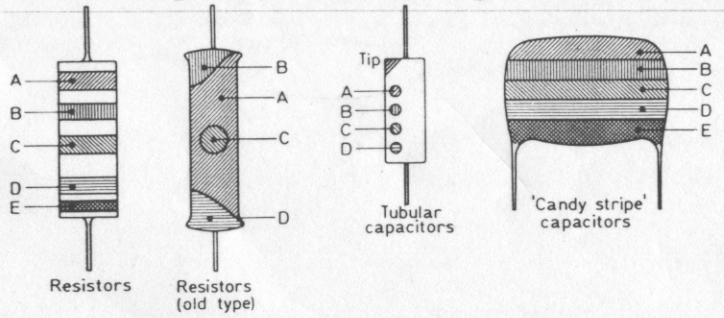
RESISTOR & CAPACITOR IDENTIFICATION CHART

Resistor & Capacitor colour coding



Preferred values

E12 Series

1.0 1.2 1.5 1.8 2.2 2.7
3.3 3.9 4.7 5.6 6.8 8.2
and their decades.

E24 Series

1.0 1.1 1.2 1.3 1.5 1.6
1.8 2.0 2.2 2.4 2.7 3.0
3.3 3.6 3.9 4.3 4.7 5.1
5.6 6.2 6.8 7.5 8.2 9.1
and their decades.

Resistor & Capacitor letter & digit code (BS1852)

Resistor values are indicated as follows:

0.47Ω	marked	**R47**	**100Ω**	marked	**100R**
1Ω	marked	**1R0**	**1kΩ**	marked	**1K0**
4.7Ω	marked	**4R7**	**10kΩ**	marked	**10K**
47Ω	marked	**47R**	**10MΩ**	marked	**10M**

A letter following the value shows the tolerance.
F = ±1%; G = ±2%; J = ±5%; K = ±10%; M = ±20%;
R33M = 0.33Ω ±20%; 6K8F = 6.8kΩ ±1%.

Capacitor values are indicated as:

0.68pF	marked	**p68**	**6.8nf**	marked	**6n8**
6.8pf	marked	**6p8**	**1000nF**	marked	**1μ0**
1000pF	marked	**1n0**	**6.8μF**	marked	**6μ8**

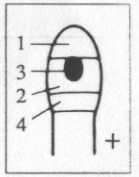
Tolerance is indicated by letters as for resistors. Values up to 999pF are marked in pF, from 1000pf to 999000pF (= 999nF) as nF (1000pF= 1nF) and from 1000nF (= 1μF) upwards as μF.

Some capacitors are marked with a code denoting the value in pF (first two figures) followed by a multiplier as a power of ten ($3 = 10^3$). Letters denote tolerance as for resistors but C = ±0.25pf.
E.g.123J = 12pF x 10^3 ±5% = 12000pF (or 0.12μF).

Resistor and Capacitor colour coding

Colour	Band A	Band B	Band C (multiplier) Resistors	Band C (multiplier) Capacitors	Band D (tolerance) Resistors	Band D (tolerance) Capacitor Up to 10pF	Band D (tolerance) Capacitor Over 10pF	Band E Polyester Capacitors	Band E Resistors
Black	—	0	1	1	—	2pF	±20%	—	—
Brown	1	1	10	10	±1%	0.1pF	±1%	—	—
Red	2	2	100	100	±2%	—	±2%	250vw	—
Orange	3	3	1,000	1,000	—	—	±2.5%	—	—
Yellow	4	4	10,000	10,000	—	—	—	—	—
Green	5	5	100,000	—	—	0.5pF	±5%	—	—
Blue	6	6	1,000,000	—	—	—	—	—	—
Violet	7	7	10,000,000	—	—	—	—	—	—
Grey	8	8	10^8	0.01μF	—	0.25pF	—	—	—
White	9	9	10^9	0^1μF	—	1pF	±10%	—	—
Silver	—	—	0.01	—	±10%	—	—	—	—
Gold	—	—	0.1	—	±5%	—	—	—	—
Pink	—	—	—	—	—	—	—	—	Hi-Stab.
None	—	—	—	—	±20%	—	—	—	—

Tantalum Capacitors



	1	2	3	4		1	2	3	4
Black	—	0	x1	10V	**Green**	5	5	—	16V
Brown	1	1	x10		**Blue**	6	6	—	20V
Red	2	2	x100		**Violet**	7	7	—	
Orange	3	3	—		**Grey**	8	8	x0.01	25V
Yellow	4	4	—	6.3V	**White**	9	9	x0.1	3V

(**Pink** 35V)

Reactance of Capacitors at spot frequencies.

	50Hz	100Hz	1kHz	10kHz	100kHz	1MHz	10MHz	100MHz
1pF	–	–	–	–	1.6M	160k	16k	1.6k
10pF	–	–	–	1.6M	160k	16k	1.6k	160
50pF	–	–	3.2M	320k	32k	3.2k	320	32
250pF	–	6.4M	640k	64k	6.4k	640	64	6.4
1,000pF	3.2M	1.6M	160k	16k	1.6k	160	16	1.6
2,000pF	1.6M	800k	80k	8k	800	80	8	0.8
0.01μF	320k	160k	16k	1.6k	160	16	1.6	0.16
0.05μF	64k	32k	3.2k	320	32	3.2	0.32	–
0.1μF	32k	16k	1.6k	160	16	1.6	0.16	–
1μF	3.2k	1.6k	160	16	1.6	0.16	–	–
2.5μF	1.3k	640	64	6.4	0.64	–	–	–
5μF	640	320	32	3.2	0.32	–	–	–
10μF	320	160	16	1.6	0.16	–	–	–
30μF	107	53	5.3	0.53	–	–	–	–
100μF	32	16	1.6	0.16	–	–	–	–
1,000μF	3.2	1.6	0.16	–	–	–	–	–

Reactance of Inductors at spot frequencies.

	50Hz	100Hz	1kHz	10kHz	100kHz	1MHz	10MHz	100MHz
1μH	–	–	–	–	0.63	6.3	63	630
5μH	–	–	–	0.31	3.1	31	310	3.1k
10μH	–	–	–	0.63	6.3	63	630	6.3k
50μH	–	–	0.31	3.1	31	310	3.1k	31k
100μH	–	–	0.63	6.3	63	630	6.3k	63k
250μH	–	0.16	1.6	16	160	1.6k	16k	160k
1mH	0.31	0.63	6.3	63	630	6.3k	63k	630k
2.5mH	0.8	1.6	16	160	1.6k	16k	160k	1.6M
10mH	3.1	6.3	63	630	6.3k	63k	630k	6.3M
25mH	8	16	160	1.6k	16k	160k	1.6M	–
100mH	31	63	630	6.3k	63k	630k	6.3M	–
1H	310	630	6.3k	63k	630k	6.3M	–	–
5H	1.5k	3.1k	31k	310k	3.1M	–	–	–
10H	3.1k	6.3k	63k	630k	6.3M	–	–	–
100H	31k	63k	630k	6.3M	–	–	–	–

Values above10MΩ and below 0.1Ω not shown. Values in Ωs.