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(1) $Z_0=\infty$ $Z_B=Z_0=400\Omega$

故 $Z_B=\frac{Z_{01}^2}{Z_{L1}}$ ∴ $Z_{01}=200\Omega$

由"电源功率全部传输到负载Z_L处"

故 从B往D看 $Z_L=\infty$

又 $Z_C\neq\infty$ 那么有

$Z_C=0$ 而 $Z_{C\to B}=\infty$

故 CD、BC长为$\frac{\lambda}{4}$

又 $Z_B=Z_A=400\Omega$

$U_A=E_g\frac{Z_A}{Z_A+Z_g}=8V$

$U_A=U_B=8V$

所以 $Z_{L1}=Z_{01}$

$U_1(1+|\Gamma|)=U_B=8V$

$|\Gamma|=\frac{Z_{L1}-Z_{01}}{Z_{L1}+Z_{01}}=\frac{1}{3}$

故 $U_1=6V$

$U_E=U_1(1-|\Gamma|)=4V$

故 $P_{L1}=\frac{1}{2}\frac{U_E^2}{Z_{L1}}=0.08W$

$U_{1B}=\frac{1}{2}U_B=4V$

$|\Gamma_{BL}|=-1$

$\Rightarrow U_{1C}=U_{1B}=4V$, $|\Gamma|_{CD}=1$

$\Rightarrow U_D=U_{1C}(1+|\Gamma|_{CD})=8V$

(2) $Z_B=Z_0=400\Omega$

即使功率平均分配则两支路相同即可

$\Rightarrow Z_{D\to C}=\infty$ CD长$\frac{\lambda_g}{4}$

又由于 $P_{L2}=P_{L1}$ 且 $P_{\text{总}}=\frac{1}{2}I^2\cdot Z_A=0.08W$

$P_{L2}=P_{L1}=\frac{1}{2}P_{\text{总}}=0.04W$

$\Rightarrow U_C=8V$

$U_E=2\sqrt{2}V$

且 $U_B=8V$ BC长$\frac{\lambda_g}{2}$

$\Rightarrow r_{BE}=\frac{8}{2\sqrt{2}}=2\sqrt{2}$

$\Rightarrow |\Gamma|_{BE}=\frac{\rho-1}{\rho+1}=0.478$

$|\Gamma|_{BE}=\frac{Z_{L1}-Z_{01}}{Z_{L1}+Z_{11}}$ $Z_{01}=35.72\Omega$