

# **The Resistor Color Code**

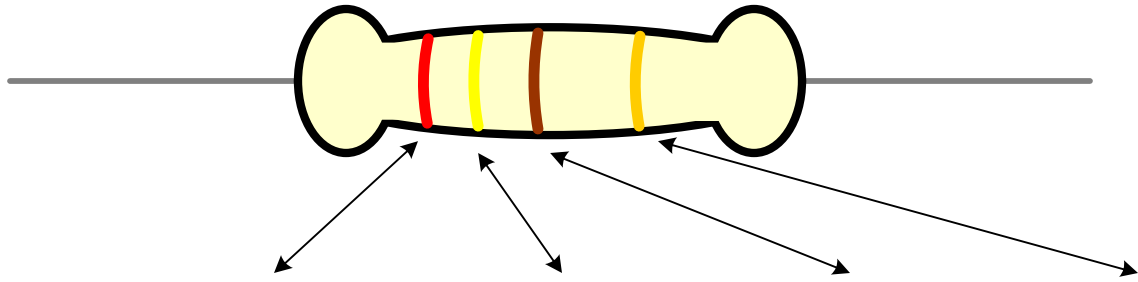
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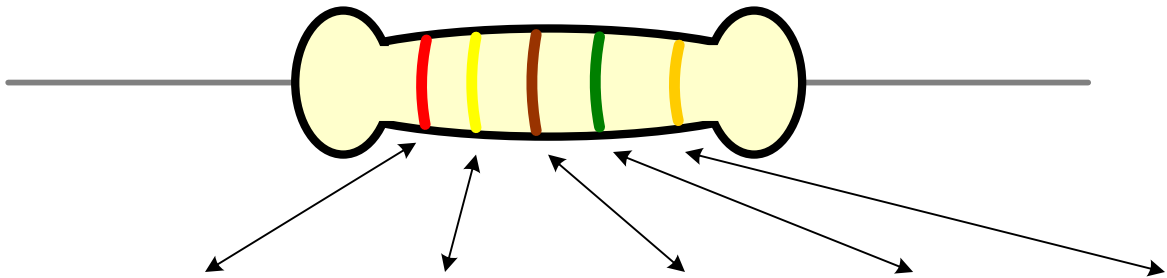
The following resistor color code charts are from Hiro Shimoyama of Southern Mississippi University (<http://www.hiropysics.com/>). They show the color codes for 4-band, 5-band, and 6-band resistors.

# 4-band Resistor



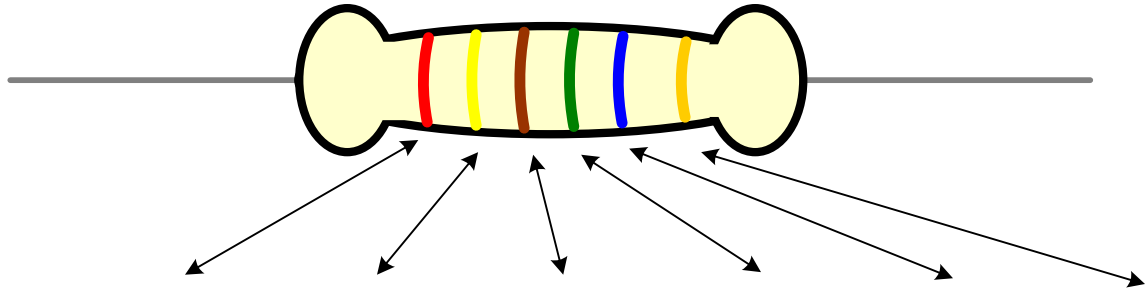
Color	1 <sup>st</sup> band value	2 <sup>nd</sup> band value	Multiplier	Tolerances
Black	0	0	× 1	
Brown	1	1	× 10	± 1%
Red	2	2	× 100	± 2%
Orange	3	3	× 1000	± 3%
Yellow	4	4	× 10,000	± 4%
Green	5	5	× 100,000	± 0.5%
Blue	6	6	× 1,000,000	± 0.25%
Violet	7	7	× 10,000,000	± 0.10%
Grey	8	8	× 100,000,000	± 0.05%
White	9	9	× 1,000,000,000	
Gold			× 0.1	± 5%
Silver			× 0.01	± 10%
No band				± 20%

## 5-band Resistor



Color	1 <sup>st</sup> band value	2 <sup>nd</sup> band value	3 <sup>rd</sup> band value	Multiplier	Tolerances
Black	0	0	0	× 1	
Brown	1	1	1	× 10	± 1%
Red	2	2	2	× 100	± 2%
Orange	3	3	3	× 1000	± 3%
Yellow	4	4	4	× 10,000	± 4%
Green	5	5	5	× 100,000	± 0.5%
Blue	6	6	6	× 1,000,000	± 0.25%
Violet	7	7	7	× 10,000,000	± 0.10%
Grey	8	8	8	× 100,000,000	± 0.05%
White	9	9	9	× 1,000,000,000	
Gold				× 0.1	± 5%
Silver				× 0.01	± 10%
No band					± 20%

## 6-band Resistor



Color	1 <sup>st</sup> band	2 <sup>nd</sup> band	3 <sup>rd</sup> band	Multiplier	Tolerances	Temp. Coeff.
Black	0	0	0	$\times 10^0$		
Brown	1	1	1	$\times 10^1$	$\pm 1\%$	100 ppm/K
Red	2	2	2	$\times 10^2$	$\pm 2\%$	50 ppm/K
Orange	3	3	3	$\times 10^3$	$\pm 3\%$	15 ppm/K
Yellow	4	4	4	$\times 10^4$	$\pm 4\%$	25 ppm/K
Green	5	5	5	$\times 10^5$	$\pm 0.5\%$	
Blue	6	6	6	$\times 10^6$	$\pm 0.25\%$	
Violet	7	7	7	$\times 10^7$	$\pm 0.10\%$	
Grey	8	8	8	$\times 10^8$	$\pm 0.05\%$	
White	9	9	9	$\times 10^9$		
Gold				$\times 10^{-1}$	$\pm 5\%$	
Silver				$\times 10^{-2}$	$\pm 10\%$	
No band					$\pm 20\%$	