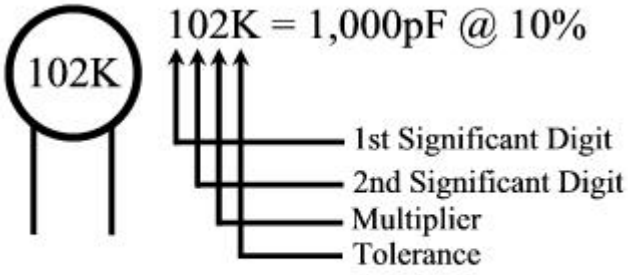
Ceramic Capacitor Codes

How to read a Ceramic capacitor with Numeric coding.



Multiplier Table (Ceramic)

Number	Multiply By (Additional # of Zeros)
0	None (0)
1	10 (1)
2	100 (2)
3	1,000 (3)
4	10,000 (4)
5	100,000 (5)
6	1,000,000 (6)

Common Temperature Coefficient Codes (Ceramic)

Code	Tolerance
C	±0.25pF
J	±5%
K	±10%
M	±20%
D	±0.5pF
Z	+80% / -20%

Common Temperature Coefficient Characteristics (Ceramic)

Temperature Coefficient	Operating Temperature Range	Capacitance Change	Minimum Capacitor Tolerance
Y5E	-30°C ~ +85°C	± 4.7%	±10%
Y5F	-30°C ~ +85°C	±7.5%	±20%
Y5P	-30°C ~ +85°C	± 10%	±10%
Y5U	-30°C ~ +85°C	+22% / -56%	±20%
Y5V	-30°C ~ +85°C	+22% / -82%	±20%
Z5U	+10°C ~ +85°C	+ 22% / -56%	±20%
Z5V	+10°C ~ +85°C	+ 22% / -82%	+80% / -20%

Application Notes (Ceramic):

NPO: Has a very low dissipation factor and are very stable over wide variations in temperature, frequency, voltage, and time. NPO type capacitors are frequently used for precision timing, filtering, frequency setting, and tuning circuits.

X7R: Are used when some capacitance variation is allowed and the dissipation factor is not critical. X7R type capacitors are frequently used for bypass, decoupling, filtering, frequency discrimination, timing, DC voltage blocking, voltage transient suppression, instrumentation, computers, telecommunications, and automotive electronics.

Z5U: Dielectrics have the highest capacitance for their size. Z5U type capacitors have applications in bypass, decoupling, transient suppression, computers, and telecommunications.

Common Capacitor Working Voltages (DC), By Capacitor Type.

Ceramic	Electrolytic	Tantalum	Mylar (Polyester)	Mylar (Metal Film)
	10V	10V		
16V	16V	16V		
		20V		
25V	25V	25V		
	35V	35V		

50V	50V	50V	50V	
	63V			
100V	100V		100V	
	160V			
			200V	
	250V			250V
	350V			
			400V	400V
	450V			
600V				
				630V
1000V				

Disclaimer Back to Fun Page