V_0 = 3\% V_0 = 0.03 V_0$$

$$\Delta V_0 = 0.03(44.67V)$$

$$\Delta V_0 = 1.3401$$

$$\Delta V_0 = (V_p - 2V_0) \left(\frac{1}{2fRC} \right)$$

$$R_0 = \frac{V_0}{I_0} = \frac{44.67V}{1.2A}$$

$$R_0 = 37.225$$

$$V_{p1} = V_p$$

$$V_{p1} = 48.1401V$$

$$C = (V_p - 2V_0) \left(\frac{1}{2fR_0 \Delta V_0} \right)$$

$$C = (48.1401V - 1.4V) \left(\frac{1}{2 \times 60 \times 37.225 \times 1.3401} \right)$$

$$C = (46.7401)(3.3410 \times 10^{-4})$$

$$C = 0.0156158F$$

$$\frac{C}{2} = \frac{0.0156158}{2}$$

$$C_F = 7.807 \mu F$$
$$C_F = 8000 \mu F$$