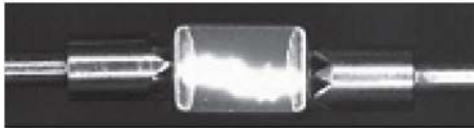


## Surface Mount Multilayer Ceramic Chip Capacitors Prohibit Surface Arc-Over in High-Voltage Applications



HV Arc Guard® Capacitor with no Surface Arc-over



Standard Capacitor with Surface Arc-over

### FEATURES

#### For this Worldwide Patented Technology

- Specialty: High-voltage applications
- MLCC that protects against surface arc-over
- Excellent high-voltage performance
- Higher capacitances and smaller case sizes that save board space, as compared to standard high-voltage MLCCs
- Voltage breakdowns as much as twice that of competitors' products
- Available with polymer termination for increase resistance to board flex cracking. Please contact factory for availability
- Wet build process
- Reliable Noble Metal Electrode (NME) system
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)  
Available

### 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](mailto:mlcc@vishay.com)

### ELECTRICAL SPECIFICATIONS

| COG (NPO)   |  |
|---|--|
| <b>GENERAL SPECIFICATION</b>  |  |
| <b>Note</b><br>Electrical characteristics at + 25 °C unless otherwise specified   |  |
| <b>Operating Temperature:</b> - 55 °C to + 125 °C   |  |
| <b>Capacitance Range:</b> 10 pF to 8.2 nF   |  |
| <b>Voltage Range:</b> 1000 V <sub>DC</sub> to 2500 V <sub>DC</sub>  |  |
| <b>Temperature Coefficient of Capacitance (TCC):</b><br>0 ppm/°C ± 30 ppm/°C from - 55 °C to + 125 °C   |  |
| <b>Dissipation Factor (DF):</b><br>0.1 % maximum at 1.0 V <sub>RMS</sub> and<br>1 MHz for values ≤ 1000 pF<br>0.1 % maximum at 1.0 V <sub>RMS</sub> and<br>1 kHz for values > 1000 pF   |  |
| <b>Insulating Resistance:</b><br>At + 25 °C 100 000 MΩ min. or 1000 ΩF whichever is less<br>At + 125 °C 10 000 MΩ min. or 100 ΩF whichever is less  |  |
| <b>Aging Rate:</b> 0 % maximum per decade   |  |
| <b>Dielectric Strength Test:</b><br>Performed per method 103 of EIA 198-2-E<br>Applied test voltages<br>1000 V <sub>DC</sub> -rated: 150 % of rated voltage<br>1500 V <sub>DC</sub> , 2500 V <sub>DC</sub> -rated: 120 % of rated voltage |  |

| X7R   |  |
|---|--|
| <b>GENERAL SPECIFICATION</b>  |  |
| <b>Note</b><br>Electrical characteristics at + 25 °C unless otherwise specified   |  |
| <b>Operating Temperature:</b> - 55 °C to + 125 °C   |  |
| <b>Capacitance Range:</b> 220 pF to 270 nF  |  |
| <b>Voltage Range:</b> 250 V <sub>DC</sub> to 1000 V <sub>DC</sub>   |  |
| <b>Temperature Coefficient of Capacitance (TCC):</b><br>± 15 % from - 55 °C to + 125 °C, with 0 V <sub>DC</sub> applied   |  |
| <b>Dissipation Factor (DF):</b><br>2.5 % maximum at 1.0 V <sub>RMS</sub> and 1 kHz  |  |
| <b>Insulating Resistance:</b><br>At + 25 °C 100 000 MΩ min. or 1000 ΩF whichever is less<br>At + 125 °C 10 000 MΩ min. or 100 ΩF whichever is less  |  |
| <b>Aging Rate:</b> 1 % maximum per decade   |  |
| <b>Dielectric Strength Test:</b><br>Performed per method 103 of EIA 198-2-E.<br>Applied test voltages<br>≤ 250 V <sub>DC</sub> -rated: 200 % of rated voltage<br>500 V <sub>DC</sub> -rated: min. 150 % of rated voltage<br>630 V <sub>DC</sub> , 1000 V <sub>DC</sub> -rated: 120 % of rated voltage |  |



| QUICK REFERENCE DATA |      |                     |             |         |
|----------------------|------|---------------------|-------------|---------|
| DIELECTRIC           | CASE | MAXIMUM VOLTAGE (V) | CAPACITANCE |         |
|                      |      |                     | MINIMUM     | MAXIMUM |
| C0G (NP0)            | 0805 | 1500                | 10 pF       | 390 pF  |
|                      | 1206 | 1500                | 10 pF       | 1.5 nF  |
|                      | 1210 | 1500                | 10 pF       | 2.7 nF  |
|                      | 2220 | 1500                | 470 pF      | 5.6 nF  |
|                      | 2225 | 2500                | 470 pF      | 8.2 nF  |
| X7R                  | 0805 | 1000                | 470 pF      | 3.3 nF  |
|                      | 1206 | 1000                | 220 pF      | 47 nF   |
|                      | 1210 | 1000                | 220 pF      | 82 nF   |
|                      | 1808 | 1000                | 220 pF      | 100 nF  |
|                      | 1812 | 1000                | 220 pF      | 270 nF  |

**Note**

- Detail ratings see “Selection Chart”

| ORDERING INFORMATION (4)                             |                          |   |                                       |   |   |              |   |                   |
|--|--------------------------|---|---------------------------------------|---|---|--------------|---|-------------------|
| VJ0805   | A                        | 101   | J                                     | X   | G   | A            | C   | 5Z (2)            |
| CASE CODE  | DIELECTRIC               | CAPACITANCE NOMINAL CODE  | CAPACITANCE TOLERANCE                 | TERMINATION   | DC VOLTAGE RATING (1)   | MARKING      | PACKAGING   | PROCESS CODE      |
| 0805<br>1206<br>1210<br>1808<br>1812<br>2220<br>2225 | A = C0G (NP0)<br>Y = X7R | Expressed in picofarads (pF). The first two digits are significant, the third is a multiplier.<br><b>Examples</b><br>102 = 1000 pF<br>223 = 22 000 pF | J = ± 5 %<br>K = ± 10 %<br>M = ± 20 % | X = Ni barrier 100 % tin plated<br>F, E = AgPd (3)<br>B = Polymer 100 % tin plated matte finish (4)<br>N = Non-magnetic | P = 250 V<br>E = 500 V<br>L = 630 V<br>G = 1000 V<br>R = 1500 V<br>O = 2500 V | A = Unmarked | C = 7" reel/paper tape<br>T = 7" reel/plastic tape<br>P = 11 1/4"/13" reel/paper tape<br>R = 11 1/4"/13" reel/plastic tape<br>O = 7" reel/flamed paper tape<br>I = 11 1/4"/13" reel/flamed paper tape<br><br><b>Note:</b><br>“I” and “O” are used for “F”, “E”, “N” termination size 0805 | 5Z = HVArc Guard® |

**Notes**

- (1) DC voltage rating should not be exceeded in application. Other application factors may affect the MLCC performance. Consult for questions: [mlcc@vishay.com](mailto:mlcc@vishay.com)
- (2) Process code with 2 digits has to be added
- (3) Termination code “E” is for conductive epoxy assembly, contact [mlcc@vishay.com](mailto:mlcc@vishay.com) for availability
- (4) Please contact factory for polymer termination availability

| ENVIRONMENTAL STATUS |  |                |              |
|----------------------|--|----------------|--------------|
| TERMINATION CODE     | TERMINATION DESCRIPTION                      | RoHS COMPLIANT | VISHAY GREEN |
| X                    | Ni barrier 100 % tin plated matte finish     | Yes            | Yes          |
| E                    | AgPd   | Yes            | Yes          |
| B                    | Polymer layer, 100 % tin plated matte finish | Yes            | No           |
| F                    | AgPd   | Yes            | No           |
| N                    | Non-magnetic                                 | Yes            | No           |

**DIMENSIONS** in inches (millimeters)


| CASE CODE | STYLE  | LENGTH (L)                     | WIDTH (W)                       | MAXIMUM THICKNESS (T) | TERMINATION PAD (P) |              |
|-----------|--------|--------------------------------|---------------------------------|-----------------------|---------------------|--------------|
|           |        |                                |                                 |                       | MINIMUM             | MAXIMUM      |
| 0805      | VJ0805 | 0.079 ± 0.008<br>(2.00 ± 0.20) | 0.049 ± 0.008<br>(1.25 ± 0.020) | 0.057 (1.45)          | 0.010 (0.25)        | 0.028 (0.71) |
| 1206      | VJ1206 | 0.126 ± 0.008<br>(3.20 ± 0.20) | 0.063 ± 0.008<br>(1.60 ± 0.20)  | 0.067 (1.70)          | 0.010 (0.25)        | 0.030 (0.76) |
| 1210      | VJ1210 | 0.126 ± 0.008<br>(3.20 ± 0.20) | 0.098 ± 0.008<br>(2.50 ± 0.020) | 0.067 (1.70)          | 0.010 (0.25)        | 0.030 (0.76) |
| 1808      | VJ1808 | 0.180 ± 0.012<br>(4.57 ± 0.30) | 0.080 ± 0.010<br>(2.03 ± 0.25)  | 0.067 (1.70)          | 0.010 (0.25)        | 0.030 (0.76) |
| 1812      | VJ1812 | 0.177 ± 0.012<br>(4.50 ± 0.30) | 0.126 ± 0.008<br>(3.20 ± 0.20)  | 0.086 (2.18)          | 0.010 (0.25)        | 0.030 (0.76) |
| 2220      | VJ2220 | 0.220 ± 0.010<br>(5.59 ± 0.25) | 0.200 ± 0.010<br>(5.08 ± 0.25)  | 0.086 (2.18)          | 0.010 (0.25)        | 0.030 (0.76) |
| 2225      | VJ2225 | 0.220 ± 0.010<br>(5.59 ± 0.25) | 0.250 ± 0.010<br>(6.35 ± 0.25)  | 0.090 (2.30)          | 0.010 (0.25)        | 0.030 (0.76) |

**Note**

- Polymer (B-termination) have increased dimensions:  
Length 0.006" (0.15 mm)



| SELECTION CHART COG (NPO)  |        |           |      |        |      |        |      |        |      |        |      |      |
|----------------------------|--------|-----------|------|--------|------|--------|------|--------|------|--------|------|------|
| DIELECTRIC                 |        | COG (NPO) |      |        |      |        |      |        |      |        |      |      |
| STYLE                      |        | VJ0805    |      | VJ1206 |      | VJ1210 |      | VJ2220 |      | VJ2225 |      |      |
| CASE CODE                  |        | 0805      |      | 1206   |      | 1210   |      | 2220   |      | 2225   |      |      |
| VOLTAGE (V <sub>DC</sub> ) |        | 1000      | 1500 | 1000   | 1500 | 1000   | 1500 | 1000   | 1500 | 1000   | 1500 | 2500 |
| VOLTAGE CODE               |        | G         | R    | G      | R    | G      | R    | G      | R    | G      | R    | O    |
| CAP. CODE                  | CAP.   |           |      |        |      |        |      |        |      |        |      |      |
| 100                        | 10 pF  | •         | •    | •      | •    | •      | •    |        |      |        |      |      |
| 120                        | 12 pF  | •         | •    | •      | •    | •      | •    |        |      |        |      |      |
| 150                        | 15 pF  | •         | •    | •      | •    | •      | •    |        |      |        |      |      |
| 180                        | 18 pF  | •         | •    | •      | •    | •      | •    |        |      |        |      |      |
| 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                        | 1.0 nF |           |      | •      | •    | •      | •    | •      | •    | •      | •    | •    |
| 122                        | 1.2 nF |           |      | •      | •    | •      | •    | •      | •    | •      | •    | •    |
| 152                        | 1.5 nF |           |      | •      | •    | •      | •    | •      | •    | •      | •    | •    |
| 182                        | 1.8 nF |           |      |        |      | •      | •    | •      | •    | •      | •    | •    |
| 222                        | 2.2 nF |           |      |        |      | •      | •    | •      | •    | •      | •    | •    |
| 272                        | 2.7 nF |           |      |        |      | •      | •    | •      | •    | •      | •    | •    |
| 332                        | 3.3 nF |           |      |        |      |        |      | •      | •    | •      | •    | •    |
| 392                        | 3.9 nF |           |      |        |      |        |      | •      | •    | •      | •    | •    |
| 472                        | 4.7 nF |           |      |        |      |        |      | •      | •    | •      | •    | •    |
| 562                        | 5.6 nF |           |      |        |      |        |      | •      | •    | •      | •    | •    |
| 682                        | 6.8 nF |           |      |        |      |        |      |        |      | •      | •    | •    |
| 822                        | 8.2 nF |           |      |        |      |        |      |        |      | •      | •    | •    |

**Notes**

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

- Available in plastic carrier tape only

■ RoHS-compliant



| SELECTION CHART X7R        |        |        |      |        |     |     |      |        |     |     |      |        |     |     |      |        |     |     |      |
|----------------------------|--------|--------|------|--------|-----|-----|------|--------|-----|-----|------|--------|-----|-----|------|--------|-----|-----|------|
| DIELECTRIC                 |        | X7R    |      |        |     |     |      |        |     |     |      |        |     |     |      |        |     |     |      |
| STYLE                      |        | VJ0805 |      | VJ1206 |     |     |      | VJ1210 |     |     |      | VJ1808 |     |     |      | VJ1812 |     |     |      |
| CASE CODE                  |        | 0805   |      | 1206   |     |     |      | 1210   |     |     |      | 1808   |     |     |      | 1812   |     |     |      |
| VOLTAGE (V <sub>DC</sub> ) |        | 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                        | 1.0 nF | ••     | ••   | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 122                        | 1.2 nF | ••     | ••   | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 152                        | 1.5 nF | •      | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 182                        | 1.8 nF | •      | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 222                        | 2.2 nF | •      | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 272                        | 2.7 nF | •      | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 332                        | 3.3 nF | •      | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 392                        | 3.9 nF |        |      | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 472                        | 4.7 nF |        |      | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 562                        | 5.6 nF |        |      | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 682                        | 6.8 nF |        |      | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 822                        | 8.2 nF |        |      | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 103                        | 10 nF  |        |      | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 123                        | 12 nF  |        |      | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 153                        | 15 nF  |        |      | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 183                        | 18 nF  |        |      | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 223                        | 22 nF  |        |      | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 273                        | 27 nF  |        |      | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 333                        | 33 nF  |        |      | •      | •   |     |      | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 393                        | 39 nF  |        |      | •      | •   |     |      | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 473                        | 47 nF  |        |      | •      | •   |     |      | •      | •   | •   | •    | •      | •   | •   | •    | •      | •   | •   | •    |
| 563                        | 56 nF  |        |      |        |     |     |      | •      | •   | •   |      | •      | •   |     |      | •      | •   | •   | •    |
| 683                        | 68 nF  |        |      |        |     |     |      | •      | •   |     |      | •      |     |     |      | •      | •   | •   | •    |
| 823                        | 82 nF  |        |      |        |     |     |      | •      | •   |     |      | •      |     |     |      | •      | •   | •   | •    |
| 104                        | 100 nF |        |      |        |     |     |      |        |     |     |      | •      |     |     |      | •      | •   | •   |      |
| 124                        | 120 nF |        |      |        |     |     |      |        |     |     |      |        |     |     |      | •      |     |     |      |
| 154                        | 150 nF |        |      |        |     |     |      |        |     |     |      |        |     |     |      | •      |     |     |      |
| 184                        | 180 nF |        |      |        |     |     |      |        |     |     |      |        |     |     |      | •      |     |     |      |
| 224                        | 220 nF |        |      |        |     |     |      |        |     |     |      |        |     |     |      | •      |     |     |      |
| 274                        | 270 nF |        |      |        |     |     |      |        |     |     |      |        |     |     |      | •      |     |     |      |
| 334                        | 330 nF |        |      |        |     |     |      |        |     |     |      |        |     |     |      |        |     |     |      |

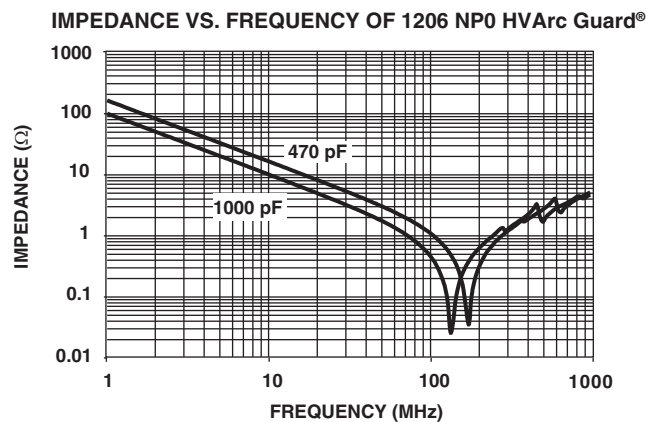
Notes

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

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

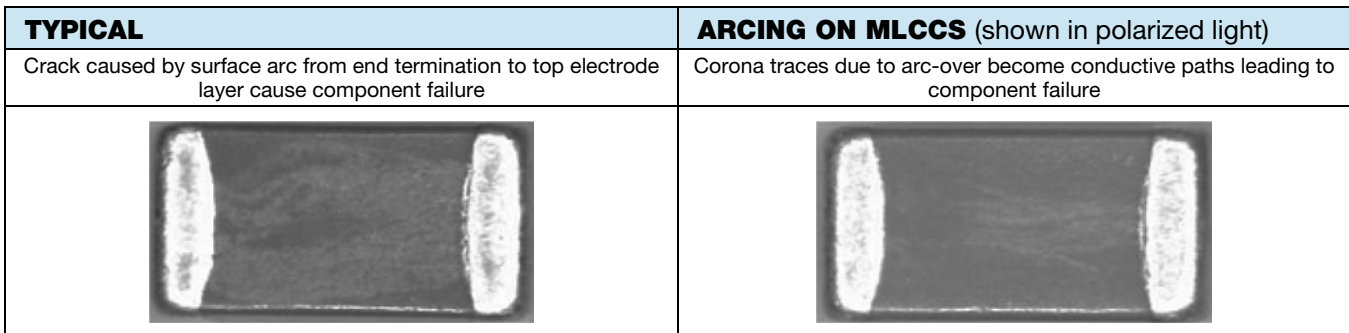
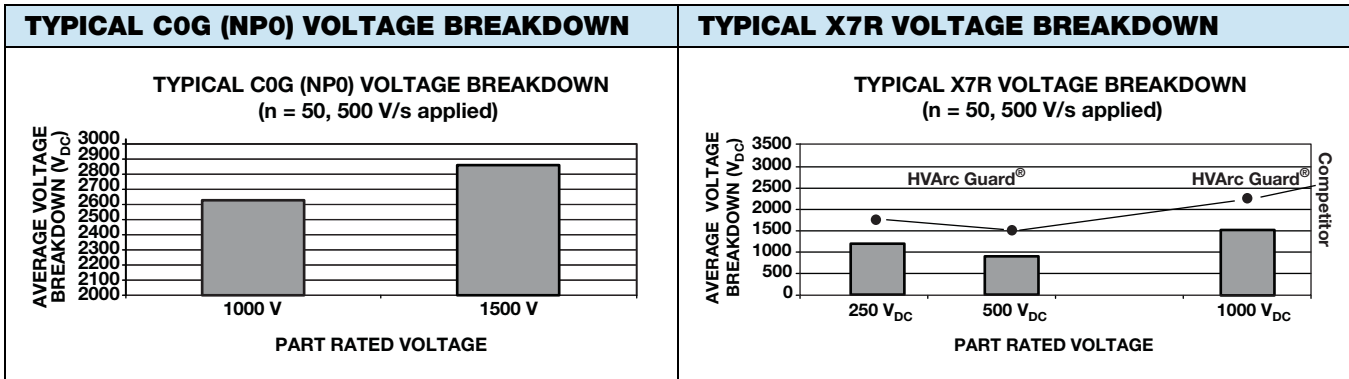


**HVArc Guard® C0G (NP0) DIELECTRIC - TYPICAL PARAMETERS**



**HVArc Guard® X7R DIELECTRIC - TYPICAL PARAMETERS**





| STANDARD PACKAGING QUANTITIES (1)(2)(3)(4)(5) |           |                                   |                                 |                                   |                                 |
|---|-----------|-----------------------------------|---------------------------------|-----------------------------------|---------------------------------|
| CASE CODE                                     | TAPE SIZE | 7" REEL QUANTITIES                |                                 | 11 1/4" AND 13" REEL QUANTITIES   |                                 |
|   |           | PAPER TAPE PACKAGING CODE "C"/"O" | PLASTIC TAPE PACKAGING CODE "T" | PAPER TAPE PACKAGING CODE "P"/"I" | PLASTIC TAPE PACKAGING CODE "R" |
| 0805  | 8 mm      | 3000                              | 3000                            | 10 000                            | 10 000                          |
| 1206 (6)                                      | 8 mm      | n/a                               | 2500                            | n/a                               | 10 000                          |
| 1210 (6)                                      | 8 mm      | n/a                               | 2500                            | n/a                               | 10 000                          |
| 1808  | 12 mm     | n/a                               | 2000                            | n/a                               | 10 000                          |
| 1812  | 12 mm     | n/a                               | 1000                            | n/a                               | 4000                            |
| 2220  | 12 mm     | n/a                               | 1000                            | n/a                               | 4000                            |
| 2225  | 12 mm     | n/a                               | 1000                            | n/a                               | 4000                            |

**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
- (6) Packaging quantity can vary with product thickness  
Contact [mlcc@vishay.com](mailto:mlcc@vishay.com) with respect to specific part number requirements

| STORAGE AND HANDLING CONDITIONS   |
|---|
| (1) Store the components at 5 °C to + 40 °C ambient temperature and ≤ 70 % related humidity conditions.<br>(2) The product is recommended to be used within a time-frame of 2 years after shipment.<br>Check solderability in case extended shelf life beyond the expiry date is needed.  |
| Precautions: <ol style="list-style-type: none"> <li>a. Do not store products in an environment containing corrosive elements, especially where chloride gas, sulfide gas, acid, alkali, salt or the like are present. This may cause corrosion or oxidization of the terminations, which can easily lead to poor soldering.</li> <li>b. Store products on the shelf and avoid exposure to moisture or dust.</li> <li>c. Do not expose products to excessive shock, vibration, direct sunlight and so on.</li> </ol> |





## Disclaimer

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## Material Category Policy

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.**

**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.**



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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