

COLOR CODE FOR RESISTORS

First Band	Second Band	Multiplier Band	Resistance Ω	First Band	Second Band	Multiplier Band	Resistance Ω	First Band	Second Band	Multiplier Band	Resistance Ω	First Band	Second Band	Multiplier Band	Resistance Ω																																																																							
Brown	Black	Black	10	Red	Black	Black	20	Orange	Black	Gold	3.0	Yellow	Orange	Gold	4.3																																																																							
		Brown	100			Brown	200			Black	30			Black	43																																																																							
		Red	1000			Red	2000			Brown	300			Brown	430																																																																							
	Orange	10000	Orange		20000	Red	3000		Red	4300																																																																												
	Yellow	0.1 Meg.	Yellow		0.2 Meg.	Orange	30000		Orange	43000																																																																												
	Green	1.0 Meg.	Green		2.0 Meg.	Yellow	0.30 Meg.		Yellow	0.43 Meg.																																																																												
	Blue	10.0 Meg.	Blue		20.0 Meg.	Green	3.0 Meg.		Green	4.3 Meg.																																																																												
	Brown	Black	11		Red	Black	22		Orange	Gold	3.3		Violet	Gold	4.7																																																																							
		Brown	110			Brown	220			Black	33			Black	47																																																																							
		Red	1100			Red	2200			Brown	330			Brown	470																																																																							
Orange	11000	Orange	22000	Red	3300	Red	4700																																																																															
Yellow	0.11 Meg.	Yellow	0.22 Meg.	Orange	33000	Orange	47000																																																																															
Green	1.1 Meg.	Green	2.2 Meg.	Yellow	0.33 Meg.	Yellow	0.47 Meg.																																																																															
Blue	11.1 Meg.	Blue	22.2 Meg.	Green	3.3 Meg.	Green	4.7 Meg.																																																																															
Red	Black	12	Yellow	Black	24	Blue	Gold	3.6	Brown	Gold	5.1																																																																											
	Brown	120		Brown	240		Black	36		Black	51																																																																											
	Red	1200		Red	2400		Brown	360		Brown	510																																																																											
Orange	12000	Orange	24000	Red	3600	Red	5100																																																																															
Yellow	0.12 Meg.	Yellow	0.24 Meg.	Orange	36000	Orange	51000																																																																															
Green	1.2 Meg.	Green	2.4 Meg.	Yellow	0.36 Meg.	Yellow	0.51 Meg.																																																																															
Blue	12.2 Meg.	Blue	24.4 Meg.	Green	3.6 Meg.	Green	5.1 Meg.																																																																															
Orange	Black	13	Violet	Gold	2.7	White	Gold	3.9	Blue	Gold	5.6																																																																											
	Brown	130		Black	27		Black	39		Black	56																																																																											
	Red	1300		Brown	270		Brown	390		Brown	560																																																																											
Orange	13000	Red	2700	Red	3900	Red	5600																																																																															
Yellow	0.13 Meg.	Orange	27000	Orange	39000	Orange	56000																																																																															
Green	1.3 Meg.	Yellow	0.27 Meg.	Yellow	0.39 Meg.	Yellow	0.56 Meg.																																																																															
Blue	13.3 Meg.	Green	2.7 Meg.	Green	3.9 Meg.	Green	5.6 Meg.																																																																															
Green	Black	15	<p style="text-align: center;">Standard Color Code</p> <p>5-BAND RESISTORS ($\pm 1\%$)</p> <p>4-BAND RESISTORS ($\pm 10\%$ / $\pm 5\%$)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Band1</th> <th>Band 2</th> <th>Band 3</th> <th>Multiplier</th> <th>Resistance</th> <th>Tolerance</th> </tr> <tr> <th>1st Digit</th> <th>2nd Digit</th> <th>3rd Digit</th> <th>Multiplier</th> <th>Color</th> <th>Tolerance</th> </tr> </thead> <tbody> <tr> <td>Black</td> <td>Black</td> <td>Black</td> <td>1</td> <td>Silver</td> <td>$\pm 10\%$</td> </tr> <tr> <td>Brown</td> <td>Brown</td> <td>Brown</td> <td>10</td> <td>Gold</td> <td>$\pm 5\%$</td> </tr> <tr> <td>Red</td> <td>Red</td> <td>Red</td> <td>100</td> <td>Brown</td> <td>$\pm 1\%$</td> </tr> <tr> <td>Orange</td> <td>Orange</td> <td>Orange</td> <td>1000</td> <td></td> <td></td> </tr> <tr> <td>Yellow</td> <td>Yellow</td> <td>Yellow</td> <td>10000</td> <td></td> <td></td> </tr> <tr> <td>Green</td> <td>Green</td> <td>Green</td> <td>100000</td> <td></td> <td></td> </tr> <tr> <td>Blue</td> <td>Blue</td> <td>Blue</td> <td>1000000</td> <td></td> <td></td> </tr> <tr> <td>Violet</td> <td>Violet</td> <td>Violet</td> <td>0.01</td> <td></td> <td></td> </tr> <tr> <td>Gray</td> <td>Gray</td> <td>Gray</td> <td>0.1</td> <td></td> <td></td> </tr> <tr> <td>White</td> <td>White</td> <td>White</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>												Band1	Band 2	Band 3	Multiplier	Resistance	Tolerance	1st Digit	2nd Digit	3rd Digit	Multiplier	Color	Tolerance	Black	Black	Black	1	Silver	$\pm 10\%$	Brown	Brown	Brown	10	Gold	$\pm 5\%$	Red	Red	Red	100	Brown	$\pm 1\%$	Orange	Orange	Orange	1000			Yellow	Yellow	Yellow	10000			Green	Green	Green	100000			Blue	Blue	Blue	1000000			Violet	Violet	Violet	0.01			Gray	Gray	Gray	0.1			White	White	White			
	Band1	Band 2													Band 3	Multiplier	Resistance	Tolerance																																																																				
	1st Digit	2nd Digit													3rd Digit	Multiplier	Color	Tolerance																																																																				
Black	Black	Black													1	Silver	$\pm 10\%$																																																																					
Brown	Brown	Brown													10	Gold	$\pm 5\%$																																																																					
Red	Red	Red													100	Brown	$\pm 1\%$																																																																					
Orange	Orange	Orange													1000																																																																							
Yellow	Yellow	Yellow													10000																																																																							
Green	Green	Green													100000																																																																							
Blue	Blue	Blue													1000000																																																																							
Violet	Violet	Violet	0.01																																																																																			
Gray	Gray	Gray	0.1																																																																																			
White	White	White																																																																																				
Brown	Black	150	Blue	Black	62	Violet	Gold	6.2	Red	Gold	6.2																																																																											
Red	Brown	1500		Brown	620		Black	62		Black	62																																																																											
Orange	Red	15000		Red	6200		Brown	620		Brown	6200																																																																											
Yellow	Orange	0.15 Meg.	Orange	62000	Red	62000	Orange	62000																																																																														
Green	Yellow	1.5 Meg.	Yellow	0.62 Meg.	Orange	62000	Yellow	0.62 Meg.																																																																														
Blue	Green	15.0 Meg.	Green	6.2 Meg.	Yellow	0.62 Meg.	Green	6.2 Meg.																																																																														
Blue	Black	16	Gray	Gold	6.8	Blue	Gold	6.8	Gray	Gold	6.8																																																																											
	Brown	160		Black	68		Black	68		Black	68																																																																											
	Red	1600		Brown	680		Brown	680		Brown	6800																																																																											
Orange	Red	16000	Red	6800	Red	68000	Orange	68000																																																																														
Yellow	Orange	0.16 Meg.	Orange	68000	Yellow	0.68 Meg.	Yellow	0.68 Meg.																																																																														
Green	Yellow	1.6 Meg.	Yellow	6.8 Meg.	Green	6.8 Meg.	Green	6.8 Meg.																																																																														
Blue	Green	16.6 Meg.	Green	6.8 Meg.	Blue	6.8 Meg.	Blue	6.8 Meg.																																																																														
Gray	Black	18	Violet	Gold	7.5	Green	Gold	7.5	Green	Gold	7.5																																																																											
	Brown	180		Black	75		Black	75		Black	75																																																																											
	Red	1800		Brown	750		Red	7500		Orange	75000																																																																											
Orange	Red	18000	Orange	75000	Yellow	0.75 Meg.	Yellow	0.75 Meg.																																																																														
Yellow	Orange	0.18 Meg.	Yellow	7.5 Meg.	Green	7.5 Meg.	Green	7.5 Meg.																																																																														
Green	Green	1.8 Meg.	Green	7.5 Meg.	Blue	7.5 Meg.	Blue	7.5 Meg.																																																																														
Blue	Blue	18.8 Meg.	Blue	7.5 Meg.	White	7.5 Meg.	White	7.5 Meg.																																																																														
Gray	Black	18	White	Gold	8.2	Gray	Gold	8.2	Red	Gold	8.2																																																																											
	Brown	180		Black	82		Black	82		Black	82																																																																											
	Red	1800		Brown	820		Brown	8200		Red	82000																																																																											
Orange	Red	18000	Orange	82000	Orange	82000	Orange	82000																																																																														
Yellow	Orange	0.18 Meg.	Yellow	0.82 Meg.	Yellow	0.82 Meg.	Yellow	0.82 Meg.																																																																														
Green	Yellow	1.8 Meg.	Green	8.2 Meg.	Green	8.2 Meg.	Green	8.2 Meg.																																																																														
Blue	Blue	18.8 Meg.	Blue	8.2 Meg.	Blue	8.2 Meg.	Blue	8.2 Meg.																																																																														
Gray	Black	18	White	Gold	9.1	White	Gold	9.1	Brown	Gold	9.1																																																																											
	Brown	180		Black	91		Black	91		Black	91																																																																											
	Red	1800		Brown	910		Brown	9100		Orange	91000																																																																											
Orange	Red	18000	Orange	91000	Yellow	0.91 Meg.	Yellow	0.91 Meg.																																																																														
Yellow	Orange	0.18 Meg.	Yellow	9.1 Meg.	Green	9.1 Meg.	Green	9.1 Meg.																																																																														
Green	Green	1.8 Meg.	Green	9.1 Meg.	White	9.1 Meg.	White	9.1 Meg.																																																																														