

# Práctica N°1. Parte 1. Amplificador de potencia

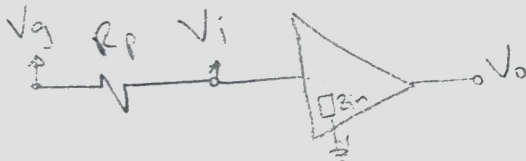
| Mediciones para hallar punto de operación |       |                |       |                |       |                |
|---|-------|----------------|-------|----------------|-------|----------------|
| Transistor                                | Vc[V] | $\Delta Vc[V]$ | Vb[V] | $\Delta Vb[V]$ | Ve[V] | $\Delta Ve[V]$ |
| Q4  | 300m  | $\pm 20mV$     | 0V    | $\pm 20m$      | -600m | $\pm 40m$      |
| Q5  | 10    | $\pm 1V$       | 600m  | $\pm 40m$      | 0     | $\pm 20mV$     |
| Q6  | -10   | $\pm 1V$       | -600m | $\pm 40m$      | 0     | $\pm 20m$      |

| Mediciones de ganancia en la Etapa de Potencia (EP) |                |       |                |        |                 |
|---|----------------|-------|----------------|--------|-----------------|
| Vi[V]   | $\Delta Vi[V]$ | Vo[V] | $\Delta Vo[V]$ | A[V/V] | $\Delta A[V/V]$ |
| 1   | $\pm 100m$     | 1     | $\pm 100m$     | 1      | $\pm 141.42m$   |

| Medición de impedancias de entrada |                |       |                |       |                |        |                 |
|------------------------------------|----------------|-------|----------------|-------|----------------|--------|-----------------|
| Vg[V]                              | $\Delta Vg[V]$ | Vi[V] | $\Delta Vi[V]$ | Rp[Ω] | $\Delta Rp[Ω]$ | Zin[Ω] | $\Delta Zin[Ω]$ |
| 1                                  | $\pm 100m$     | 500m  | $\pm 100$      | 11K   | $\pm 1\%$      | 11K    | $\pm 492K$      |

| Medición de impedancias de Salida |                    |          |                    |       |                |       |                |
|-----------------------------------|--------------------|----------|--------------------|-------|----------------|-------|----------------|
| Vo_sc[V]                          | $\Delta vo\_sc[V]$ | Vo_cc[V] | $\Delta Vo\_cc[V]$ | Rp[Ω] | $\Delta Rp[Ω]$ | Zo[Ω] | $\Delta Zo[Ω]$ |
| 1                                 | $\pm 100m$         | 900m     | $\pm 100m$         | 130   | $\pm 5\%$      | 20    | $\pm 29.91$    |

⊗ Z<sub>in</sub>



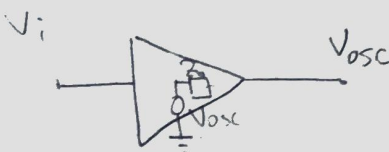
$$V_i = \frac{V_g Z_{in}}{Z_{in} + R_p}$$

$$V_i Z_{in} + R_p V_i = V_g Z_{in} \Rightarrow V_g Z_{in} - V_i Z_{in} = R_p V_i$$

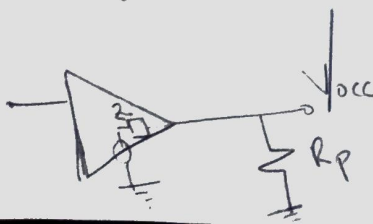
$$Z_{in} = \frac{V_i R_p}{V_g - V_i}$$

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⊗ Z<sub>out</sub>



$$V_{oc} = \frac{V_{osc} R_p}{R_p + Z_o} \Rightarrow Z_o V_{oc} + V_{oc} R_p = V_{osc} R_p$$



$$Z_o = \frac{V_{osc} R_p - V_{occ} R_p}{V_{occ}}$$