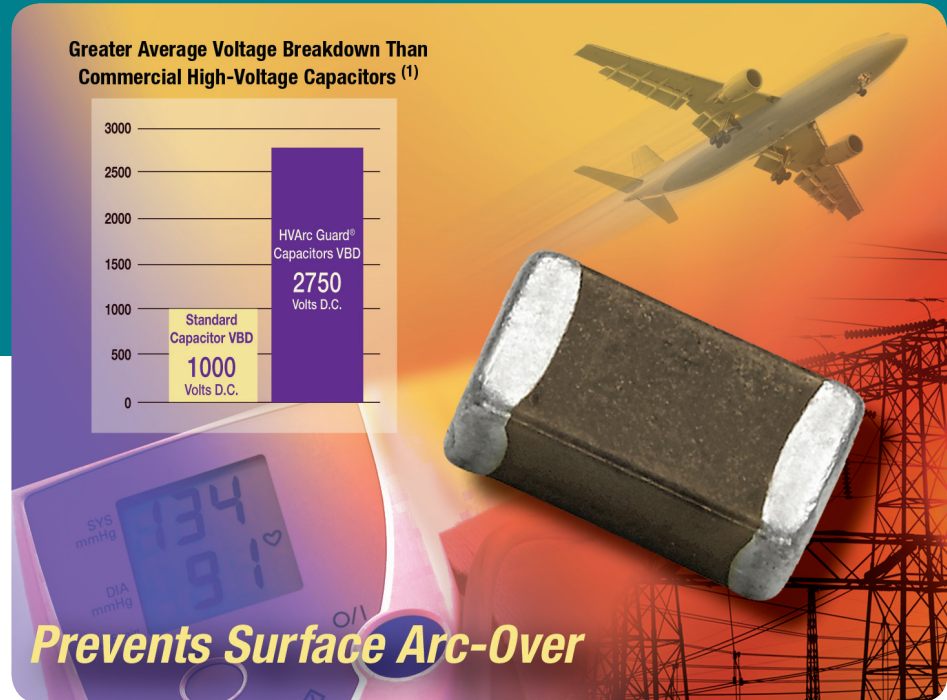




HVArc Guard® HIGH-VOLTAGE, SURFACE-MOUNT MULTILAYER CERAMIC CHIP CAPACITORS



Surface-Mount Multilayer Ceramic Chip Capacitors Prevent Surface Arc-Over

KEY BENEFITS

- Average voltage breakdown (VBD) is typically twice that of standard commercial grade products
- Offer capacitance ranges of 10 pF to 0.27 μ F
- High capacitance and small case sizes save board space (compared to standard high-voltage MLCCs)
- Excellent reliability and high-voltage performance: rated for 250 V_{DC} to 2500 V_{DC}
- Eliminate the need to encapsulate capacitors with a conformal coating
- Replaces wire-leaded, through-hole capacitors
- Available with polymer terminations

APPLICATIONS

- Medical equipment and instrumentation
- Electronic transmissions
- DC electric motors
- High-voltage generators
- S/B lighting ballasts for compact florescent lighting and HID
- Power supplies

Note

⁽¹⁾ 1206 case size, X7R dielectric, 33 nF, 500 V_{DC} rated HVArc Guard® vs. commercial grade capacitor when tested in air, not covered in fluid or conformal coated.

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



HVArc Guard® Capacitor with no Surface Arc-Over



Standard Capacitor with Surface Arc-Over

FEATURES

- Specialty: High voltage applications
 - MLCG at protects against surface arc-over
 - Excellent high voltage performance
 - Higher capacitance and smaller case sizes that save board space, as compared to standard high voltage MLCGs
 - Available with polymer termination for increased resistance to board flex cracking. Please contact factory for availability.
 - Wet build process
 - Reliable Noble Metal Electrode (NME) system
 - Compliant to RoHS directive 2002/95/EC
 - Halogen-free according to IEC 61249-2-21
- ### APPLICATIONS
- Power supplies
 - DC/DC converters (buck and boost)
 - Voltage multipliers for flyback converters
 - For lighting and other AC applications please contact: mlcc@vishay.com

XTR

GENERAL SPECIFICATION

Electrical characteristics at +25 °C unless otherwise specified

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

Capacitance Range: 100 pF to 270 nF

Voltage Range: 250 V_{DC} to 1000 V_{DC}

Temperature Coefficient of Capacitance (TCC) ±15 % from -55 °C to +125 °C, with 0 V_{DC} applied

Dielectric Factor (DF) 2.5 % maximum at 1.0 V_{DC} and 1 kHz

Insulating Resistance At +25 °C 100,000 MΩ min. or 1000 ΩF whichever is less At +125 °C 10,000 MΩ min. or 100 ΩF whichever is less

Agging Rate 1 % maximum per decade

Dielectric Strength Test Applied test voltages: 200 % of rated voltage 500 V_{DC}-rated: 150 % of rated voltage 1000 V_{DC}-rated: 120 % of rated voltage

Performance per method 103 of EIA 198-2-E 1500 V_{DC}-rated: 150 % of rated voltage 1000 V_{DC}-rated: 120 % of rated voltage

CGG (NPO)

GENERAL SPECIFICATION

Electrical characteristics at +25 °C unless otherwise specified

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

Capacitance Range: 10 pF to 6.2 nF

Voltage Range: 1000 V_{DC} to 2500 V_{DC}

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

Dielectric Factor (DF) 0.1 % maximum at 1.0 V_{DC} and 1 MHz for values ≤ 1000 pF 0.1 % maximum at 1.0 V_{DC} and 1 kHz for values > 1000 pF

Insulating Resistance At +25 °C 100,000 MΩ min. or 1000 ΩF whichever is less At +125 °C 10,000 MΩ min. or 100 ΩF whichever is less

Agging Rate 0 % maximum per decade

Dielectric Strength Test Applied test voltages: 200 % of rated voltage 500 V_{DC}-rated: 150 % of rated voltage 1000 V_{DC}-rated: 120 % of rated voltage

ORDERING INFORMATION (4)

VA0805	A	101	J	C	52 #8
CASE CODE	DIELECTRIC CODE	CAPACITANCE VALUE	TOLERANCE	MARKING	PROCESS CODE
0805	A = CGG (NPO) Y = XTR	Expressed in picofarads (pF) digits are significant, the multiplier is implied. Example: 101 = 100 pF 222 = 2200 pF	±5 % ±10 % ±20 %	X = Ni-barium 10 % tin plated N = Polymer B = 11/14/13 resin/plastic tape Non-magnetic	52 = HVArc Guard®
1206				A = Unmarked G = 77 resin/plastic tape P = 11/14/13 resin/plastic tape I = 11/14/13 resin/plastic tape	
1812					
2225					

Notes

- OC voltage rating should not be exceeded in application. Other application factors may affect the MLCG performance.
- Process code with 2 digits has to be added
- For conductive epoxy assembly, contact mlcc@vishay.com for availability
- Please contact factory for polymer termination availability

Revision 03-Aug-10

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For technical questions, contact mlcc@vishay.com

SELECTION CHART COG (NPO)

EIA CODE	VJ1206		VJ1210		VJ2220		VJ2225	
	1000	1500	1000	1500	1000	1500	1000	1500
VOLTAGE (V _{DC})	1000	1500	1000	1500	1000	1500	1000	1500
100	**	**	**	**	**	**	**	**
120	**	**	**	**	**	**	**	**
150	**	**	**	**	**	**	**	**
200	**	**	**	**	**	**	**	**
270	**	**	**	**	**	**	**	**
300	**	**	**	**	**	**	**	**
360	**	**	**	**	**	**	**	**
470	**	**	**	**	**	**	**	**
560	**	**	**	**	**	**	**	**
680	**	**	**	**	**	**	**	**
820	**	**	**	**	**	**	**	**
101	**	**	**	**	**	**	**	**
121	**	**	**	**	**	**	**	**
151	**	**	**	**	**	**	**	**
181	**	**	**	**	**	**	**	**
221	**	**	**	**	**	**	**	**
271	**	**	**	**	**	**	**	**
331	**	**	**	**	**	**	**	**
391	**	**	**	**	**	**	**	**
431	**	**	**	**	**	**	**	**
471	**	**	**	**	**	**	**	**
561	**	**	**	**	**	**	**	**
681	**	**	**	**	**	**	**	**
821	**	**	**	**	**	**	**	**
102	**	**	**	**	**	**	**	**
122	**	**	**	**	**	**	**	**
152	**	**	**	**	**	**	**	**
182	**	**	**	**	**	**	**	**
222	**	**	**	**	**	**	**	**
272	**	**	**	**	**	**	**	**
332	**	**	**	**	**	**	**	**
392	**	**	**	**	**	**	**	**
472	**	**	**	**	**	**	**	**
562	**	**	**	**	**	**	**	**
682	**	**	**	**	**	**	**	**
822	**	**	**	**	**	**	**	**

Notes

- * Available in plastic carrier tape only
- ** Available in paper carrier tape only

SELECTION CHART XTR

EIA CODE	VJ1206		VJ1210		VJ1812	
	1000	1500	1000	1500	1000	1500
VOLTAGE (V _{DC})	1000	1500	1000	1500	1000	1500
101	**	**	**	**	**	**
151	**	**	**	**	**	**
181	**	**	**	**	**	**
221	**	**	**	**	**	**
271	**	**	**	**	**	**
331	**	**	**	**	**	**
391	**	**	**	**	**	**
471	**	**	**	**	**	**
561	**	**	**	**	**	**
681	**	**	**	**	**	**
821	**	**	**	**	**	**
102	**	**	**	**	**	**
122	**	**	**	**	**	**
152	**	**	**	**	**	**
182	**	**	**	**	**	**
222	**	**	**	**	**	**
272	**	**	**	**	**	**
332	**	**	**	**	**	**
392	**	**	**	**	**	**
472	**	**	**	**	**	**
562	**	**	**	**	**	**
682	**	**	**	**	**	**
822	**	**	**	**	**	**
103	**	**	**	**	**	**
123	**	**	**	**	**	**
153	**	**	**	**	**	**
183	**	**	**	**	**	**
223	**	**	**	**	**	**
273	**	**	**	**	**	**
333	**	**	**	**	**	**
393	**	**	**	**	**	**
473	**	**	**	**	**	**
563	**	**	**	**	**	**
683	**	**	**	**	**	**
823	**	**	**	**	**	**
104	**	**	**	**	**	**
124	**	**	**	**	**	**
154	**	**	**	**	**	**
184	**	**	**	**	**	**
224	**	**	**	**	**	**
274	**	**	**	**	**	**
334	**	**	**	**	**	**

Notes

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

STANDARD PACKAGING QUANTITIES (1)(2)(3)(4)(5)

BODY SIZE	7" REEL QUANTITIES		11 1/4" AND 12" REEL QUANTITIES	
	PAPER TAPE PACKAGING CODE "C"/"D"	PLASTIC TAPE PACKAGING CODE "T"	PAPER TAPE PACKAGING CODE "P"/"T"	PLASTIC TAPE PACKAGING CODE "E"/"T"
0805	3000	3000	10,000	10,000
1206 (6)	3000	3000	N/A	N/A
1210 (6)	N/A	2500	N/A	10,000
1808	N/A	2500	N/A	10,000
1812	N/A	2000	N/A	10,000
2220	12 mm	1000	N/A	4000
VJ2225	12 mm	1000	N/A	4000

Notes

- Vishay Vitramon uses embossed plastic carrier tape and punch paper carrier tape
- Paper tape is not available for case sizes > 1206 or for component thickness > 0.035" (0.89 mm)
- 11 1/4" reel is standard for large quantities. 13" is supplied used for large "T" dimension parts
- For EIA-1812, EIA Standard IS-481 - "T" Taping of Surface Mount Components for Automatic Placement
- Packaging quantity can vary with product thickness
- Contact mlcc@vishay.com with respect to specific part number requirements

