

task_uzbbnoz8abe6201d_with_calculation

Student Group

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exam ee1 SS2023

Exercise E1 Impedances at Frequencies (written test, approx. 14 % of a 60-minute written test, SS2023)

At an inductor with \$X_{L1} = 60 \sim \text{m}\Omega\$ and \$L_1 = 15.9 \sim \mu\text{H}\$, the result is measured with \$U = 5.6 \sim \text{V}\$.

Solution

Solution

$$f = 500 \text{ kHz}$$

$$X_{L1} = 60 \text{ m}\Omega$$

$$L_1 = 15.9 \mu\text{H}$$

$$U = 5.6 \text{ V}$$

$$I = \frac{U}{X_{L1}} = \frac{5.6 \text{ V}}{60 \text{ m}\Omega} = 93.3 \text{ mA}$$

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Last update: 2023/08/17 06:46

