



$$z = \frac{1}{\frac{1}{R_2} + pC} = \frac{R_2}{1 + R_2 C p}$$

$$u_a = \frac{z}{z + R_1} \cdot u_e$$

$$\frac{u_a}{u_e} = \frac{\frac{R_2}{1 + R_2 C p}}{\frac{R_2}{1 + R_2 C p} + R_1} = \frac{\frac{R_2}{1 + R_2 C p}}{\frac{R_2 + R_1(1 + R_2 C p)}{1 + R_2 C p}}$$

$$= \frac{R_2}{R_2 + R_1(1 + R_2 C p)} = \frac{R_2}{R_1 + R_2 + R_1 R_2 C p}$$

$$f_0 = (R_e = I_m)$$

$$R_1 R_2 \cdot C \cdot p = R_1 + R_2$$

$$p = \frac{R_1 + R_2}{R_1 R_2 \cdot C}, \quad C = 10 \text{ nF}, R_1 = 30 \text{ k}, R_2 = 10 \text{ k}$$

$$f_0 = \frac{R_1 + R_2}{2\pi \cdot R_1 R_2 \cdot C} = 2123 \text{ Hz}$$