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CTI Grupa 262

Amplificator in conexiunea Emitor Comun

1. Schema circuitului

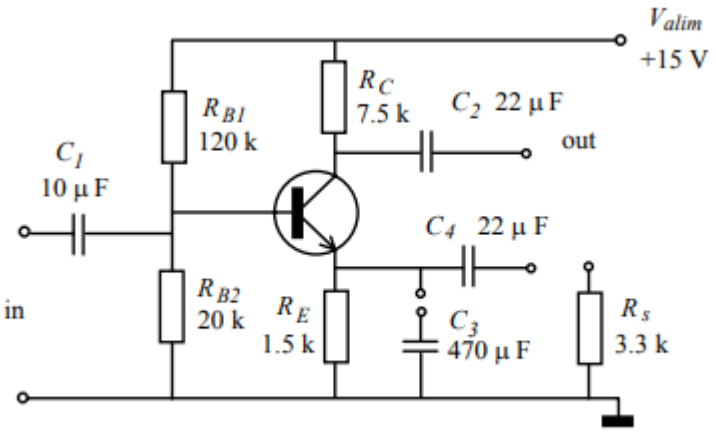

Fig. 12.20.

2. Rezolvare

$V_B = V_{alim} * R_{B2} / (R_{B1} + R_{B2}) = 15 * 20000 / 140000 = 2.142$ V
$V_E = V_B - 0.6 = 1.542$ V
$I_E = (V_e - 0) / R_E = 1.542 / 1500 = 1.028$ mA
$I_E \sim I_c \Rightarrow I_C = 1.028$ mA
$V_C = V_A - I_C * R_C = 15 - 1.028 * 7.5 = 7.29$ V
$r_e = 25mV / I_C = 25 / 1.028 = 24.319\ \Omega \sim 25\ \Omega$

R_E se scurt-circuiteaza si ramane doar rezistenta dinamica
$|A| = R_C / (R_E + r_e) = 7500 / (0 + 25) = 300$

$1/Z_{in} = 1/R_{B1} + 1/R_{B2} + 1/(\beta * r_e) = 1/12000 + 1/20000 + 1/(200 * 25) = 1/3000$
$\Rightarrow Z_{in} = 3000\ \Omega$

$Z_{out} = R_C = 7500\ \Omega$