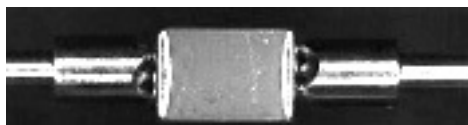
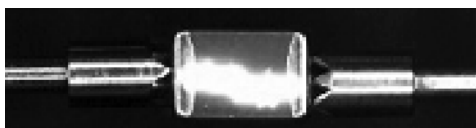


Surface Mount Multilayer Ceramic Chip Capacitors Prohibit Surface Arc-over in High Voltage Applications



HV Arc Guard® Capacitor with no Surface Arc-over



Standard Capacitor with Surface Arc-over

FEATURES

For this Worldwide Patented Technology

- Surface-mountable, precious metal technology, wet build process MLCC that protect against surface arc-over
- Higher capacitances and smaller case sizes that save board space, as compared to standard high voltage MLCCs
- Voltage breakdowns are twice that of some competitor products
- Excellent reliability and high voltage performance
- Available with polymer termination for increase resistance to board flex cracking



RoHS
COMPLIANT

APPLICATIONS

- DC-to-DC converters (Buck and Boost)
- Voltage multipliers for flyback converters
- Lighting ballast circuits
- Power Supplies

ELECTRICAL SPECIFICATIONS

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

Operating Temperature: - 55 °C to + 125 °C

Capacitance Range: 100 pF to 0.27 µF

Voltage Rating: 250 Vdc to 1000 Vdc

Temperature Coefficient of Capacitance (TCC):

X7R: ± 15 % from - 55 °C to + 125 °C, with 0 Vdc applied

Dissipation Factor:

2.5 % max. 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 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):

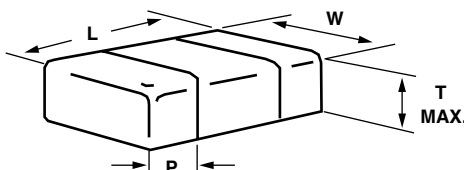
This is the maximum voltage the capacitors are tested for a 1 to 5 s period, with charge/discharge current does not exceed 50 mA.

250 Vdc: DWV at 200 % of rated voltage

500 Vdc: DWV at 150 % of rated voltage

630, 1000 Vdc: DWV at 120 % of rated voltage

DIMENSIONS in inches [millimeters]



PART ORDERING NUMBER	LENGTH (L)	WIDTH (W)	MAXIMUM THICKNESS (T)	TERMINATION PAD (P)	
				MINIMUM	MAXIMUM
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]
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]	0.030 [0.76]
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]	0.030 [0.76]
VJ1808	0.177 ± 0.010 [4.50 ± 0.25]	0.080 ± 0.010 [2.03 ± 0.25]	0.067 [1.70]	0.010 [0.25]	0.030 [0.76]
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]

ORDERING INFORMATION

VJ1812	Y	102	J	X	P	A	T	5Z
CASE CODE	DIELECTRIC	CAPACITANCE NOMINAL CODE	CAPACITANCE TOLERANCE	TERMINATION	DC VOLTAGE RATING ⁽¹⁾	MARKING	PACKAGING	PROCESS CODE ⁽²⁾
0805 1206 1210 1808 1812	Y = X7R	Expressed in picofarads (pF). The first two digits are significant, the third is a multiplier. Examples: 223 = 22 000 pF	J = ± 5 % K = ± 10 % M = ± 20 %	X = Ni barrier 100 % tin plated F = AgPd B = Polymer 100 % tin plated matte finish	P = 250 V E = 500 V L = 630 V G = 1000 V	A = Unmarked	C = 7" reel/ paper tape T = 7" reel/ plastic tape P = 11 1/4" reel/ paper tape R = 11 1/4" reel/ plastic tape	5Z = HVArc Guard®

Notes:

⁽¹⁾ DC voltage rating should not be exceeded in application

⁽²⁾ Process code with 2 digits has to be added

- Polymer plus terminations, "B" termination part number code length dimensions positive tolerances (including band width) above are allowed to increase by the following amounts:
1206 and smaller case sizes: Length 0.002" (0.05 mm)
1210 and larger case sizes: Length 0.004" (0.1 mm)

HVARC GUARD® X7R CAPACITANCE RANGE

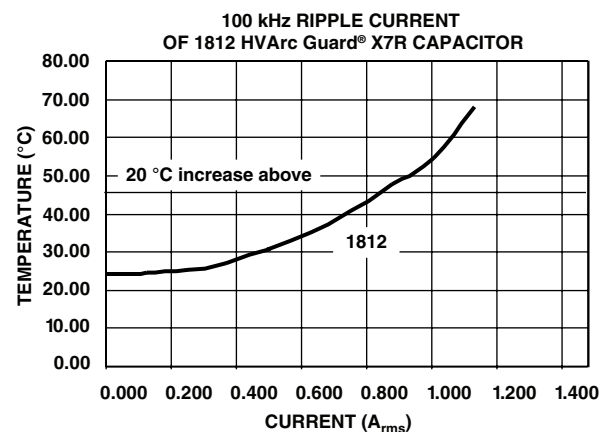
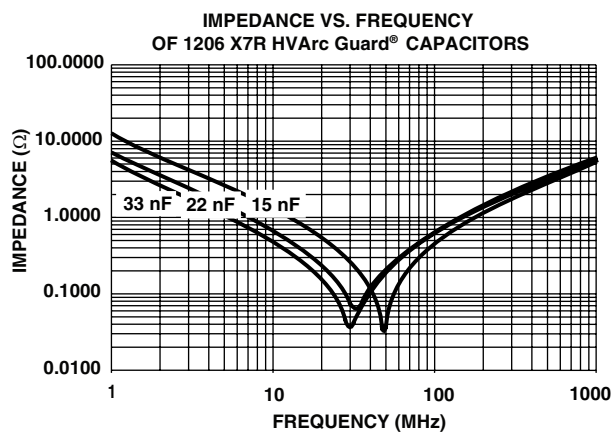
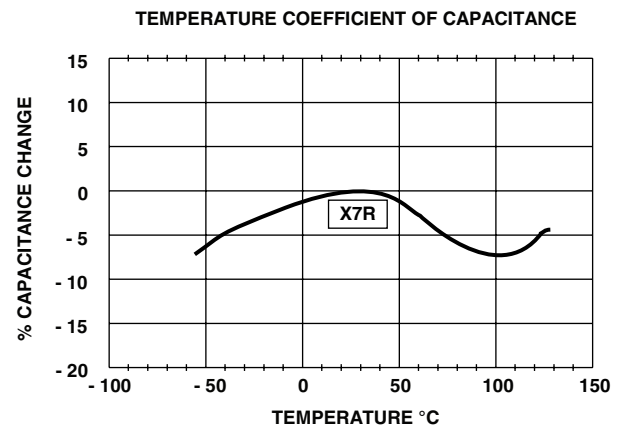
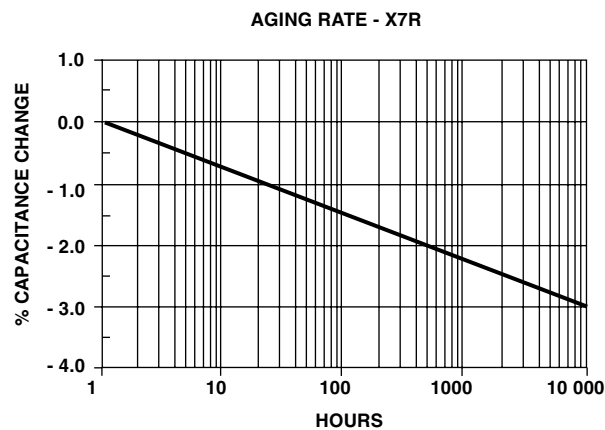
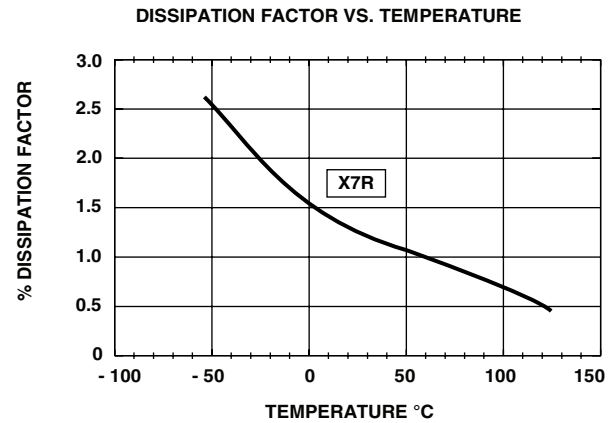
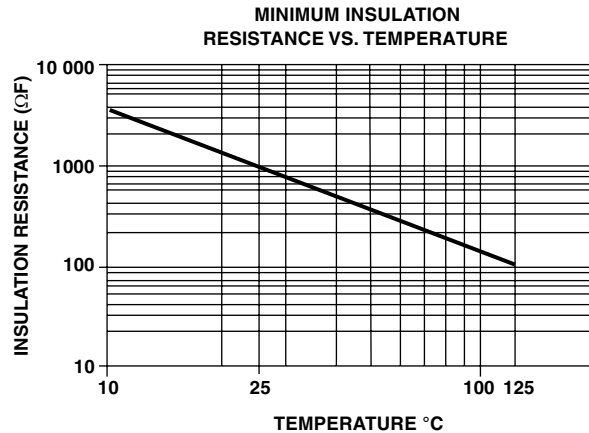
EIA CODE		0805		1206				1210				1808				1812			
VOLTAGE (Vdc)		630	1000	250	500	630	1000	250	500	630	1000	250	500	630	1000	250	500	630	1000
VOLTAGE CODE		L	G	P	E	L	G	P	E	L	G	P	E	L	G	P	E	L	G
CAP. CODE	CAP.																		
101	100 pF	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
121	120 pF	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
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	0.01 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	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Notes: See soldering recommendations within this data book, or visit www.vishay.com/doc?45034

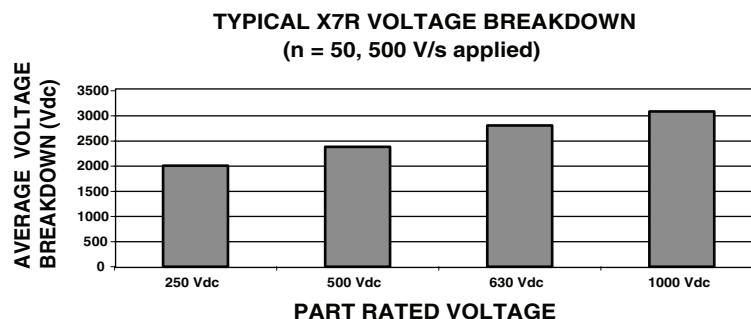
- Available in plastic carrier tape only
- Only available in paper carrier tape



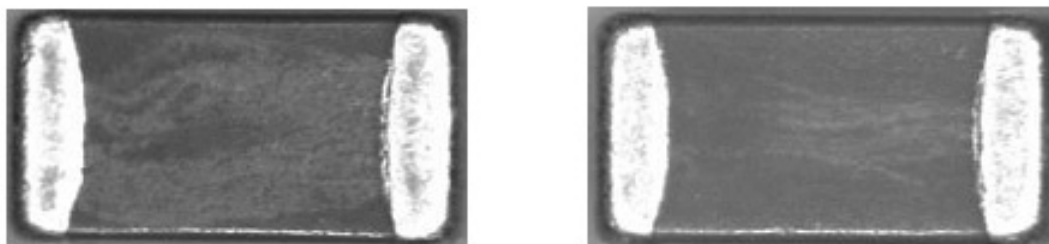
TYPICAL PARAMETERS



TYPICAL X7R VOLTAGE BREAKDOWN



TYPICAL TERMINATION TO TERMINATION SURFACE ARCING ON MLCCS (shown in polarized light)



STANDARD PACKAGING QUANTITIES

BODY SIZE	TAPE SIZE	7" REEL QUANTITIES QUANTITIES		11 1/4" AND 13" REEL QUANTITIES	
		PAPER TAPE PACKAGING CODE	PLASTIC TAPE PACKAGING CODE	PAPER TAPE PACKAGING CODE	PLASTIC TAPE PACKAGING CODE
0805	8 mm	C: 3000	T: 3000	P: 10 000	R: 10 000
1206	8 mm	N/a	T: 2500	N/a	R: 10 000
1210	8 mm	N/a	T: 2500	N/a	R: 10 000
1808	12 mm	N/a	T: 2500	N/a	R: 10 000
1812	12 mm	N/a	T: 1000	N/a	R: 5000

Notes:

- (1) Vishay Vitramon uses embossed plastic carrier tape and punch paper carrier tape
- (2) Paper tape is not available for case sizes > 1206 or for component thickness > 0.035" [0.89 mm]
- (3) 1 1/4" reel is standard for large quantities. 13" is maybe use for large "T" dimension parts
- (4) REFERENCE: EIA Standard RS 481 - "Taping of Surface Mount Components for Automatic Placement"
- (5) N/a = Not available
- (6) Packaging quantity can vary with product thickness

Please visit Vishay Website (www.vishay.com) for the following documents:
Contact mlcc.specials@vishay.com with respect to specific part number requirements.



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