



## Multilayer Ceramic Chip Capacitors

Vishay Vitramon offers a large range of Multilayer Ceramic Chip Capacitors which are designed to meet the requirements of many markets and applications.

- Automotive
- Industrial and Commercial
- Power Supplies
- Military
- MLS - Medical Life Support (contact factory for details and ordering information)
- Aerospace (contact factory for details and ordering information)

We recognize however, that there are new and exciting developments in electronics every day and if you cannot find what you are looking for in this catalog or on our website ([www.vishay.com](http://www.vishay.com)) please contact us.

ORDERING INFORMATION <sup>1)</sup>								
VJ0805	A	102	K	X	A	A	T	### <sup>3)</sup>
SIZE CODE <sup>2)</sup>	DIELECTRIC	CAPACITANCE NOMINAL CODE	CAPACITANCE TOLERANCE	TERMINATION	DC VOLTAGE RATING	MARKING	PACKAGING	PROCESS CODE
0402	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 = ± 0.25 pF	X = Ni barrier 100 % tin plated  F = AgPd  L = Ni barrier tin/lead plate min 4 % lead	Y = 6.3 V	A = Unmarked M = Marked <b>NOTE:</b> Marking is only available for 0805 and 1206 on request	T = 7" reel / plastic tape C = 7" reel / paper tape R = 11 1/4" reel / plastic tape P = 11 1/4" reel / paper tape O = 7" reel / flamed paper tape I = 13" reel / flamed paper tape <b>NOTE:</b> 'I' and 'O' used for 'F' termination 0402 size	
0603	Y = X7R		D = ± 0.5 pF		Q = 10 V			
0805	G = X5R		F = ± 1 %		J = 16 V			
0508	X = BX		G = ± 2 %		X = 25 V			
0612	H = X8R		H = ± 3 %		A = 50 V			
1206	F = Y5E		J = ± 5 %		B = 100 V			
1210	Q = High Q		K = ± 10 %		C = 200 V			
1808			M = ± 20 %		P = 250 V			
1812					D = 300 V			
1825					E = 500 V			
2220			L = 630 V					
2225			G = 1000 V					
3640			R = 1500 V					
			F = 2000 V					
			H = 3000 V					
			W = 4000 V					

**Notes**

- 1 This is a general overview of Vishay Vitramon's part numbering system. Please refer to individual dielectric sections in this catalog for availability of specific combinations of voltage, capacitance nominal, tolerance, etc.
- 2 Case size designator may be replaced by four digit drawing number used to control non-standard products and/or requirements (i.e. Tip'N Ring, VTOP, etc.)
- 3 Process Code may be added with up to three digits, used to control non-standard products and/or special requirements.

## Multilayer Ceramic Chip Capacitors for High Temperature Applications



### FEATURES

- High operating temperature dielectric, up to + 150 °C.
- Maintain capacity at high temperature for frequency stability.



### APPLICATIONS

- Deephole drilling electronics.
- Ideal for extreme environments such as “under the hood” applications in automotive.

### ELECTRICAL SPECIFICATIONS

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

**Capacitance Range:** 470 pF to 2.2 μF.

**Temperature Coefficient of Capacitance (TCC):**  
± 15 % from - 55 °C to + 150 °C.

**Dissipation Factor (DF):**  
25 V ratings: 3.5 % maximum at 1.0 Vrms and 1kHz.  
50 V ratings: 2.5 % maximum at 1.0 Vrms and 1kHz.

**Aging Rate:** 1 % maximum per decade.

#### Insulation Resistance (IR):

At + 25 °C and rated voltage 100,000 MΩ minimum or 1000 ΩF, whichever is less.  
At + 125 °C and rated voltage 10,000 MΩ minimum or 100 ΩF, 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 50 mA.  
≤ 50 Vdc : DWV at 250 % of rated voltage.

### ORDERING INFORMATION

VJ0805	H	102	K	X	A	A	T	### <sup>2)</sup>
CASE CODE	DIELECTRIC	CAPACITANCE NOMINAL CODE	CAPACITANCE TOLERANCE	TERMINATION	DC VOLTAGE RATING <sup>1)</sup>	MARKING	PACKAGING	PROCESS CODE
0603 0805 1206 1210 1812 2225	H = X8R	Expressed in picofarads (pF). The first two digits are significant, the third is a multiplier. <b>Examples:</b> 102 = 1000 pF	J = ± 5 % K = ± 10 % M = ± 20 %	X = Ni barrier 100% tin plated. F = AgPd	X = 25 V A = 50 V	A = Unmarked M = Marked <b>NOTE:</b> only 0805, 1206 and 1210 available on request.		
							T = 7" reel / plastic tape C = 7" reel / paper tape R = 11 1/4" reel / plastic tape P = 11 1/4" reel / paper tape	

**Note**

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

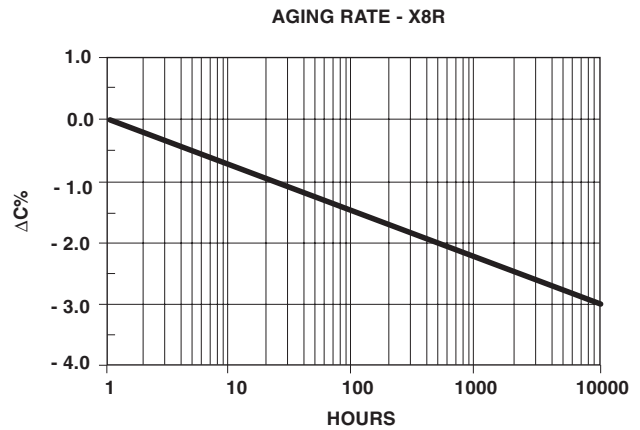
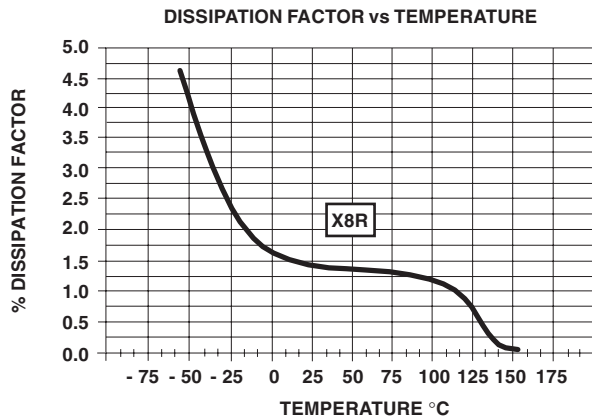
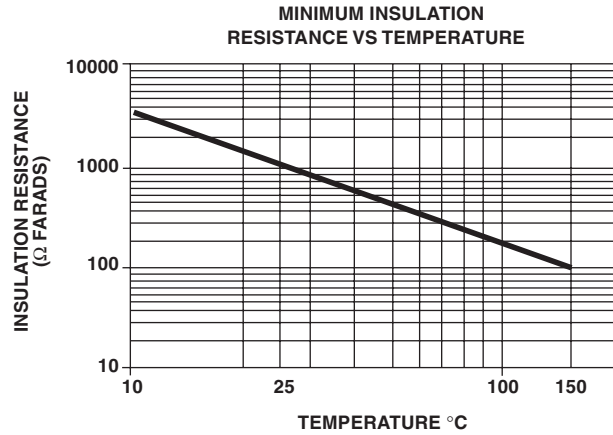
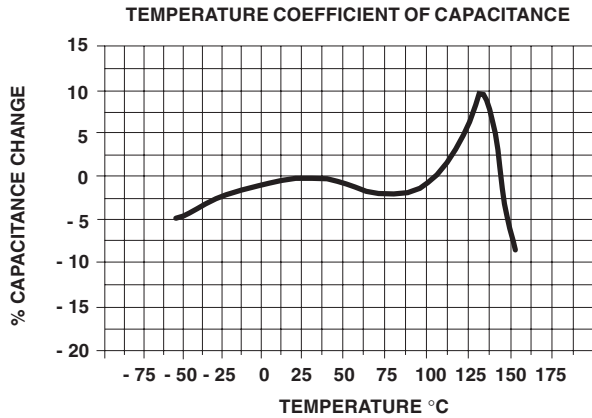


<b>X8R DIELECTRIC</b>													
STYLE		VJ0603		VJ0805		VJ1206		VJ1210 <sup>1)</sup>		VJ1812 <sup>1)</sup>		VJ2225 <sup>1)</sup>	
EIA TYPE		0603		0805		1206		1210		1812		2225	
VOLTAGE (Vdc)		25	50	25	50	25	50	25	50	25	50	25	50
CAP. CODE	CAP.												
101	100 pF												
121	120 pF												
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												
683	0.068 μF												
823	0.082 μF												
104	0.10 μF												
124	0.12 μF												
154	0.15 μF												
184	0.18 μF												
224	0.22 μF												
274	0.27 μF												
334	0.33 μF												
394	0.39 μF												
474	0.47 μF												
564	0.56 μF												
684	0.68 μF												
824	0.82 μF												
105	1.0 μF												
125	1.2 μF												
155	1.5 μF												
185	1.8 μF												
225	2.5 μF												

**Note**

1. See soldering recommendations within this data book, or visit [www.vishay.com/doc?45034](http://www.vishay.com/doc?45034)

**X8R DIELECTRIC - TYPICAL PARAMETERS**





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