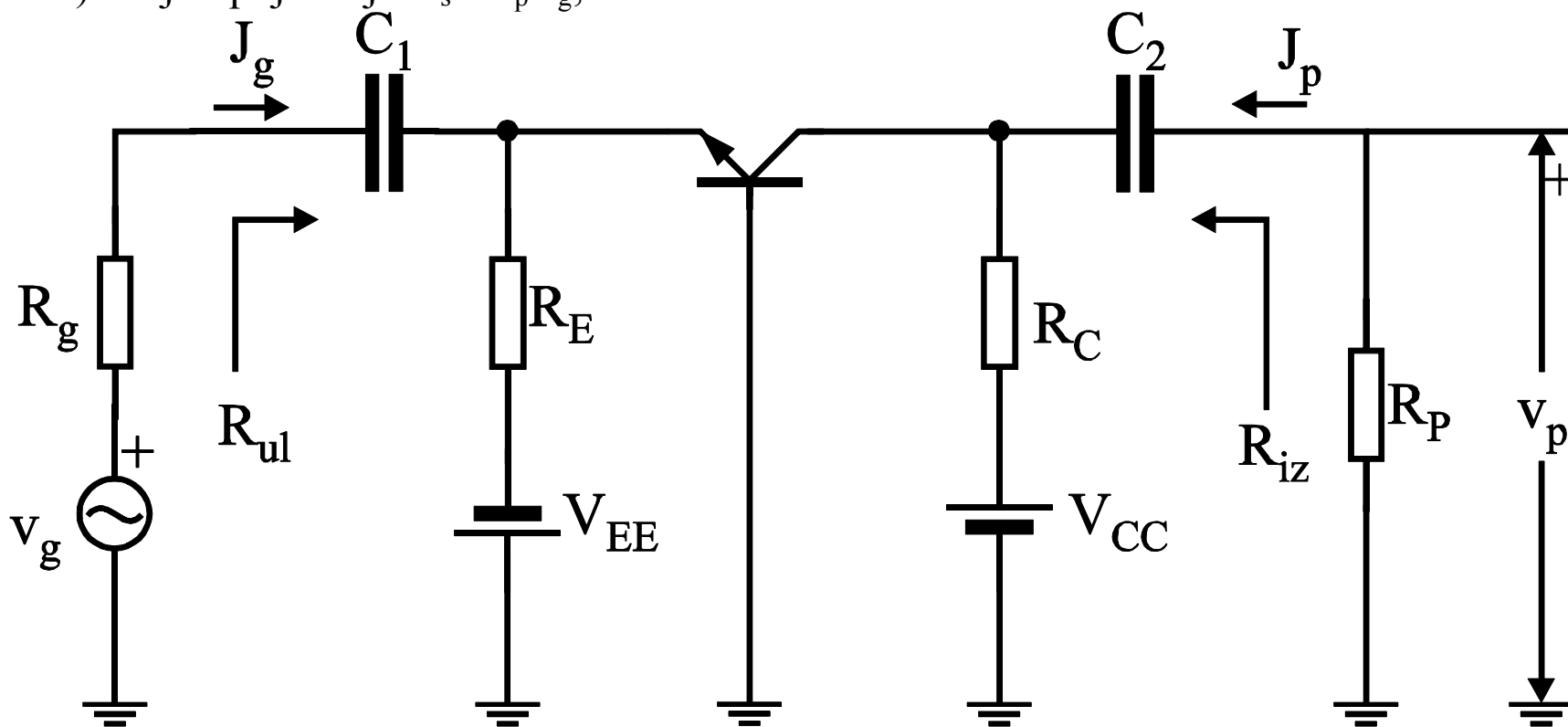


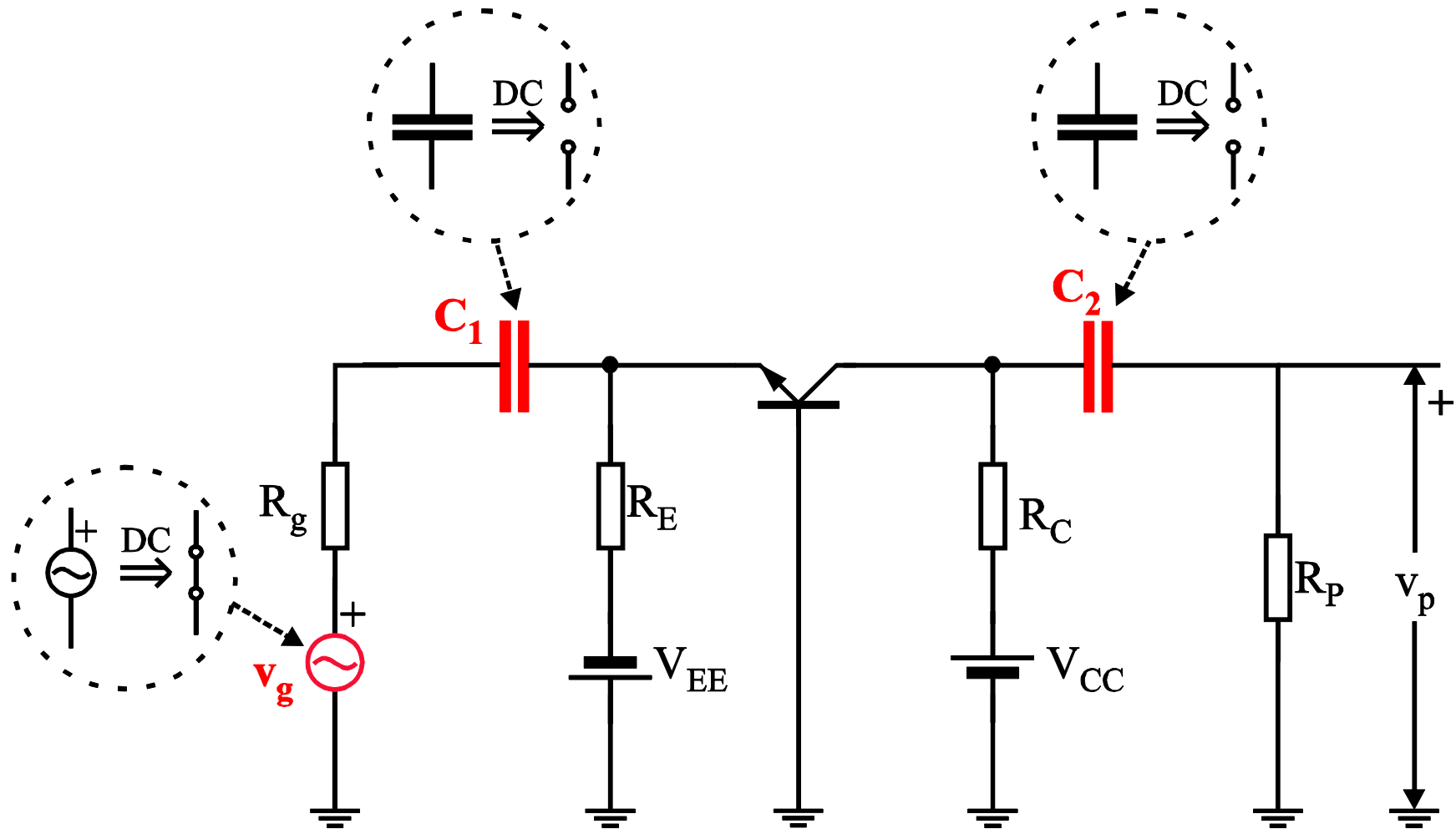
17. ZADATAK

Na slici je prikazan pojačavač u spoju sa zajedničkom bazom. Odrediti:

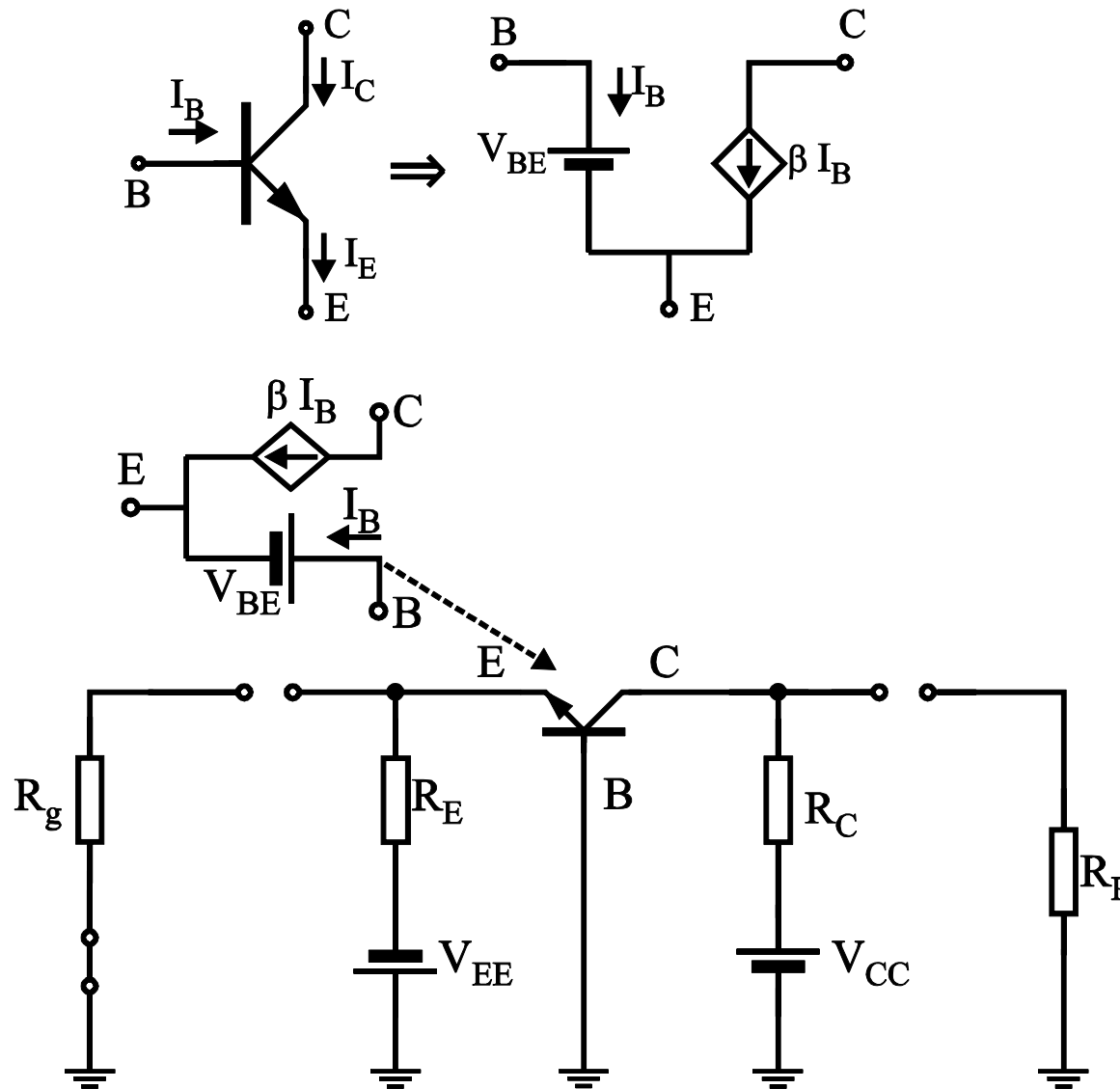
- naponsko pojačanje $A = v_p/v_g$;
- ulaznu otpornost pojačavača R_{ul} ;
- izlaznu otpornost tranzistora R_{iz} ;
- strujno pojačanje $A_s = J_p/J_g$;



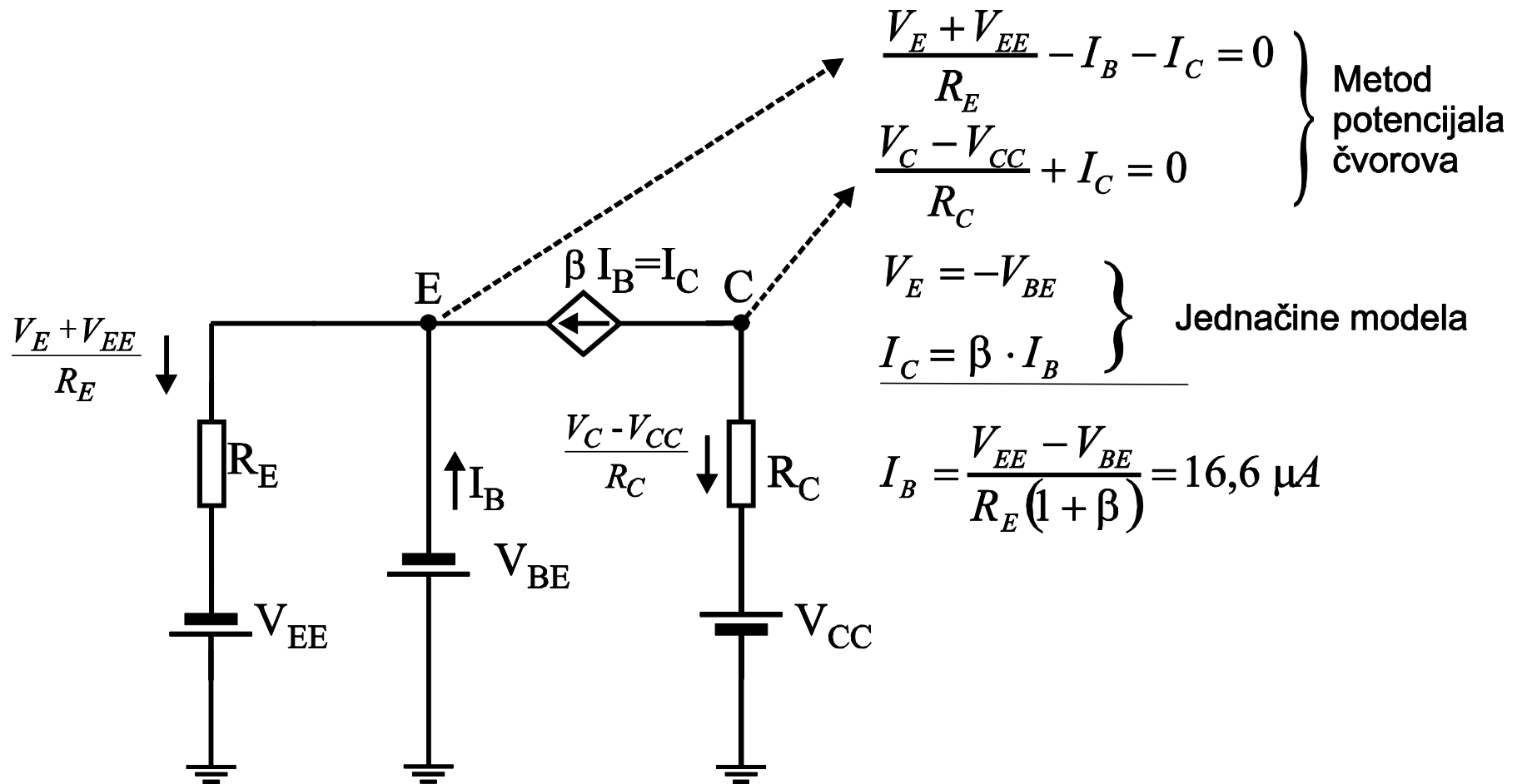
Jednosmerni režim



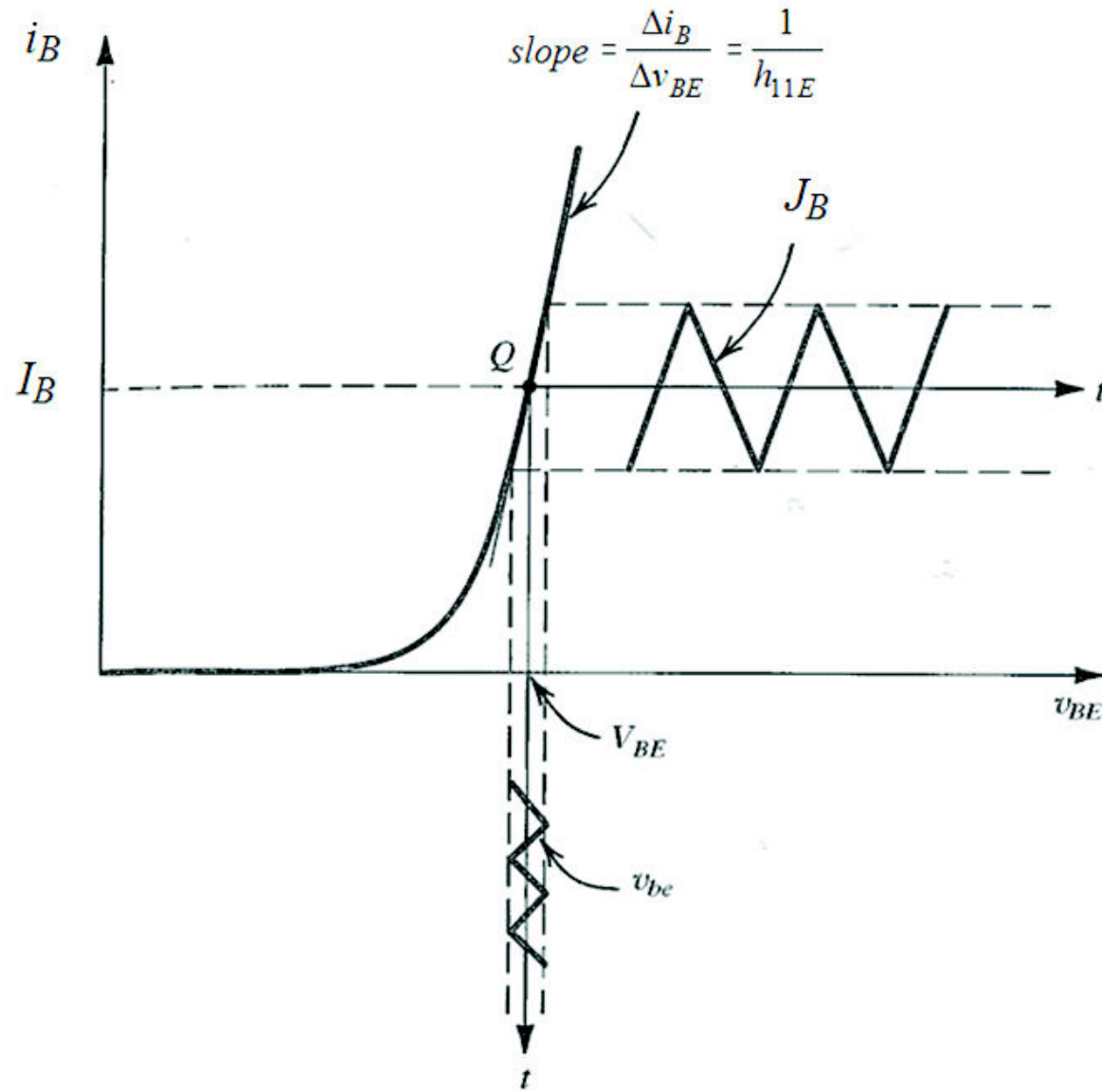
Jednosmerni režim



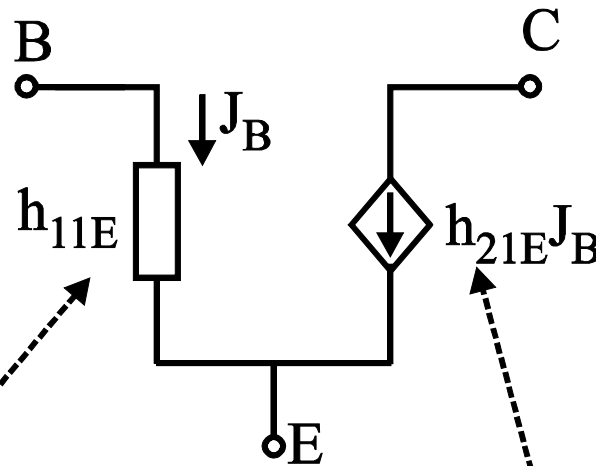
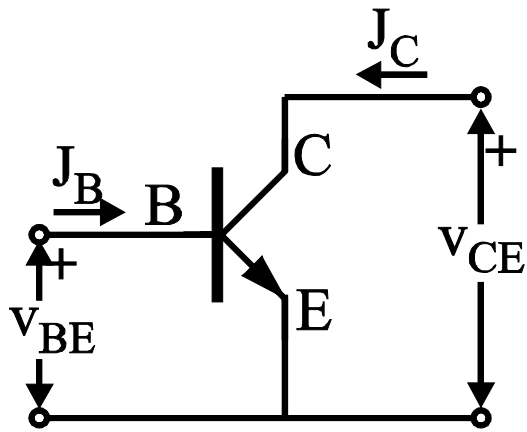
Jednosmerni režim



Određivanje dinamičkih parametara



Određivanje dinamičkih parametara



$$h_{22E} = 0 \text{ S}$$

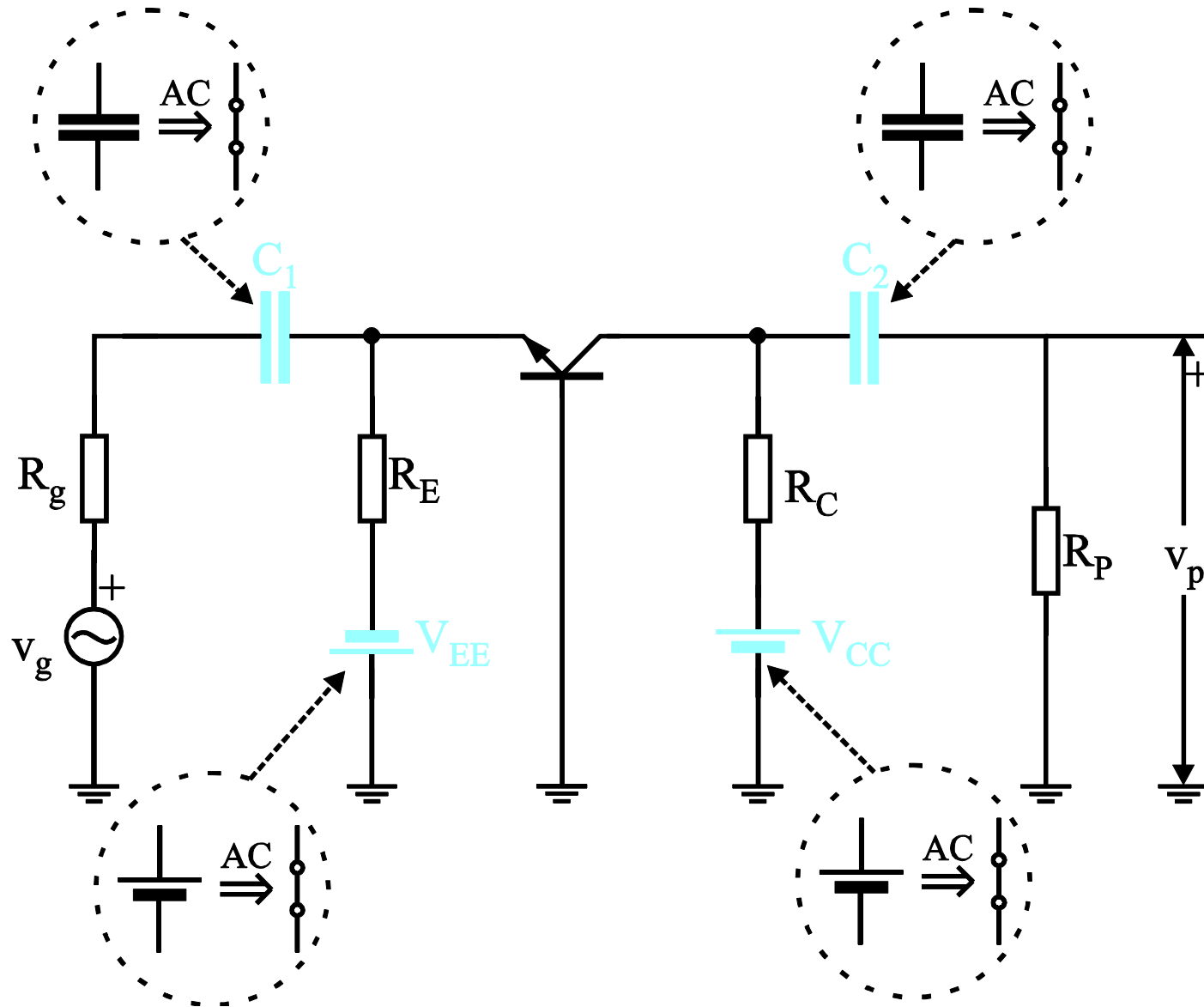
$$h_{12E} = 0$$

$$h_{11E} = \frac{V_t}{I_B} = 1,56 \text{ k}\Omega$$

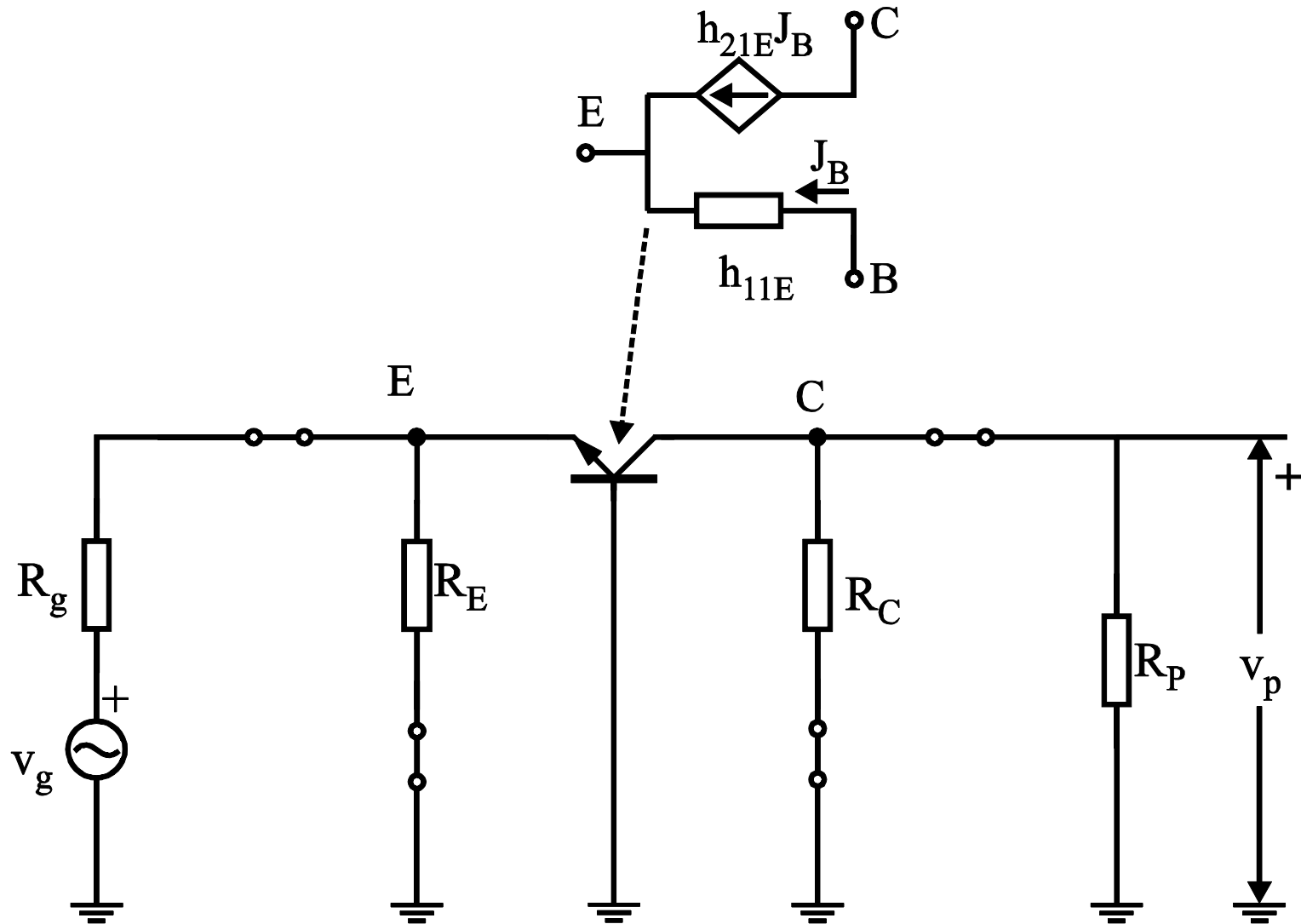
$$h_{21E} = \beta$$

$$V_t = \frac{kT}{q} = 26 \text{ mV}$$

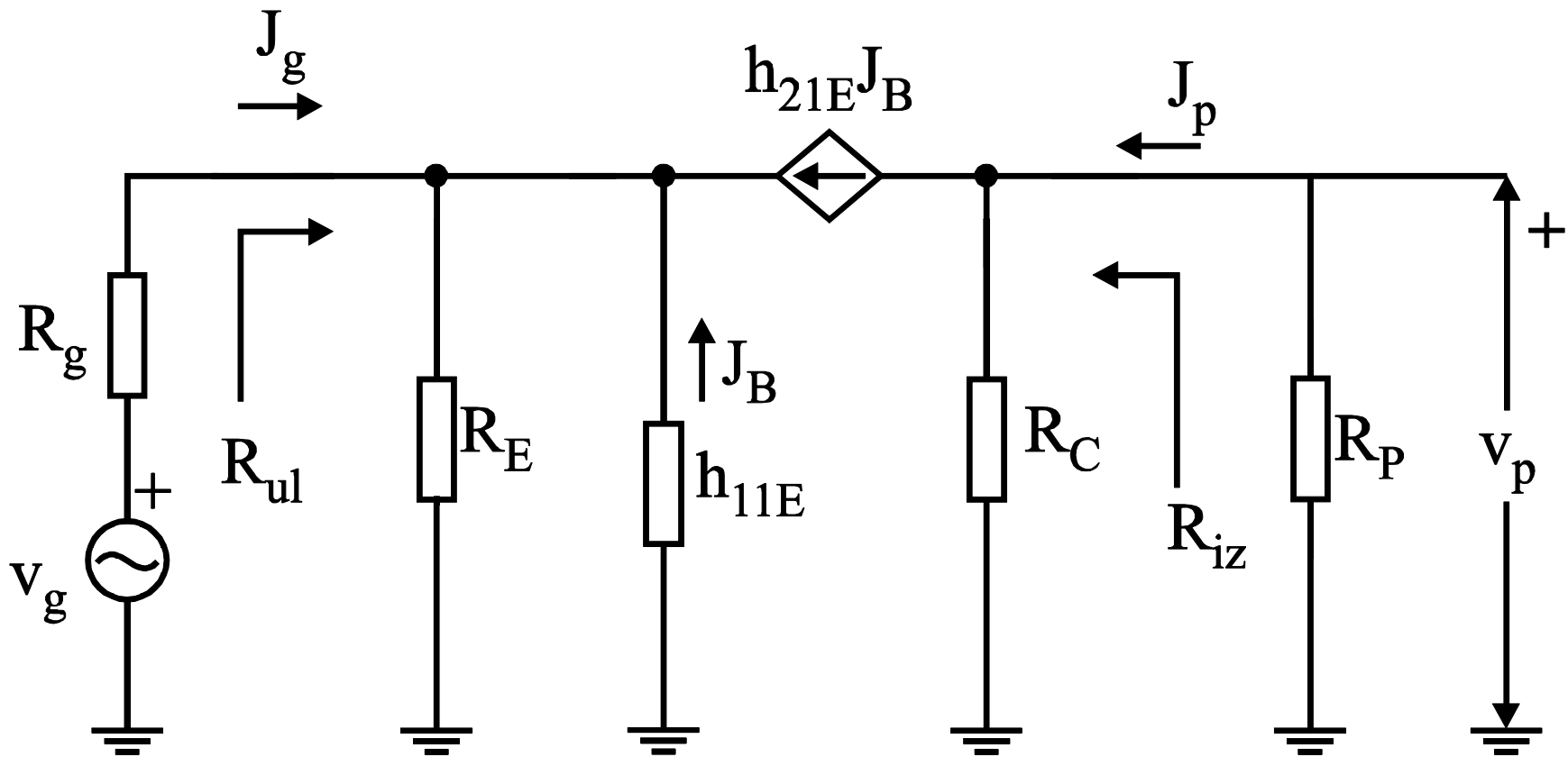
Naizmenični režim



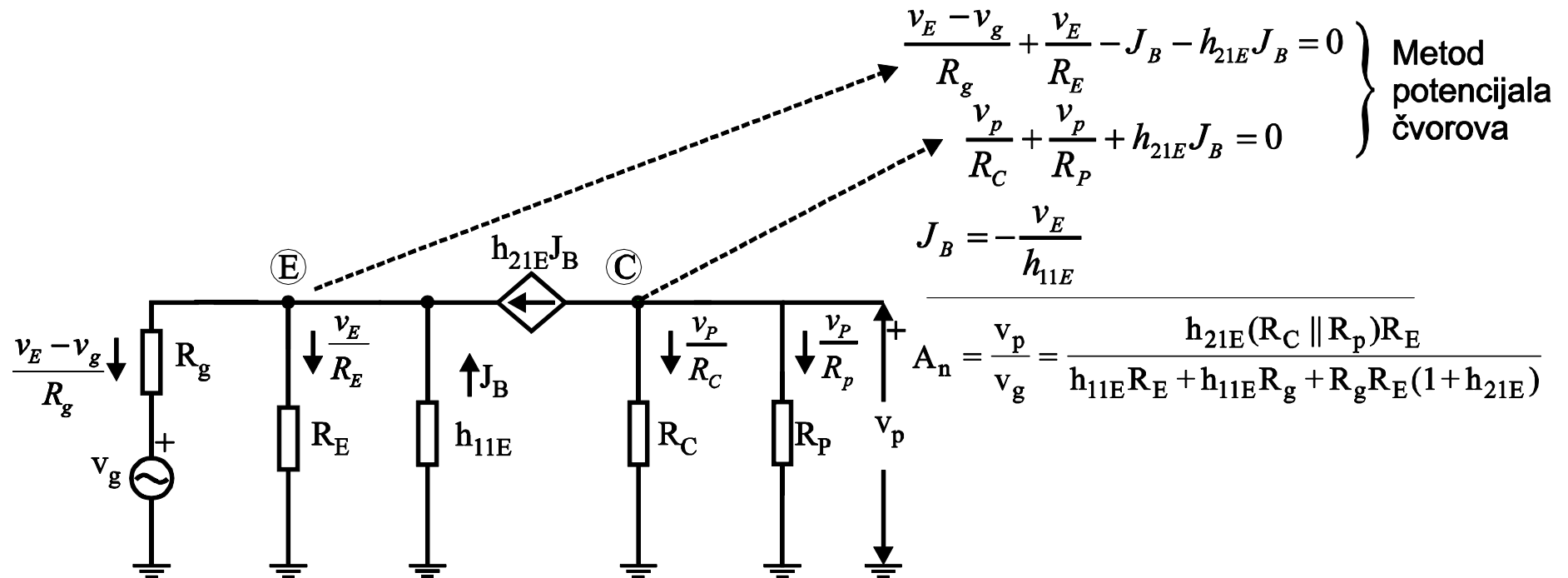
Naizmenični režim



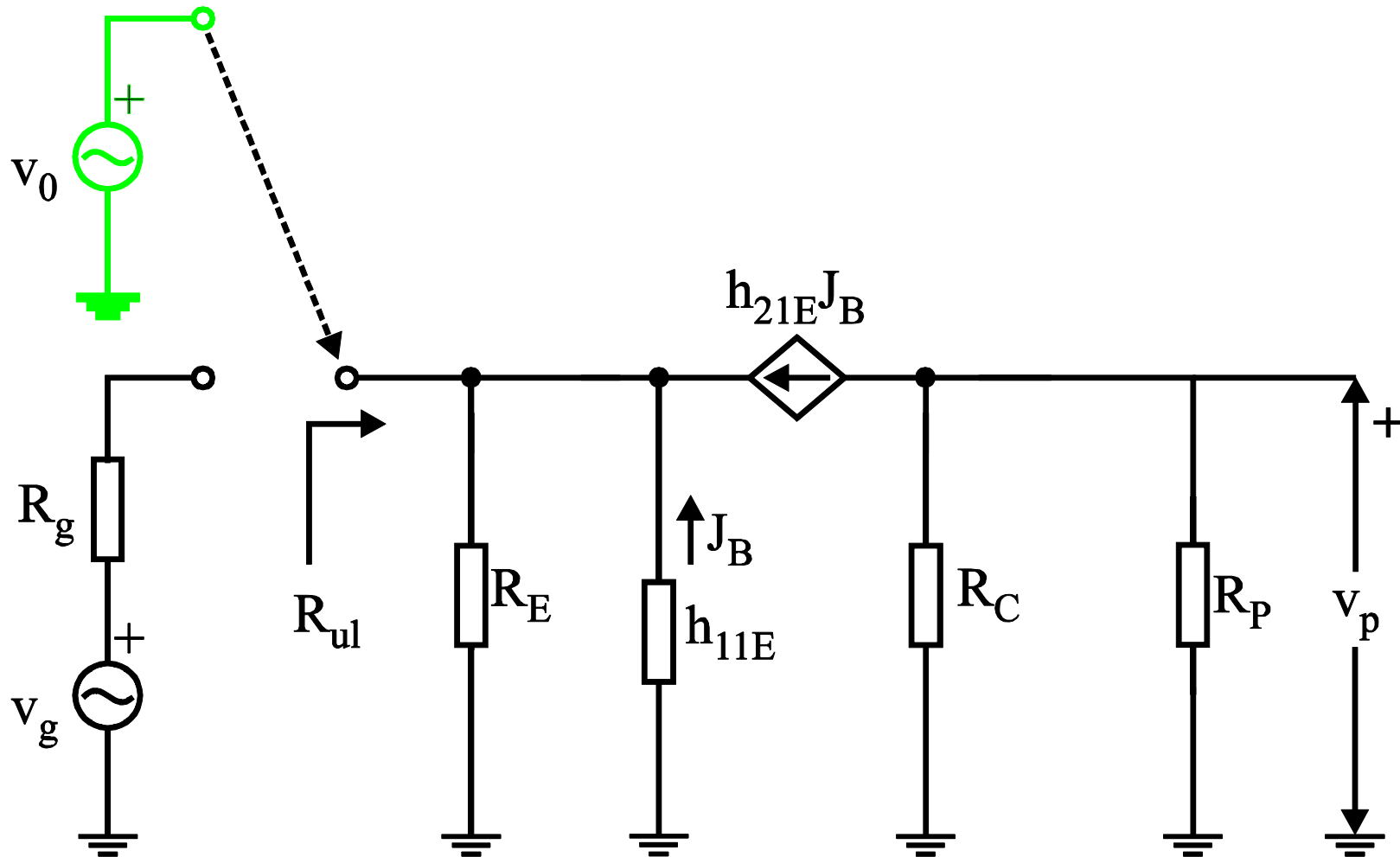
Naizmenični režim



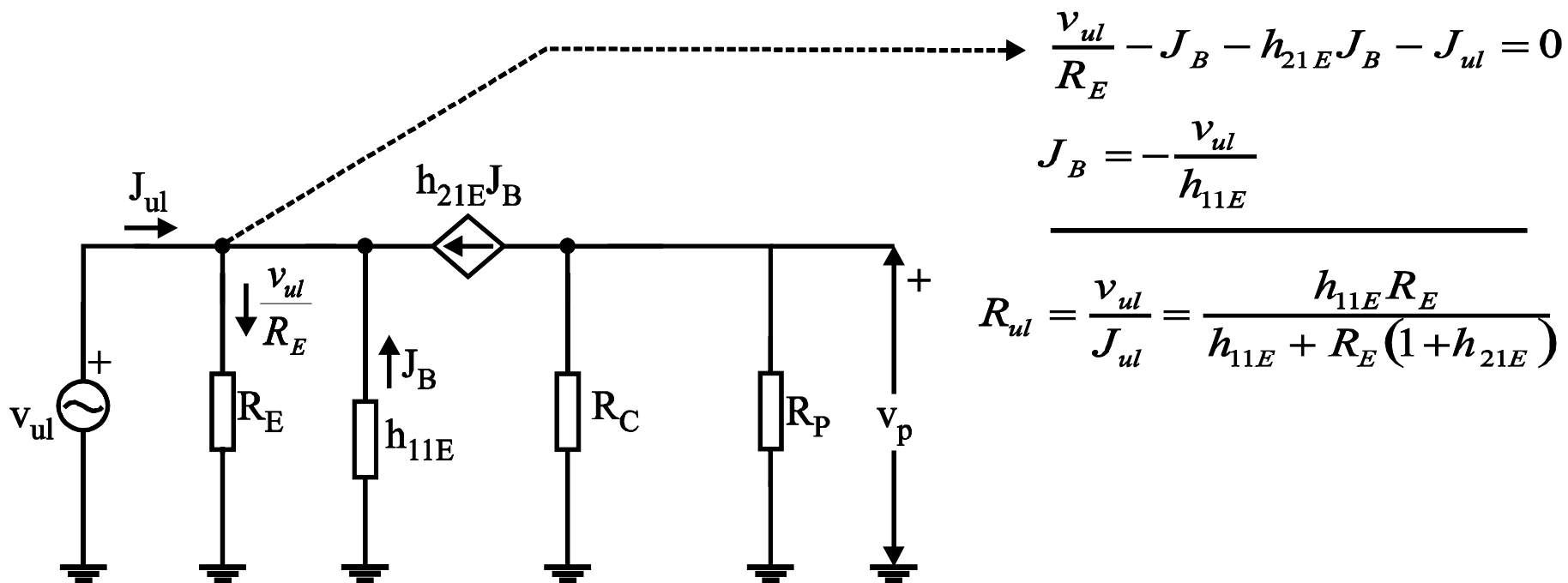
Naponsko pojačanje



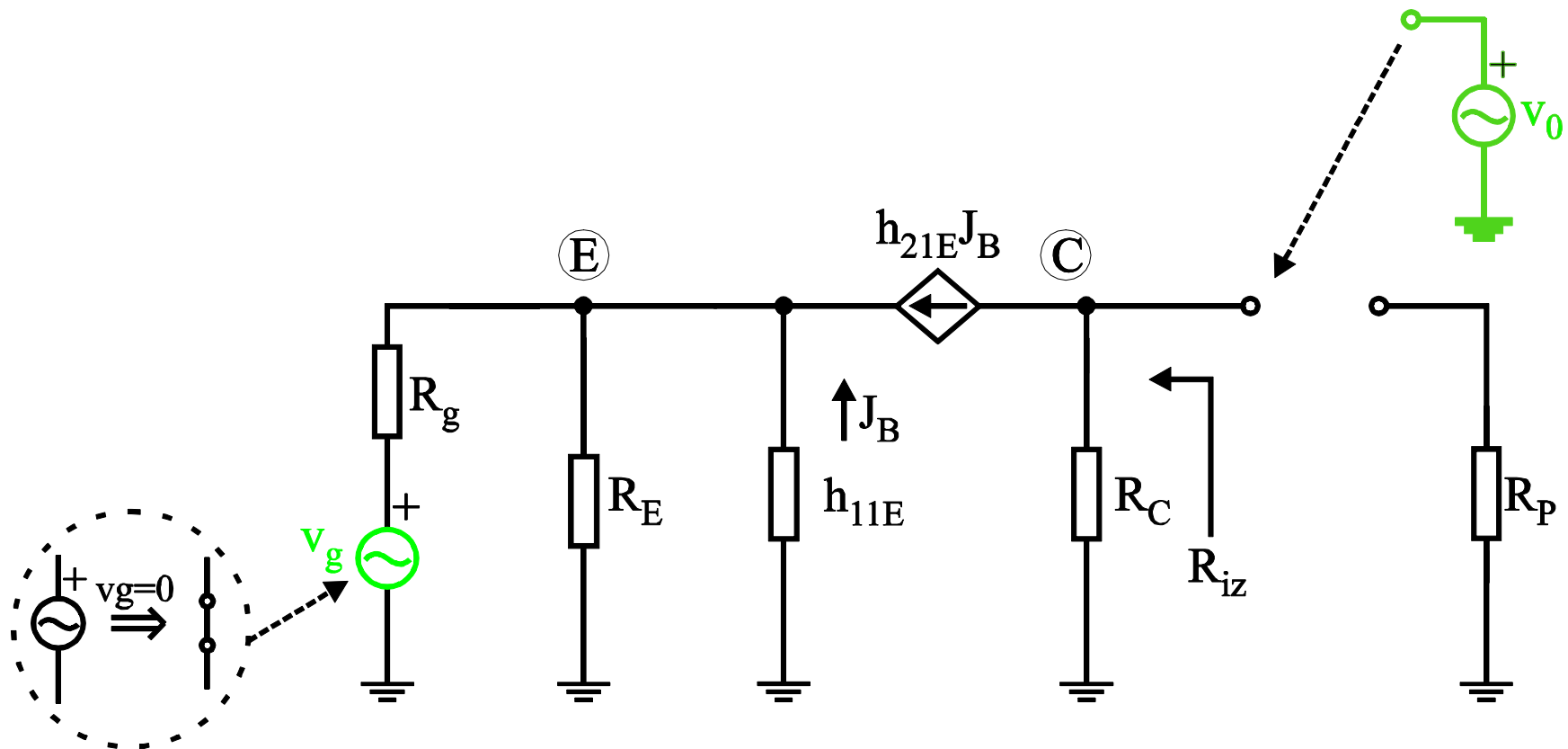
Ulazna otpornost



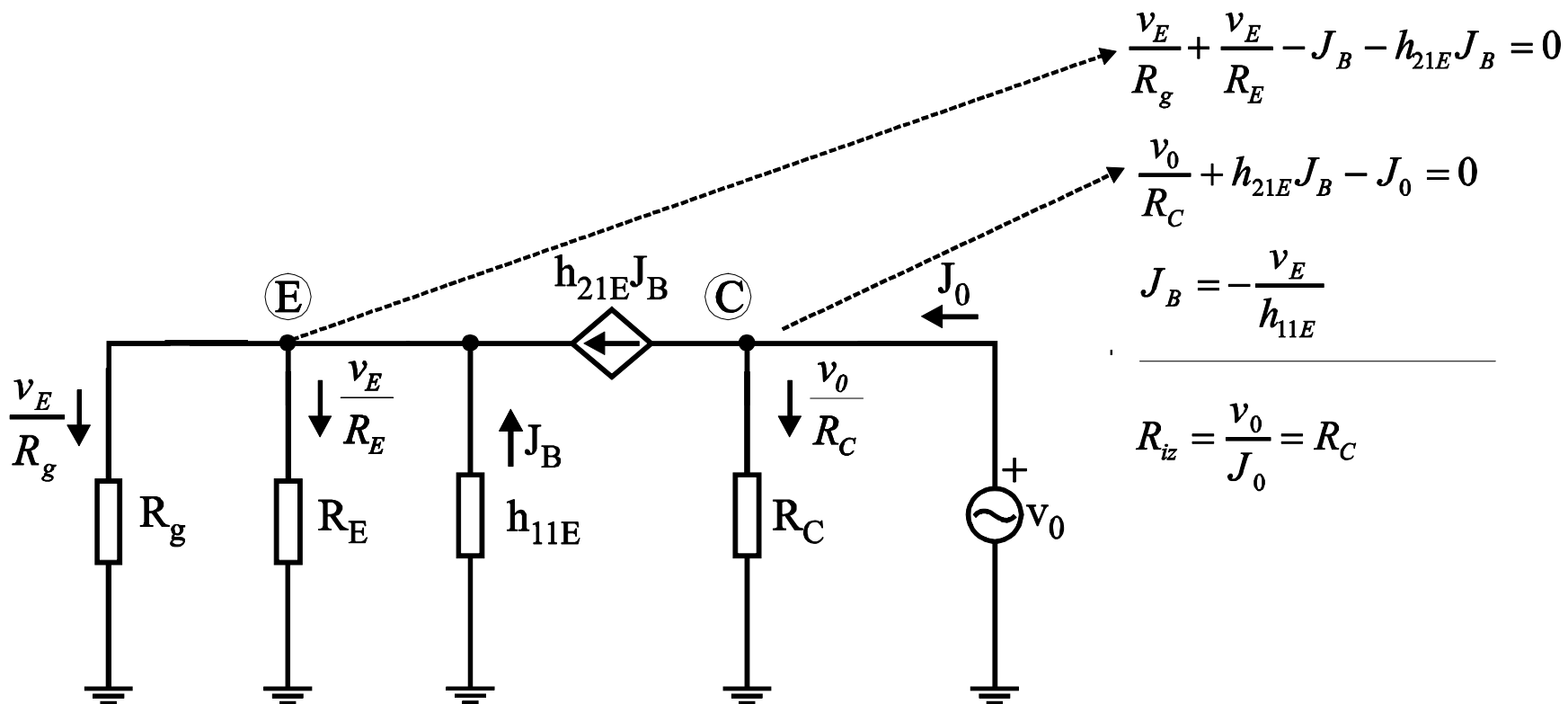
Ulazna otpornost



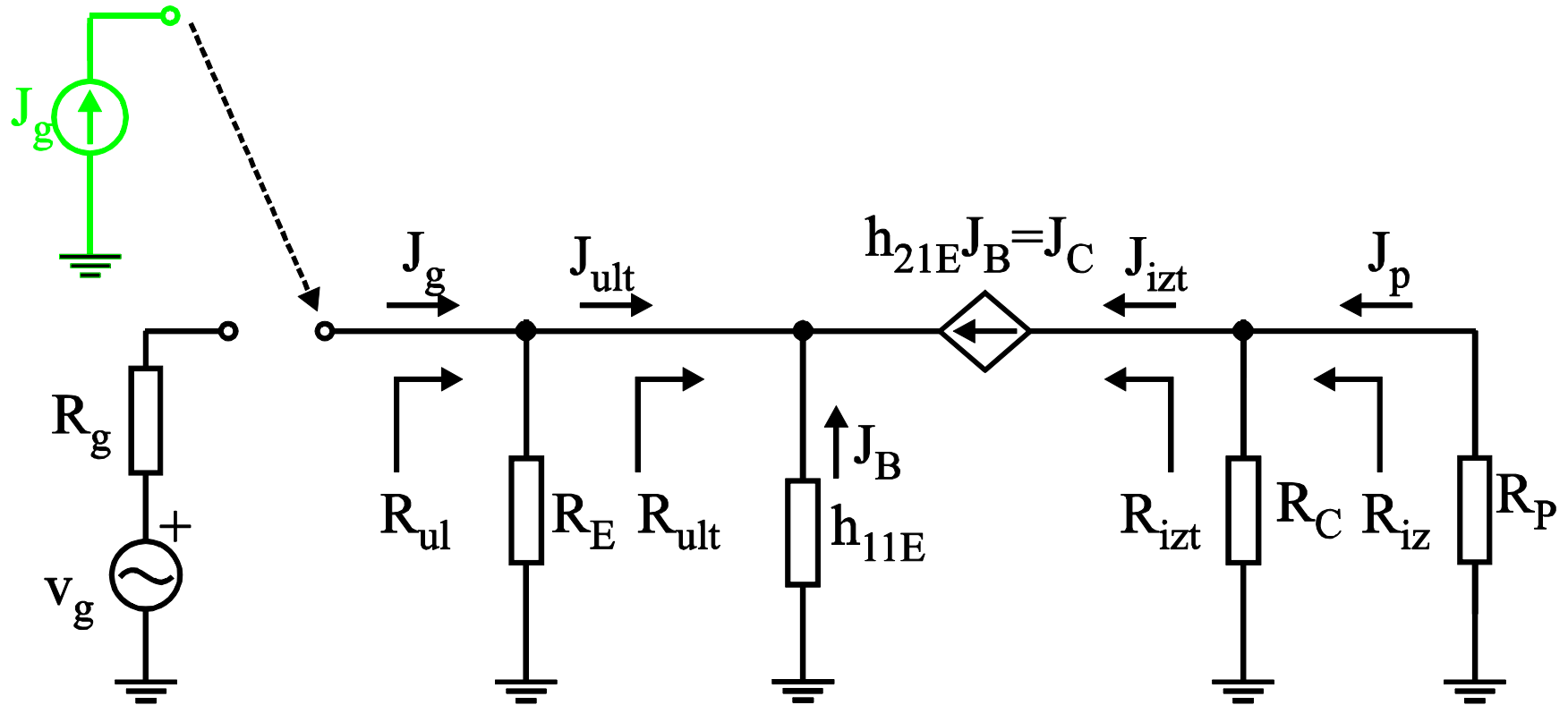
Izlazna otpornost



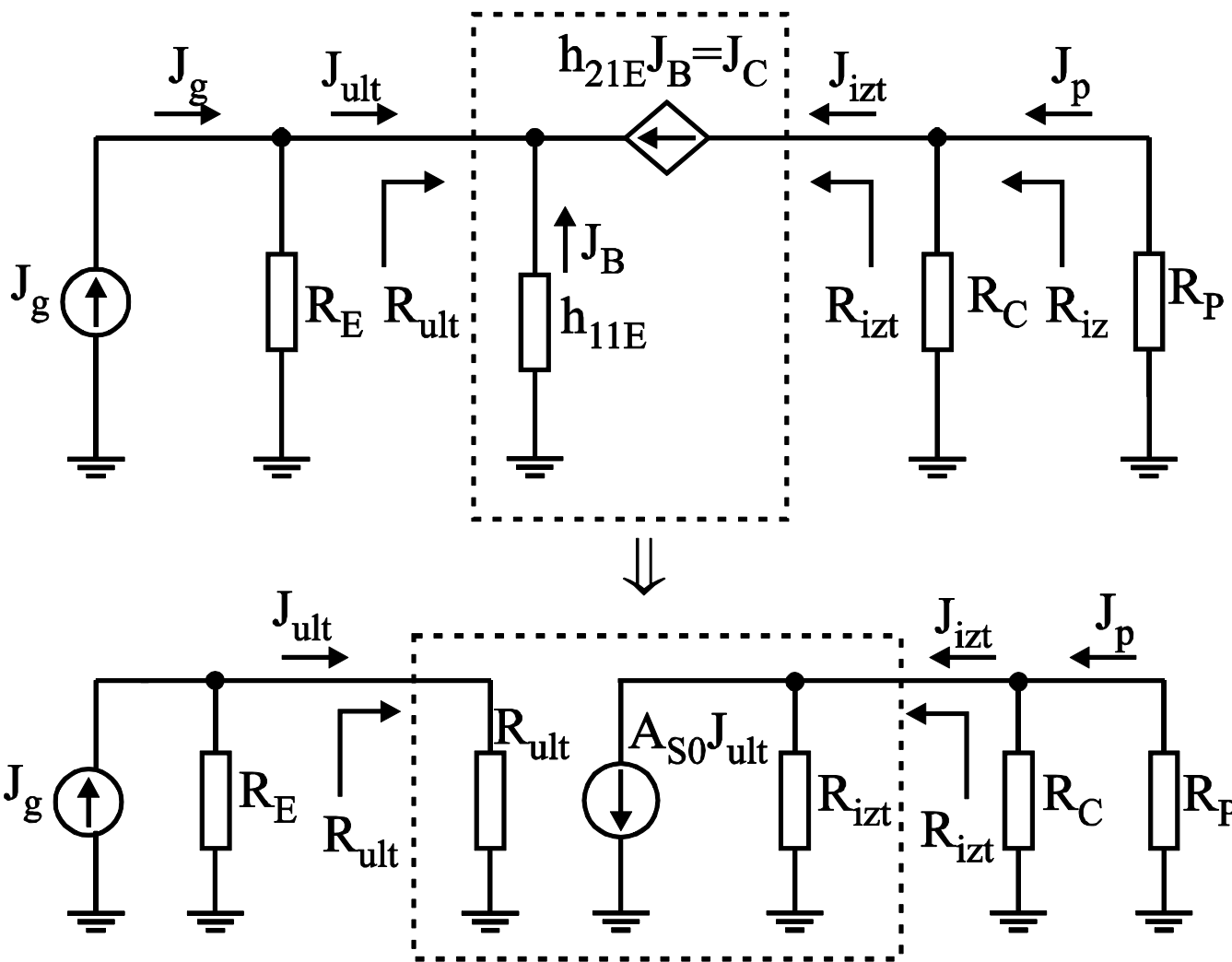
Izlazna otpornost



Strujno pojačanje



Strujno pojačanje

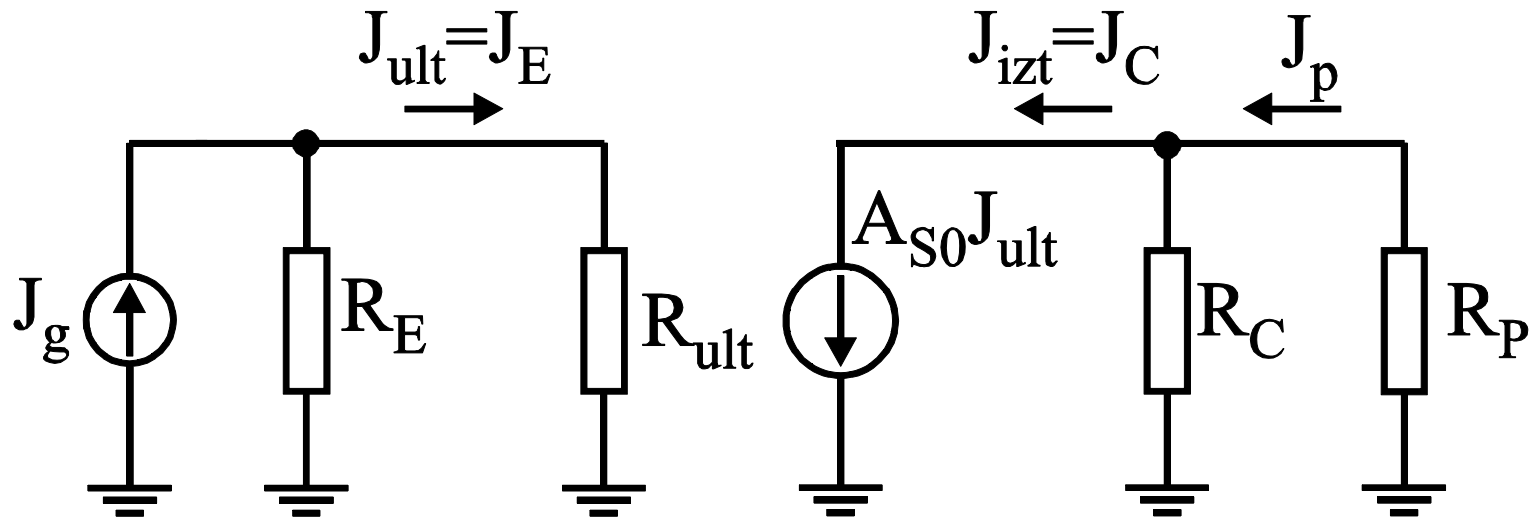


$$R_{izt} \rightarrow \infty$$

$$R_{ult} = \frac{h_{11E}}{1 + h_{21E}}$$

$$A_{s0} = -\frac{h_{21E}}{1 + h_{21E}}$$

Strujno pojačanje



$$A_s = \frac{J_p}{J_g} = \frac{J_p}{J_{izt}} \frac{J_{izt}}{J_{ult}} \frac{J_{ult}}{J_g} = \frac{J_p}{J_C} \frac{J_C}{J_E} \frac{J_E}{J_g}$$

$$A_s = - \frac{R_C}{R_C + R_p} \frac{h_{21E}}{h_{21E} + 1} \frac{R_E}{R_E + R_{ult}}$$