

## Multilayer Ceramic Chip Capacitors



### FEATURES

- C0G is an ultra-stable dielectric offering a Temperature Coefficient of Capacitance (TCC) of  $0 \pm 30\text{ppm}/^\circ\text{C}$ .
- Low Dissipation Factor (DF).
- Ideal for critical timing and tuning applications.



### GENERAL SPECIFICATIONS

**NOTE:** Electrical characteristics at + 25°C unless otherwise specified.

**Capacitance Range:** 1.0 pF to 0.056  $\mu\text{F}$ .

**Temperature Coefficient of Capacitance (TCC):**  
 $0 \pm 30\text{ppm}/^\circ\text{C}$  from - 55 °C to + 125 °C.

**Dissipation Factor (DF):**  
0.1 % maximum at 1.0 Vrms and 1 kHz for values > 1000 pF.  
0.1 % maximum at 1.0 Vrms and 1 MHz for values  $\leq$  1000 pF.

### Insulation Resistance (IR):

At + 25 °C and rated voltage 100,000 M $\Omega$  minimum or 1000  $\Omega\text{F}$ , whichever is less.

At + 125 °C and rated voltage 10,000 M $\Omega$  minimum or 100  $\Omega\text{F}$ , whichever is less.

### Dielectric Withstanding Voltage (DWV):

This is the maximum voltage the capacitors are tested for a 1 to 5 second period and the charge/discharge current does not exceed 50mA  
 $\leq$  100V DC : DWV at 250 % of rated voltage.

ORDERING INFORMATION								
VJ0805	A	102	K	X	A	A	T	### <sup>3)</sup>
CASE CODE	DIELECTRIC	CAPACITANCE NOMINAL CODE	CAPACITANCE TOLERANCE	TERMINATION	DC VOLTAGE RATING <sup>1)</sup>	MARKING	PACKAGING	PROCESS CODE
0402 0603 0805 1206 1210 1808 1812 1825 2220 2225	A = C0G (NP0)	Expressed in picofarads (pF). The first two digits are significant, the third is a multiplier. An "R" indicates a decimal point. <b>Examples:</b> 102 = 1000 pF 1R8 = 1.8 pF	C = $\pm 0.25$ pF D = $\pm 0.5$ pF F = $\pm 1$ % G = $\pm 2$ % J = $\pm 5$ % K = $\pm 10$ % <b>NOTE:</b> C, D < 10 pF F, G, J, K $\geq$ 10 pF	X = Ni barrier 100% tin plated. F = AgPd	X = 25V A = 50V B = 100V	A = Unmarked M = Marked <b>NOTE:</b> Marking is only available for 0805 and 1206	T = 7" reel / plastic tape C = 7" reel / paper tape I = 7" reel / flamed paper tape R = 11 1/4" reel / plastic tape P = 11 1/4" reel / paper tape O = 11 1/4" reel / flamed paper tape <b>NOTE:</b> "I" and "O" is used for "F" termination	

**Note**

1. DC voltage rating should not be exceeded in application
3. Process Code may be added with up to three digits, used to control non-standard products and/or special requirements



<b>COG (NP0) DIELECTRIC</b>																						
STYLE		VJ0402			VJ0603		VJ0805		VJ1206		VJ1210 <sup>1)</sup>		VJ1808 <sup>1)</sup>		VJ1812 <sup>1)</sup>		VJ1825 <sup>1)</sup>		VJ2220 <sup>1)</sup>		VJ2225 <sup>1)</sup>	
EIA TYPE		0402			0603		0805		1206		1210		-		1812		1825		-		-	
VOLTAGE (Vdc)		25	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
CAP. CODE	CAP.																					
1R0	1.0 pF																					
1R2	1.2 pF																					
1R5	1.5 pF																					
1R8	1.8 pF																					
2R2	2.2 pF																					
2R7	2.7 pF																					
3R3	3.3 pF																					
3R9	3.9 pF																					
4R7	4.7 pF																					
5R6	5.6 pF																					
6R8	6.8 pF																					
8R2	8.2 pF																					
100	10 pF																					
120	12 pF																					
150	15 pF																					
180	18 pF																					
220	22 pF																					
270	27 pF																					
330	33 pF																					
390	39 pF																					
470	47 pF																					
560	56 pF																					
680	68 pF																					
820	82 pF																					
101	100 pF																					
121	120 pF																					
151	150 pF																					
181	180 pF																					
221	220 pF																					
271	270 pF																					
331	330 pF																					
391	390 pF																					
471	470 pF																					
561	560 pF																					
681	680 pF																					
821	820 pF																					
102	1000 pF																					
122	1200 pF																					
152	1500 pF																					
182	1800 pF																					
222	2200 pF																					
272	2700 pF																					
332	3300 pF																					
392	3900 pF																					
472	4700 pF																					
562	5600 pF																					
682	6800 pF																					
822	8200 pF																					
103	0.010 μF																					
123	0.012 μF																					
153	0.015 μF																					
183	0.018 μF																					
223	0.022 μF																					
273	0.027 μF																					
333	0.033 μF																					
393	0.039 μF																					
473	0.047 μF																					
563	0.056 μF																					

**Note**

1 See page for soldering recommendations, or visit [www.vishay.com/doc?45034](http://www.vishay.com/doc?45034)



**C0G (NP0) DIELECTRIC - TYPICAL PARAMETERS**

