

Resistor Color Code Calculator

Identify nominal resistor value and tolerance from the first digit, second digit, multiplier, and tolerance bands.

Generated October 10, 2026

<https://www.elecatrix.com/circuits-components/resistor-color-code-calculator/>

Inputs		
Input	Value	Unit
First digit band	Brown 1	
Second digit band	Black 0	
Multiplier band	Red 2	
Tolerance band	Gold +/-5%	
Results		
Result	Value	Unit
Nominal resistance	1000	ohm
Nominal resistance	1	kohm
Nominal resistance	0.001	Mohm
Tolerance	5	%
Minimum resistance	950	ohm
Maximum resistance	1050	ohm
Calculation details		
Detail	Value	Unit
Calculation basis	Four-band resistor color arithmetic using two significant digits, one multiplier band, and one tolerance band.	
Boundary	Educational component estimate only; no wattage, temperature coefficient, voltage rating, surge rating, manufacturer approval, or circuit-safety decision is made by this calculator.	
Formulas		

Resistor Color Code Calculator

Identify nominal resistor value and tolerance from the first digit, second digit, multiplier, and tolerance bands.

Generated October 10, 2026

<https://www.elecatrix.com/circuits-components/resistor-color-code-calculator/>

Nominal resistance = $(10 \times \text{first digit} + \text{second digit}) \times \text{multiplier}$

Minimum resistance = $\text{nominal resistance} \times (1 - \text{tolerance percent}/100)$

Maximum resistance = $\text{nominal resistance} \times (1 + \text{tolerance percent}/100)$

Warnings and limitations

This is an educational resistor color estimate. Verify physical band order, manufacturer markings, tolerance, wattage, temperature coefficient, and circuit requirements before using a component.