



Method of Finding the value/Meaning of codes of capacitor

[Click Here For Resistor Colour Code And SMD Resistor Code](#)

- Ceramic disc capacitors have two to three digits code printed on them.
- The first two numbers describe the value of the capacitor and the third number is the number of zeros in the multiplier.
- When the first two numbers are multiplied with the multiplier, the resulting value is the value of the capacitor in **picofarads**.
- If there is only two number, it means there is no multiplier, Then you just read the value of the first two numbers in **picofarads**.
- If any capacitor has 10 printed on it- Then its value is 10 PF
- When Any capacitor has 104 printed- It has multiplier of 4 (Third number of code). 10 is multiplied by $10 \times 10^4 = 10000$. Then its value is $10 \times 10000 = 100000 \text{PF}$

Last number is the power of 10, and multiply with first two no.

If a capacitor has 682 code – first check the last no , here last no is 2. Now the multiplier is 10^2

For example---

- $204 = 20 \times 10^4 = 200000 \text{ PF}$
- $472 = 47 \times 10^2 = 4700 \text{ PF}$
- $502 = 52 \times 10^2 = 5200 \text{ PF}$
- $330 = 33 \times 10^0 = 33 \text{ PF}$ [$10^0 = 1$]

Here is a Table of Mostly Used Codes of Ceramic Capacitor and their unit conversion in Micro,Nano and Picofarad

Codes of Ceramic Disc Capacitor

www.circuitspedia.com

Picofarad pF	Nanofarad nF	Microfarad μF	CODE	Picofarad pF	Nanofarad nF	Microfarad μF	CODE
10	0.01	0.00001	100	4700	4.7	0.0047	472
15	0.015	0.000015	150	5000	5.0	0.005	502
22	0.022	0.000033	220	5600	5.6	0.056	562
33	0.033	0.000047	330	6800	6.8	0.0068	682
47	0.047	0.0001	470	10000	10	0.01	103
100	0.1	0.00012	101	15000	15	0.015	153
120	0.12	0.00013	121	22000	22	0.022	223
130	0.13	0.00015	131	33000	33	0.033	333
150	0.15	0.00015	151	47000	47	0.047	473
180	0.18	0.00018	181	68000	68	0.068	683
220	0.22	0.00022	221	100000	100	0.1	104
330	0.33	0.00033	331	150000	150	0.15	154
470	0.47	0.00047	471	200000	200	0.2	254
560	0.56	0.00056	561	220000	220	0.22	224
680	0.68	0.00068	681	330000	330	0.33	334
750	0.75	0.00075	751	470000	470	0.47	474
820	0.82	0.00082	821	680000	680	0.68	684
1000	1.0	0.001	102	1000000	1000	1.0	105
1500	1.5	0.0015	152	1500000	1500	1.5	155
2000	2.0	0.002	202	2000000	2000	2.0	205
2200	2.2	0.0022	222	2200000	2200	2.2	225
3300	3.3	0.0033	332	3300000	3300	3.3	335

Must Read [Resistor Colour Code And SMD Resistor Code](#)

UNITS---

- 1000 nanofarad(nF) = 1 microfarad(μF)
- 1 picofarad = 10^{-12} farads.
- Nano= 10^{-9}
- Micro= 10^{-6}
- 1 Nano Farad= 10^{-9} Farad
- 1 Microfarad (μF)= 10^{-6} Farad

1 nF = 1000 pF

1 pF = 0.001 nF

Example:

convert 15 nF to pF:

$$15 \text{ nF} = 15 \times 1000 \text{ pF} = 15000 \text{ pF}$$

Codes of Polyester Film and Metallized Film Capacitor

If a capacitor is marked with 2A474J, the capacitance is decoded as described above, the two first signs is the voltage rating and can be decoded from table given below here . 2A is 100VDC rating according to the EIA (Electronic industries alliance) standard.

A second letter will be a temperature coefficient if its present.

Some capacitors are only marked as 0.1 or 0.01, mostly in these cases the values are given in uF.

Some small capacitance capacitors can be marked with a R between numbers. If code is 3R9 then R is a indicator of values Less than 10pF and have nothing to do with resistance. 3R9 would be 3.9pF.

Capacitor Voltage Code Table

0G	4VDC	0L	5.5VDC	0J	6.3VDC
1A	10VDC	1C	16VDC	1E	25VDC
1H	50VDC	1J	63VDC	1K	80VDC
2A	100VDC	2Q	110VDC	2B	125VDC
2C	160VDC	2Z	180VDC	2D	200VDC
2P	220VDC	2E	250VDC	2F	315VDC
2V	350VDC	2G	400VDC	2W	450VDC
2H	500VDC	2J	630VDC	3A	1000VDC

↓ Capacitor Tolerance Code Table

D	F	G	H	J	K	M	P	Z
0.5%	1%	2%	3%	5%	10	20%	+100%/-0%	+80%/-20%

Metallized film capacitor



$105J = 10 \times 10^5 = 1000000 \text{ pf} = 1000 \text{ nf} = 1.0 \text{ uf}$

j = +/- 5% Tolerance

**polyester film
capacitor**



$104 = 10 \times 10^4 = 100000 \text{ pf} = 100 \text{ nf} = 0.1 \text{ uf}$

j = +/- 5% tolerance

2A = 100VDC voltage rating

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