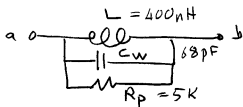


Q.1

For the inductor model given below:

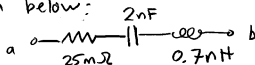
- a-) Calculate the parallel resonance frequency
- b-) Calculate the impedance of the inductor
 - i-) At resonance
 - ii-) At half of the resonant frequency
 - iii-) At twice of the "
 - iv-) Calculate the effective inductance and capacitance of the inductor at (ii) and (iii)



where
 C_w is the interwinding capacitance
 R_p is the effective parallel loss of the inductor

Q.2

Repeat the same question for the capacitor model given below:



Q.3

Design a 5 V power supply decoupling circuit using Kemet Spice with the following specification:

Overall impedance is less than 5Ω at 1.2 GHz
 " " " " " 0.7 at 250 MHz
 " " " " " $150 \text{ m}\Omega$ at 2 MHz

Please print the frequency response