

RLC Resonance Calculator

Estimates ideal resonant frequency and first-order series-RLC quality metrics from inductance, capacitance, and series resistance.

Generated October 10, 2026

<https://www.elecatrrix.com/circuits-components/rlc-resonance-calculator/>

Inputs

Input	Value	Unit
Inductance	10	mH
Capacitance	10	uF
Series resistance	10	ohm

Results

Result	Value	Unit
Resonant frequency	503.2921	Hz
Quality factor	3.1623	
Bandwidth	159.1549	Hz

Calculation details

Detail	Value	Unit
Calculation basis	Ideal first-order series-RLC model with inductance converted to henries and capacitance converted to farads.	
Circuit boundary	No parasitic, source, saturation, tolerance, frequency-dependent loss, EMC, component-rating, stability, or safety result is included in this series-RLC estimate.	

Formulas

$$L = L_{\text{mH}} \times 10^{-3} \text{ H}$$

$$C = C_{\text{uF}} \times 10^{-6} \text{ F}$$

$$f_0 = (1/2\pi\sqrt{LC})$$

$$Q = (1/R)\sqrt{L/C}$$

$$BW = (f_0/Q)$$

Warnings and limitations

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This RLC resonance estimate uses a simple series model. It does not model parasitic elements, source impedance, component tolerance, saturation, losses outside the entered resistance, frequency-dependent behavior, or safety.