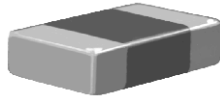


## Surface Mount Multilayer Ceramic Chip Capacitors for High Temperature Applications



### 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
- High temperature modules

### ELECTRICAL SPECIFICATIONS

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

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

**Capacitance Range:** 470 pF to 390 µF

**Voltage Rating:** 25 Vdc to 50 Vdc

**Temperature Coefficient of Capacitance (TCC):**

X8R ± 15 % from - 55 °C to + 150 °C

**Dissipation Factor (DF):**

25 V ratings: 3.5 % maximum at 1.0 V<sub>rms</sub> and 1 kHz

50 V ratings: 2.5 % maximum at 1.0 V<sub>rms</sub> and 1 kHz

**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	### (2)
CASE CODE	DIELECTRIC	CAPACITANCE NOMINAL CODE	CAPACITANCE TOLERANCE	TERMINATION	DC VOLTAGE RATING (1)	MARKING	PACKAGING	PROCESS CODE
0603 0805 1206 1210	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> Marking is only available for 0805 and 1206		
							T = 7" reel/plastic tape C = 7" reel/paper tape R = 11 1/4"/13" reel/plastic tape P = 11 1/4"/13" reel/paper tape O = 7" reel flamed paper tape I = 11 1/4"/13" reel flamed paper tape <b>Note:</b> "I" and "O" are used for "F" termination	

**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 requirements. I.e. "A2" temporarily used to identify manufacturing plant.

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]



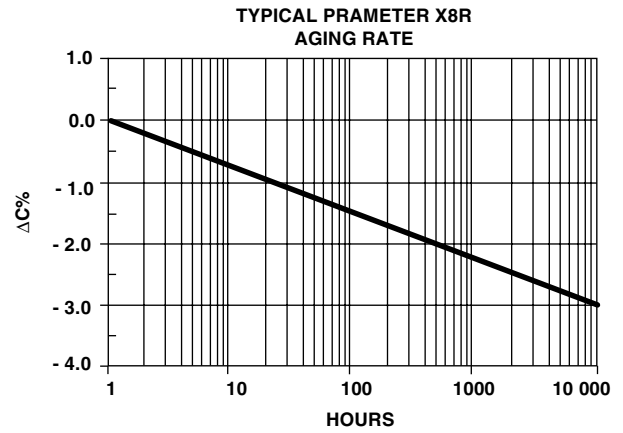
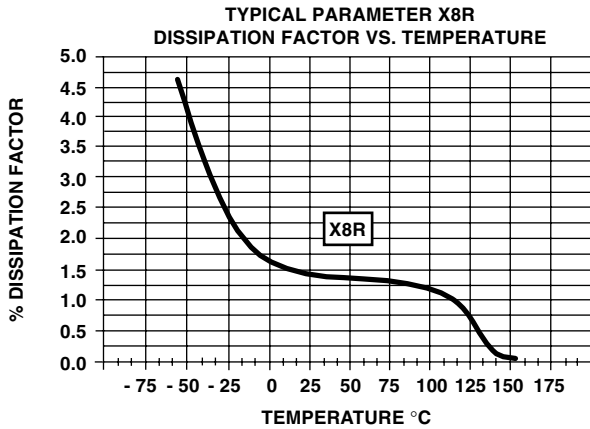
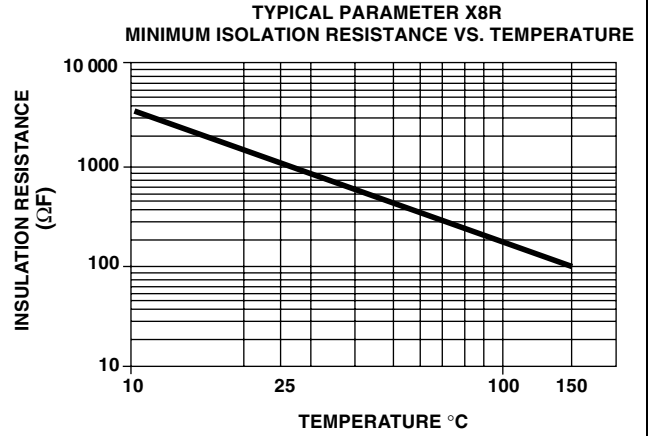
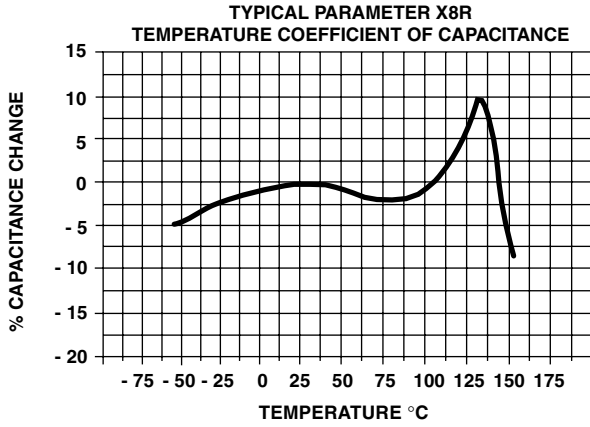
SELECTION CHART									
STYLE		VJ0603		VJ0805		VJ1206		VJ1210 (1)	
EIA TYPE		0603		0805		1206		1210	
VOLTAGE (Vdc)		25	50	25	50	25	50	25	50
CAP. CODE	CAP.								
101	100 pF								
121	120 pF								
151	150 pF								
181	180 pF								
221	220 pF								
271	270 pF								
331	330 pF								
391	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	2.2 µF								

**Notes:**

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

- Plastic Tape, •• Paper Tape

## X8R DIELECTRIC - TYPICAL PARAMETERS





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