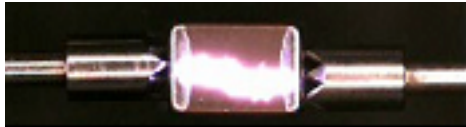




Multilayer Ceramic Capacitors that Prohibits Surface Arc-over in High Voltage Applications



HV Arc Guard™ Capacitor with no Surface Arc-over



Standard Capacitor with Surface Arc-over

ELECTRICAL SPECIFICATIONS

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

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

Capacitance Range: 10 pF to 8200 pF

Voltage Rating: 1000 Vdc to 1500 Vdc

Temperature Coefficient of Capacitance (TCC):
COG: 0 ± 30 ppm/°C from - 55 °C to + 125 °C

Dissipation Factor:
0.1 % max. at 1.0 Vrms and 1 MHz for values ≤ 1000 pF
0.1 % max. at 1.0 Vrms and 1 kHz for values > 1000 pF

Aging Rate: 0 % maximum per decade

FEATURES

For this Patented **Leaking Technology**

- Surface-mountable, multilayer ceramic capacitors, 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**



RoHS COMPLIANT

APPLICATIONS

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

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.
1000 Vdc: DWV at 150 % of rated voltage
1500 Vdc: DWV at 120 % of rated voltage

DIMENSIONS in inches [millimeters]					
PART ORDERING NUMBER	LENGTH	WIDTH	MAXIMUM THICKNESS (T)	TERMINATION PAD	
				MINIMUM	MAXIMUM
VJ1808	0.177 ± 0.010 [4.50 ± 0.25]	0.08 ± 0.010 [2.03 ± 0.25]	0.067 [1.86]	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	A	102	J	X	G	A	T	5Z
CASE CODE	DIELECTRIC	CAPACITANCE NOMINAL CODE	CAPACITANCE TOLERANCE	TERMINATION	DC VOLTAGE RATING ¹⁾	MARKING	PACKAGING	PROCESS CODE
1808 1812	A = COG	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 matte finish F = AgPd	G = 1000 V R = 1500 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 B = Bulk W = Waffle tray	5Z = HV Arc Guard™

Notes

1. DC voltage rating should not be exceeded in application
2. Process code with 2 digits has to be added

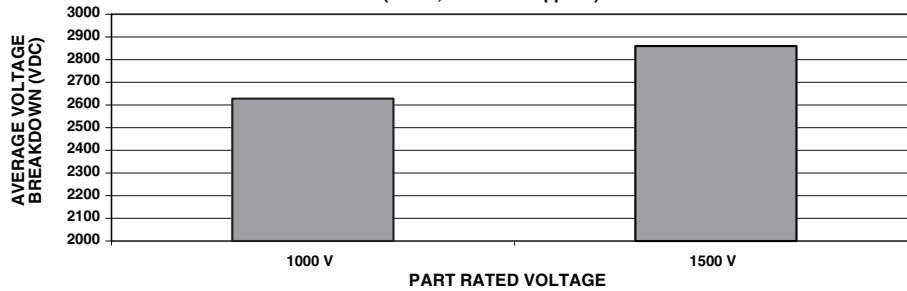


Preliminary
VJ HVArc Guard™ Capacitor C0G (NP0)

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Vishay Vitramon

TYPICAL C0G (NP0) VOLTAGE BREAKDOWN
 (n = 50, 500 V/sec. applied)



HVARC GUARD™ C0G (NP0) CAPACITANCE RANGE					
EIA CODE		1808		1812	
VOLTAGE (Vdc)		1000	1500	1000	1500
VOLTAGE CODE		G	R	G	R
CAP. CODE	CAP.				
100	10	•	•	•	•
120	12	•	•	•	•
150	15	•	•	•	•
180	18	•	•	•	•
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				

Note

- See soldering recommendations within this data book, or visit www.vishay.com/doc?45034
 - Available in plastic carrier tape only
 - Available in paper carrier tape only

VJ HVArc Guard™ Capacitor C0G (NP0)

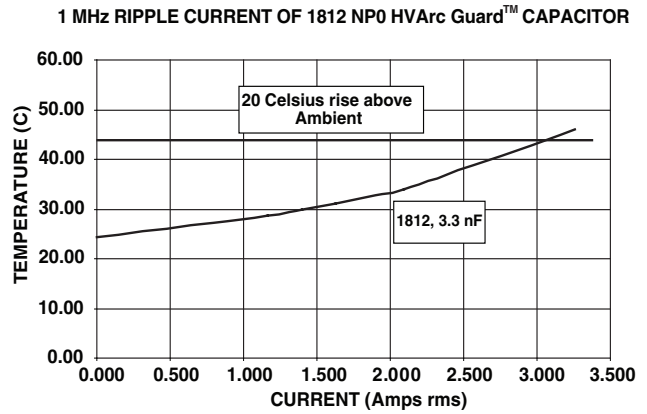
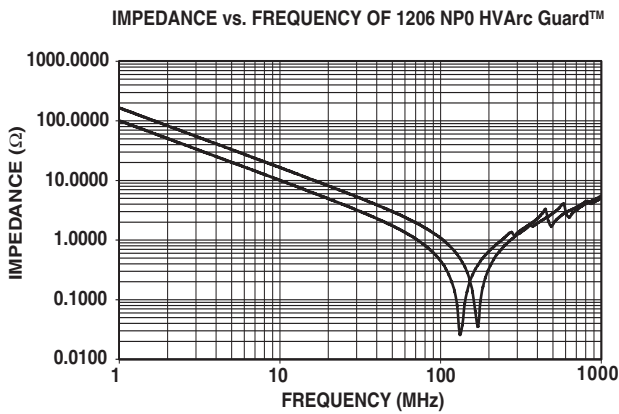
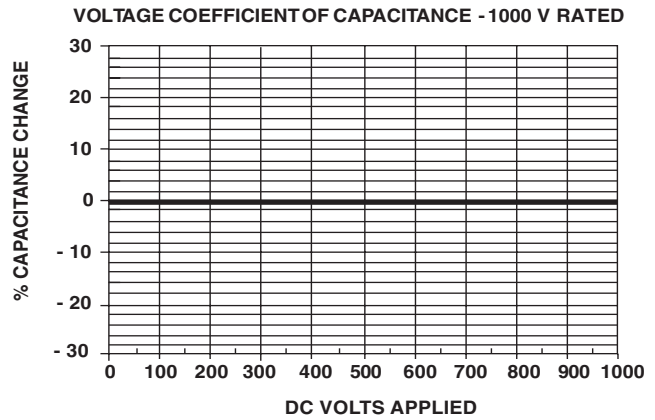
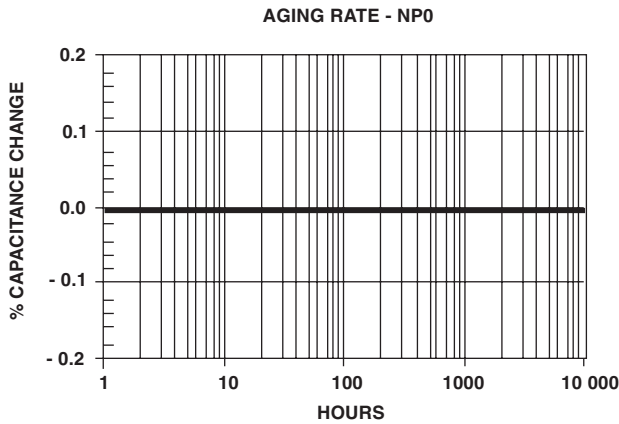
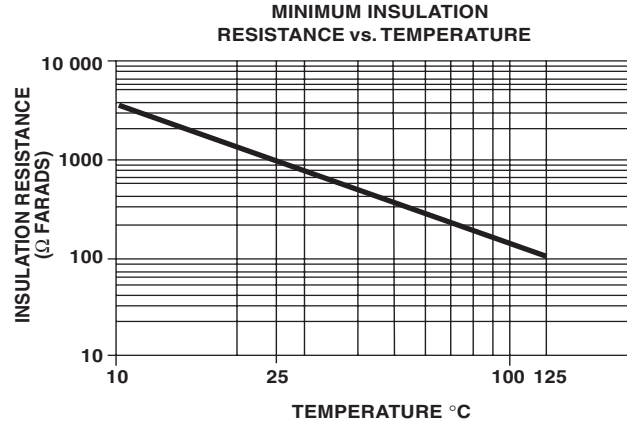
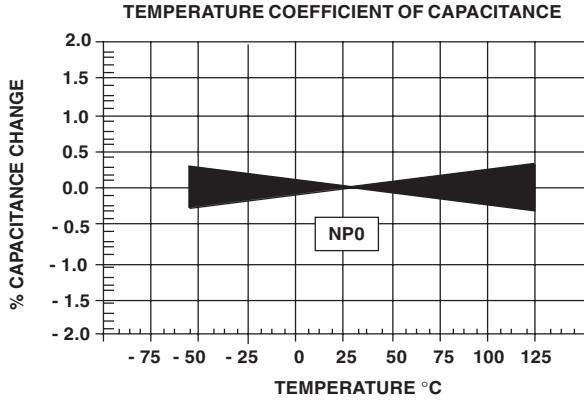
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C0G (NP0) DIELECTRIC - TYPICAL PARAMETERS

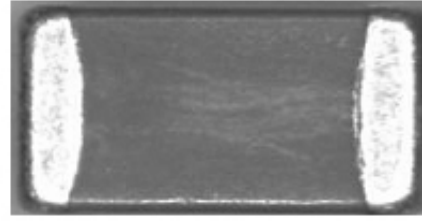
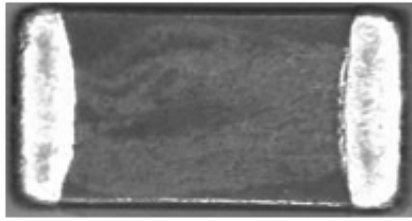




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Typical termination to termination surface arcing on MLCCs (shown in polarized light)

STANDARD PACKAGING QUANTITIES					
		7" REEL QUANTITIES		11 1/4" AND 13" REEL QUANTITIES	
BODY SIZE	TAPE SIZE	PAPER TAPE PACKAGING CODE	PLASTIC TAPE PACKAGING CODE	PAPER TAPE PACKAGING CODE	PLASTIC TAPE PACKAGING CODE
1808	12 mm	N/A	T: 3000	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. 11 1/4" reel is standard for large quantities. 13" is maybe used for large "T" dimension parts.
4. REFERENCE: EIA Standard RS 481 - "Taping of Surface Mount Components for Automatic Placement".
5. N/A = Not available.

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