How to read resistor
COLOR CODE

VITROHM a YAGEO company

4 Band

4   7   3   ±5%

473
$= 47 \times 10^3$
$= 47\ 000\ \Omega$
$= 47\ k\Omega\ \pm5\%$

5 Band

0

4703
$= 470 \times 10^3$
$= 470\ 000\ \Omega$
$= 470\ k\Omega\ \pm5\%$

6 Band

50

470 kΩ ±5%
@ Temp. Coeff.
50 ppm/K

Color	1st Band	2nd Band	3rd Band	Multiplier		Tolerance	Temp. Coeff. (ppm/K)
Black		0	0	x10^	0		250
Brown	1	1	1	x10^	1	±1%	100
Red	2	2	2	x10^	2	±2%	50
Orange	3	3	3	x10^	3		15
Yellow	4	4	4	x10^	4		25
Green	5	5	5	x10^	5	±0.5%	20
Blue	6	6	6	x10^	6	±0.25%	10
Violet	7	7	7	x10^	7	±0.1%	5
Grey	8	8	8				1
White	9	9	9				
Gold				x10^	-1	±5%	
Silver				x10^	-2	±10%	
None						±20%	

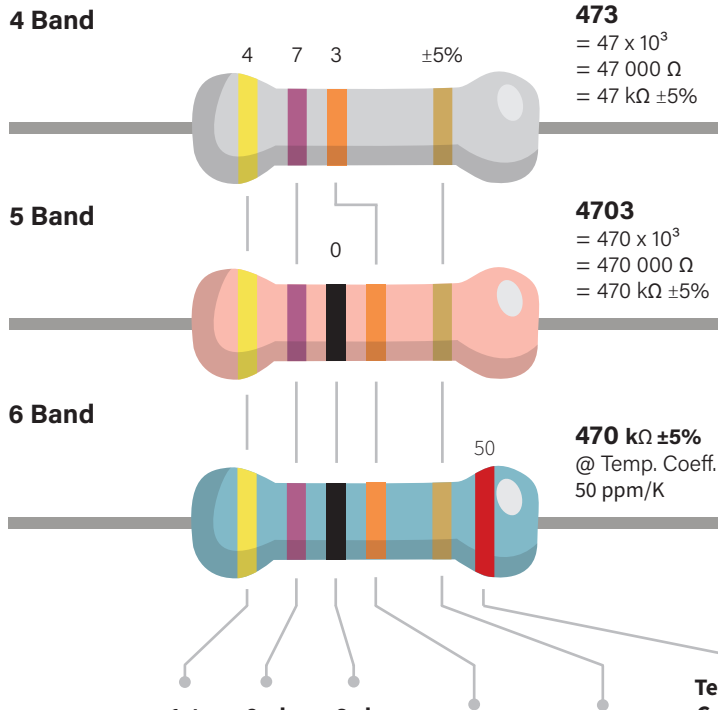## Resistor Color Code

The Resistor Color Code helps identify and select resistance and tolerance values for 4, 5, and 6 band through hole resistors.

It consists of a set of individual colored rings or bands representing each digit of the resistors value.

The Resistor Color Code markings are always read one band at a time starting from the left to the right, with the larger width tolerance band oriented to the right side indicating its tolerance.

The order in which the colors are arranged is very important, and each value of resistor has its own unique combination.

The chart below shows how to determine the resistance and tolerance for resistors. The table can also be used to specify the color of the bands when the values are known.

You can also use our Color Code Calculator available on our website:
Click here

Calculating Resistor Values

The Resistor Color Code system is easy to use but we need to understand how to apply it in order to get the correct value of the resistor.

From left to right, 4 Band:
Digit, Digit, Multiplier = Color, Color x 10^{color} in Ohm's (Ω)

Yellow, Violet, Orange = 4 7 3 = 4 7 x 10^3 = 47000Ω = 47k Ohm

From left to right, 5 and 6 Band:
Digit, Digit, Digit, Multiplier = Color, Color, Color x 10^{color} in Ohm's (Ω)

Yellow, Violet, Black, Orange = 4 7 0 3 = 4 7 0 x 10^3 = 470000Ω = 470k Ohm

The two right bands are used to determine the tolerance and the temperature coefficient.

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