

Capacitor Series Value Calculator

Combines two or three ideal series capacitors into equivalent capacitance while leaving voltage sharing, ESR, tolerance, and balancing checks separate.

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<https://www.elecatrrix.com/circuits-components/capacitor-series-value-calculator/>

Inputs

Input	Value	Unit
Capacitance 1	10	uF
Capacitance 2	10	uF
Capacitance 3 (optional)	N/A	uF

Results

Result	Value	Unit
Equivalent capacitance	5	uF

Calculation details

Detail	Value	Unit
Calculation basis	Series capacitors add by reciprocal capacitance.	
Boundary	Ideal component arithmetic only; verify voltage rating, tolerance, ESR, dielectric behavior, and balancing requirements.	

Formulas

$\frac{1}{C_{eq}} = \left(\frac{1}{C_1}\right) + \left(\frac{1}{C_2}\right) + \left(\frac{1}{C_3}\right)$
$C_3 = 0 \rightarrow \frac{1}{C_{eq}} = \left(\frac{1}{C_1}\right) + \left(\frac{1}{C_2}\right)$

Warnings and limitations

This is ideal component arithmetic. Verify capacitor voltage rating, polarity, tolerance, ESR, dielectric behavior, and balancing before use in equipment.