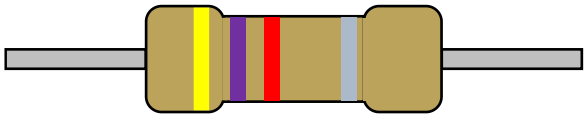
How to Read Resistor Color Codes

Note that the wider gap between bands should be on the r.h.s. for proper reading orientation.

3 Band
(330 Ω)

Orange, Orange, Brown
$3\ 3 \times 10^{1}\ \Omega,\ \pm 20\%$

4 Band
(4.7 kΩ)



Yellow, Violet, Red, Silver
$4\ 7 \times 10^{2}\ \Omega,\ \pm 10\%$

5 Band
(68 kΩ)

Blue, Gray, Black, Red, Gold
$6\ 8\ 0 \times 10^{2}\ \Omega,\ \pm 5\%$

6 Band
(560 kΩ)

Green, Blue, Black, Orange, Gold, Red
$5\ 6\ 0 \times 10^{3}\ \Omega,\ \pm 5\%,\ 50\ ppm/K$

Color	1st Digit	2nd Digit	3rd Digit (5&6 Band Only)	Multiplier	Tolerance	Temperature Coefficient (6 Band Only)
Black	0	0	0	$10^0 = 1$		250 ppm/K
Brown	1	1	1	$10^1 = 10$	± 1%	100 ppm/K
Red	2	2	2	$10^2 = 100$	± 2%	50 ppm/K
Orange	3	3	3	$10^3 = 1$ k		15 ppm/K
Yellow	4	4	4	$10^4 = 10$ k		25 ppm/K
Green	5	5	5	$10^5 = 100$ k	± 0.5%	20 ppm/K
Blue	6	6	6	$10^6 = 1$ M	± 0.25%	10 ppm/K
Violet	7	7	7	$10^7 = 10$ M	± 0.1%	5 ppm/K
Gray	8	8	8	$10^8 = 100$ M	± 0.05%	1 ppm/K
White	9	9	9	$10^9 = 1$ G		
Gold				$10^{-1} = 0.1$	± 5%	
Silver				$10^{-2} = 0.01$	± 10%	
None					± 20%	

0 1 2 3 4 5 6 7 8 9

BB ROYGBV GW

darkest color

colors of the rainbow
(Roy G. Bv)

lightest color

Benny Bengal Roars Over Your Great Big Victory, Game Winner!