

Surface Mount Multilayer Ceramic Chip Capacitors for High Temperature Applications



FEATURES

- Surface mount, precious metal technology, wet build process
- High operating temperature dielectric, up to + 150 °C
- Maintain capacity at high temperature for frequency stability

**RoHS**
COMPLIANT

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.

Operating Temperature: - 55 °C to + 150 °C

Capacitance Range: 470 pF to 2.2 μ F

Voltage Rating: 25 Vdc to 100 Vdc

Temperature Coefficient of Capacitance (TCC):

X8R \pm 15 % from - 55 °C to + 150 °C

Dissipation Factor (DF):

25 V ratings: 3.5 % maximum at 1.0 V_{rms} and 1 kHz

100 V ratings: 2.5 % maximum at 1.0 V_{rms} and 1 kHz

Aging Rate: 1 % maximum per decade

Insulation Resistance (IR):

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

At + 125 °C and rated voltage 10 000 $M\Omega$ minimum or 100 Ω 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 50 mA.

\leq 50 Vdc: DWV at 250 % of rated voltage

ORDERING INFORMATION								
VJ0805	H	102	K	X	A	A	T	### (2)
CASE CODE	DIELECTRIC	CAPACITANCE NOMINAL CODE	CAPACITANCE TOLERANCE	TERMINATION	DC VOLTAGE RATING (1)	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. Examples: 102 = 1000 pF	J = ± 5 % K = ± 10 % M = ± 20 %	X = Ni barrier 100 % tin plated. F = AgPd	X = 25 V A = 50 V B = 100 V	A = Unmarked M = Marked Note: only 0805 and 1206 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	

Notes:

- (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

DIMENSIONS in inches [millimeters]						
EIA STYLE	PART ORDERING NUMBER	LENGTH (L)	WIDTH (W)	MAXIMUM THICKNESS (T)	TERMINATION	
					MINIMUM	MAXIMUM
0603	VJ0603	0.063 ± 0.005 [1.60 ± 0.12]	0.031 ± 0.005 [0.80 ± 0.12]	0.036 [0.92]	0.012 [0.30]	0.018 [0.46]
0805	VJ0805	0.079 ± 0.008 [2.00 ± 0.20]	0.049 ± 0.008 [1.25 ± 0.20]	0.057 [1.45]	0.010 [0.25]	0.028 [0.71]
1206	VJ1206	0.126 ± 0.008 [3.20 ± 0.20]	0.063 ± 0.008 [1.60 ± 0.20]	0.067 [1.70]	0.010 [0.25]	0.028 [0.71]
1210	VJ1210	0.126 ± 0.008 [3.20 ± 0.20]	0.098 ± 0.008 [2.50 ± 0.20]	0.067 [1.70]	0.010 [0.25]	0.028 [0.71]
1812	VJ1812	0.177 ± 0.010 [4.50 ± 0.25]	0.126 ± 0.008 [3.20 ± 0.20]	0.086 [2.18]	0.010 [0.25]	0.030 [0.76]
-	VJ2225	0.220 ± 0.010 [5.59 ± 0.25]	0.250 ± 0.010 [6.35 ± 0.25]	0.086 [2.18]	0.010 [0.25]	0.030 [0.76]



SELECTION CHART																
STYLE		VJ0603		VJ0805				VJ1206		VJ1210 ⁽¹⁾			VJ1812 ⁽¹⁾		VJ2225 ⁽¹⁾	
EIA TYPE		0603		0805				1206		1210			1812		2225	
VOLTAGE (Vdc)		25	50	25	50	100	200	25	50	25	50	100	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	2.2 μF														•	

Note:

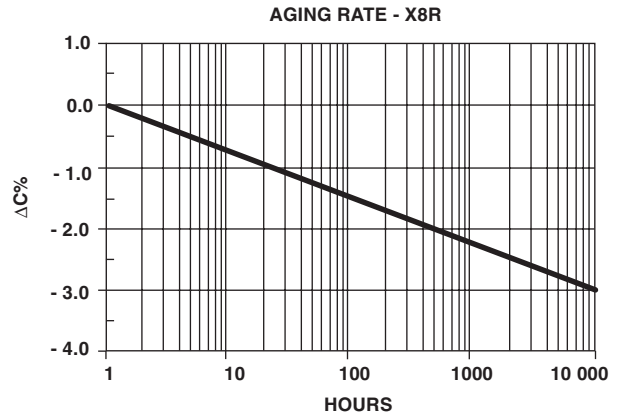
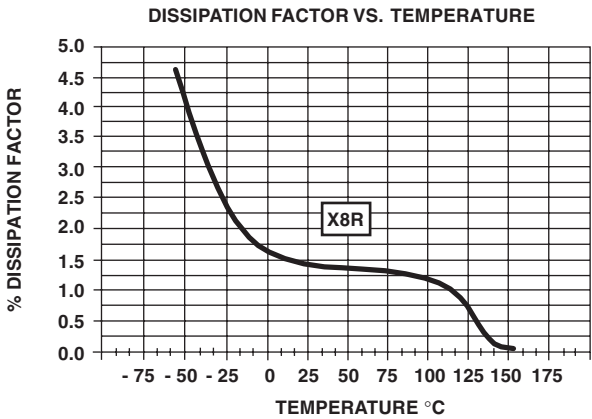
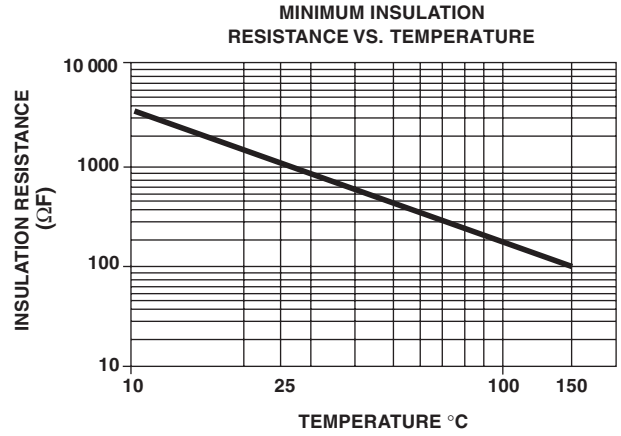
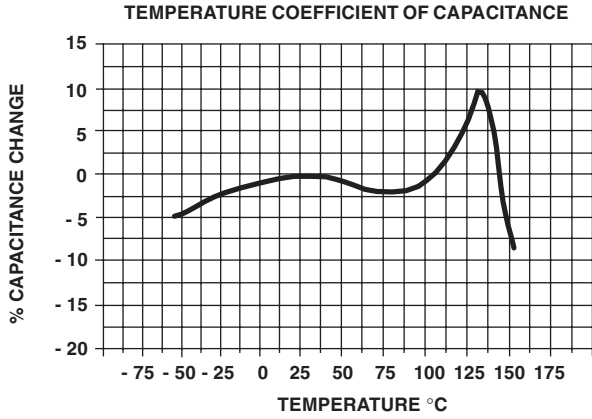
⁽¹⁾ See soldering recommendations within this data book, or visit www.vishay.com/doc?45034

VJ X8R Dielectric

Vishay Vitramon Surface Mount Multilayer Ceramic Chip Capacitors
for High Temperature Applications



X8R DIELECTRIC - TYPICAL PARAMETERS





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