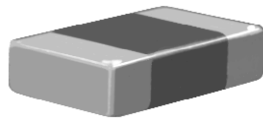


Surface Mount Multilayer Ceramic Chip Capacitor Solutions for Boardflex Sensitive Applications



FEATURES

- Surface mountable, precious metal technology, wet build process
- OMD-Cap (Open Mode Design) reduce the risk of short or low IR because of board flex cracks
- Efficient low-power consumption, ripple current capable to 1.2 A_{rms} at 100 kHz
- High Voltage breakdown compared to standard design
- Available with 100 % voltage condition, process code "5H" (Is available for 630 V and lower. Contact mlcc.specials@vishay.com for higher voltages.)
- Excellent reliability and thermal shock performance
- Available with polymer termination for increase resistance to board flex cracking
- Protective surface coating of high voltage capacitors maybe required to prevent surface arcing


**RoHS
COMPLIANT**

APPLICATIONS

- Ideal for Power Supplies
- Input filter capacitor

ELECTRICAL SPECIFICATIONS

Note: Electrical characteristics at + 25 °C unless otherwise stated
Protective surface coating of high voltage capacitors maybe required to prevent surface arcing. Input side filter.

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

Capacitance Range: 100 pF to 1.8 μF

Voltage Rating: 16 Vdc to 3000 Vdc

Temperature Coefficient of Capacitance (TCC):

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

Dissipation Factor:

6.3 V, 10 V ratings: 5 % max. at 1.0 V_{rms} and 1 kHz

16 V, 25 V ratings: 3.5 % max. at 1.0 V_{rms} and 1 kHz

50 V ratings: 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 MW minimum or 1000 WF, whichever is less

At + 125 °C and rated voltage 10 000 MW minimum or 100 WF, 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

≤ 250 Vdc: DWV at 250 % of rated voltage

500 Vdc: DWV at 200 % of rated voltage

630 Vdc: DWV at 150 % of rated voltage

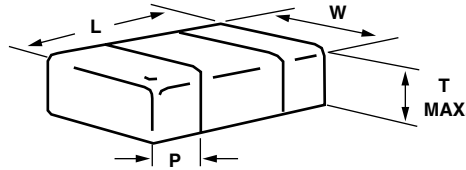
1000 Vdc: DWV at 150 % of rated voltage

1500 Vdc: DWV at 120 % of rated voltage

2000 Vdc: DWV at 120 % of rated voltage

3000 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 | 0.126 ± 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] | 0.028 [0.71] |
| 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] |
| VJ1808 | 0.180 ± 0.010 [4.57 ± 0.25] | 0.080 ± 0.010 [2.03 ± 0.25] | 0.086 [2.18] | 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] |
| VJ1825 | 0.177 ± 0.010 [4.50 ± 0.25] | 0.252 ± 0.010 [6.40 ± 0.25] | 0.086 [2.18] | 0.010 [0.25] | 0.030 [0.76] |
| VJ2220 | 0.220 ± 0.008 [5.59 ± 0.20] | 0.200 ± 0.008 [5.08 ± 0.20] | 0.086 [2.18] | 0.010 [0.25] | 0.030 [0.76] |
| VJ2225 | 0.220 ± 0.010 [5.59 ± 0.25] | 0.250 ± 0.010 [6.35 ± 0.25] | 0.086 [2.18] | 0.010 [0.25] | 0.030 [0.76] |

ORDERING INFORMATION

| VJ1210 | Y | 474 | K | X | A | A | T | ## (2) |
|--|------------|--|---------------------------------------|---|---|--------------|--|--|
| CASE SIZE | DIELECTRIC | CAPACITANCE CODE | CAPACITANCE TOLERANCE | TERMINATION | DC VOLTAGE RATING (1) | MARKING | PACKAGING | PROCESS CODE |
| 0805 1206 1210 1808 1812 1825 2220 2225 | Y = X7R | Expressed in picofarads (pF). The first two digits are significant, the third is a multiplier. Example: 474 = 470 000 pF | J = ± 5 % K = ± 10 % M = ± 20 % | X = Ni barrier 100 % tin plate matte finish F = AgPd B = Polymer 100 % tin plate matte finish | J = 16 X = 25 A = 50 V B = 100 V C = 200 V P = 250 V E = 500 V L = 630 V G = 1000 V R = 1500 V F = 2000 V H = 3000 V | A = Unmarked | T = 7" Reels R = 11 1/4" Reels B = Bulk W = Waffle tray | 4X = OMD Cap 5H = OMD Cap 100 % voltage conditioning |

Notes:

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

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

Polymer plus termination "B" termination part number code length dimensions positive tolerances (including bandwidth) 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)



| OMD - X7R CAPACITANCE RANGE | | | | | | | | | | | | | | | | | | |
|-----------------------------|----------|------|----|----|-----|-----|-----|-----|------|----|----|-----|-----|-----|-----|------|------|------|
| EIA CODE | | 0805 | | | | | | | 1206 | | | | | | | | | |
| VOLTAGE (Vdc) | | 16 | 25 | 50 | 100 | 200 | 500 | 630 | 16 | 25 | 50 | 100 | 200 | 500 | 630 | 1000 | 1500 | 2000 |
| 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 | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |

Note:

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

| OMD - X7R CAPACITANCE RANGE | | | | | | | | | | | | | | | | |
|-----------------------------|----------|---------------------|----|----|-----|-----|-----|-----|------|------|---------------------|-----|------|------|------|------|
| EIA CODE | | 1210 ⁽¹⁾ | | | | | | | | | 1808 ⁽¹⁾ | | | | | |
| VOLTAGE (Vdc) | | 16 | 25 | 50 | 100 | 200 | 500 | 630 | 1000 | 1500 | 2000 | 630 | 1000 | 1500 | 2000 | 3000 |
| 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 | | | | | | | | | | | | | | | |

Note:

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



| OMD - X7R CAPACITANCE RANGE | | | | | | | | | | | | | | | | | | |
|-----------------------------|----------|---------------------|-----|-----|-----|-----|-----|------|------|------|---------------------|-----|-----|-----|-----|------|------|------|
| EIA CODE | | 1812 ⁽¹⁾ | | | | | | | | | 1825 ⁽¹⁾ | | | | | | | |
| VOLTAGE (Vdc) | | 50 | 100 | 200 | 250 | 500 | 630 | 1000 | 1500 | 2000 | 3000 | 100 | 200 | 500 | 630 | 1000 | 1500 | 2000 |
| 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 | • | • | • | • | • | • | • | • | | | • | • | • | • | • | • | • |
| 203 | 0.020 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 | • | • | • | • | • | • | • | • | | | • | • | • | • | • | • | • |

Note:

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

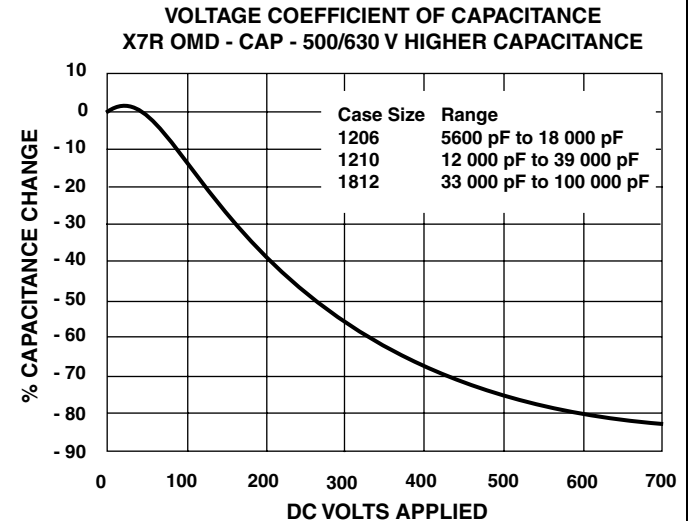
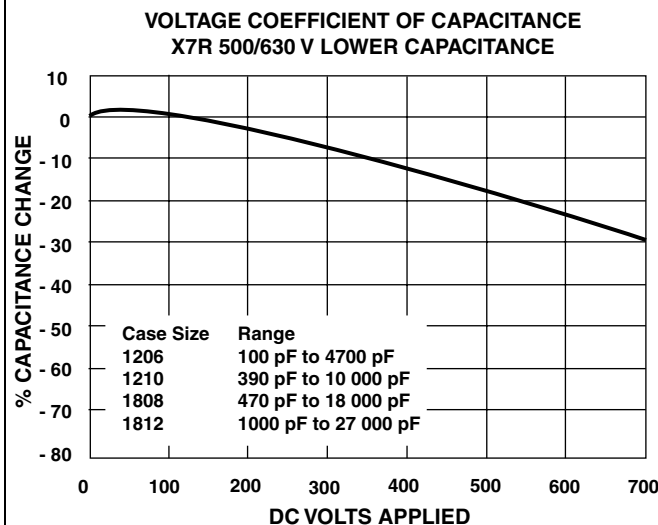
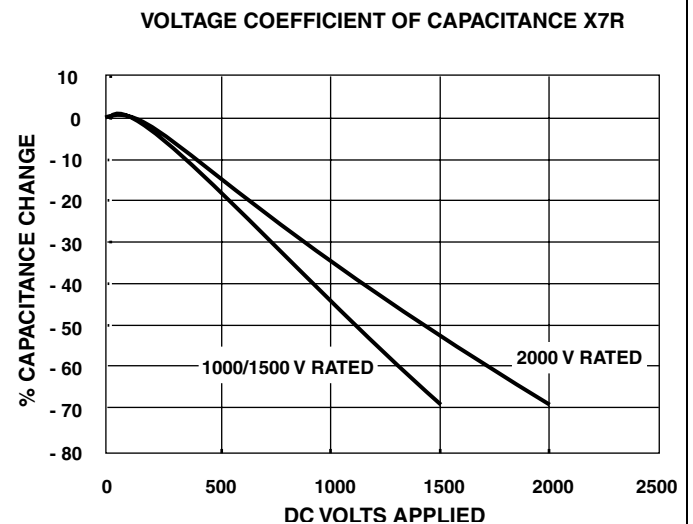
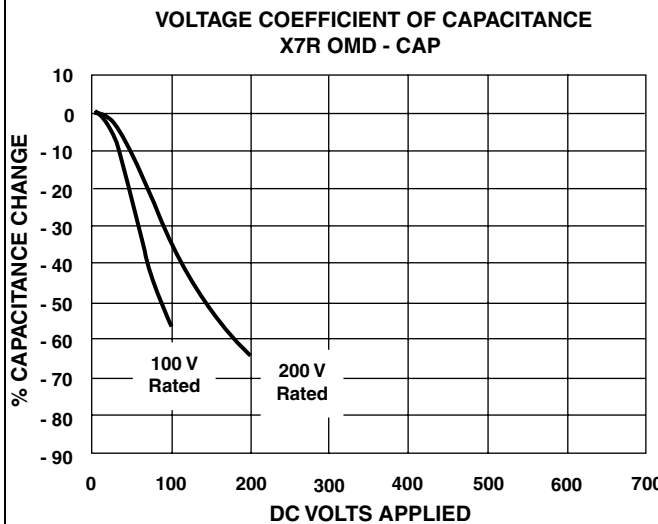
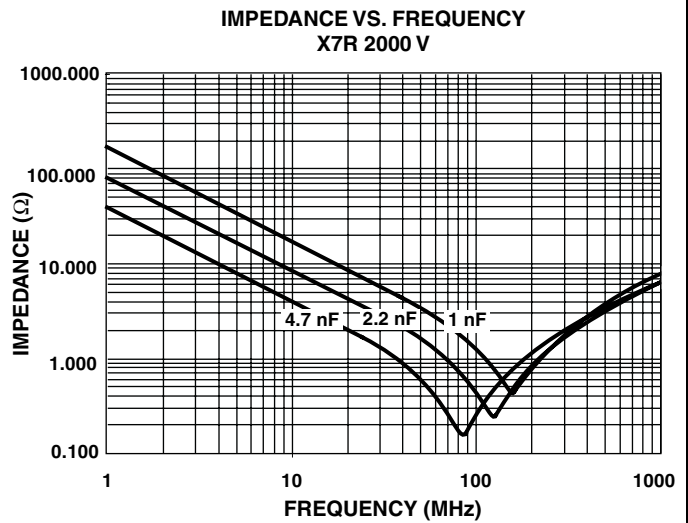
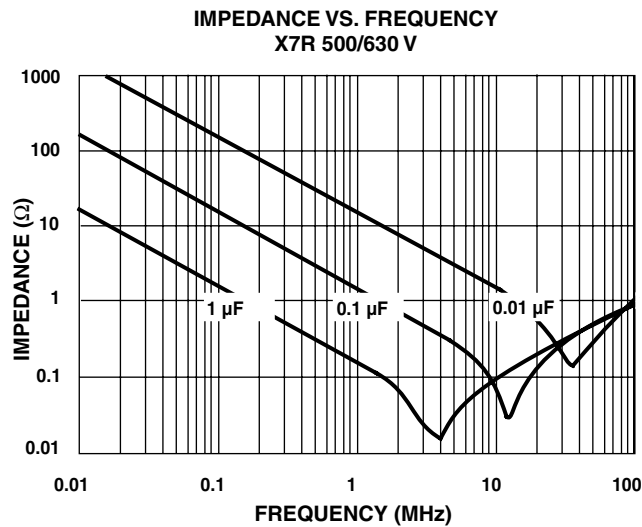
| OMD - X7R CAPACITANCE RANGE | | | | | | | | | | | | | | | | | |
|-----------------------------|----------|---------------------|-----|-----|-----|-----|-----|------|------|-------|---------------------|-----|-----|-----|------|------|------|
| EIA CODE | | 2220 ⁽¹⁾ | | | | | | | | | 2225 ⁽¹⁾ | | | | | | |
| VOLTAGE (Vdc) | | 50 | 100 | 200 | 250 | 500 | 630 | 1000 | 2000 | 30000 | 100 | 200 | 500 | 630 | 1000 | 1500 | 2000 |
| 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 | • | • | • | • | • | • | • | • | | • | • | • | • | • | • | • |
| 203 | 0.020 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 | • | • | • | • | • | • | • | • | | • | • | • | • | • | • | • |

Note:

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



OMD - CAPACITORS - TYPICAL PARAMETERS



BOARDFLEX SENSITIVE APPLICATIONS - SOLUTION:

A predominant failure mode in multilayer ceramic chip capacitors is cracking caused by board flexure. Cracks can then create a path for current to pass from one electrode through the dielectric to an opposing electrode or from the terminations at one end of the MLCC through the dielectric to an opposing electrode. This may subsequently result in capacitance loss, leakage - low Insulation Resistance (IR) - and/or more seriously, high current shorts. A short circuit condition in the surface mounted capacitors can cause further failures of downstream components. Vishay's Open Mode Design Capacitors (VJ OMD - Cap series) reduce the risk of these destructive conditions through MLCC designs that prevent board flexure cracks reaching the opposing electrode.

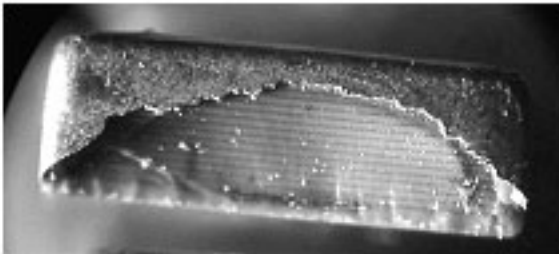
VJ OMD - Cap MLCCs reduce the risk of early field failures associated with board flex cracks. However, it is important to note that even in the open mode designs the presence of flexure related cracks can cause capacitance loss leading to localized stresses on the parts. eventually, depending on the application environment, including such factors and high voltage pulse frequency and thermal cycling this may lead to internal breakdown of the component.

POLYMER TERMINATION

Polymer termination provides additional protection against board flexure damage by absorbing greater mechanical and thermal stresses. Components can be packaged, transported, stored and handled the same standard terminated product. Wave and reflow soldering of MLCC does not require modification to equipment and/or process. Polymer termination greatly reduces the risk of mechanical cracking however it does not completely eliminate.

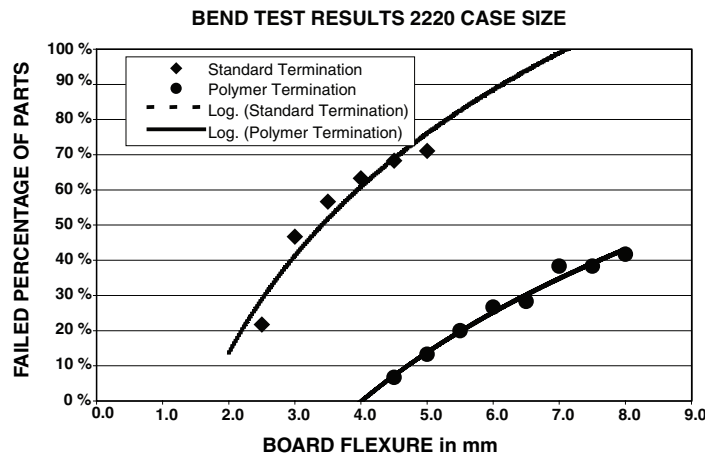
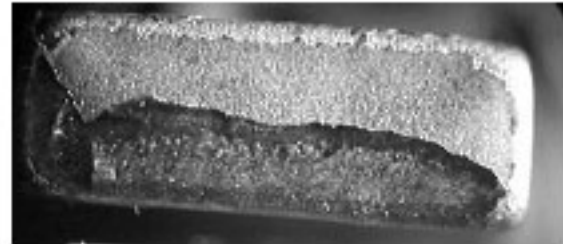
STANDARD TERMINATION

Exposed Electrodes = Electrical Short



OMD CAP PLUS POLYMER TERMINATION

No Exposed Electrodes = No Electrical Short



| STANDARD PACKAGING QUANTITIES (1) (2) (3) | | | | | | | |
|---|-----------|-------------------------------|---------------------------------|---------------------------------|---------------------------------|-------------------------|---------------------------|
| | | 7" REEL QUANTITIES | | 11 1/4" AND 13" REEL QUANTITIES | | BULK QUANTITIES | |
| BODY SIZE | TAPE SIZE | PAPER TAPE PACKAGING CODE "C" | PLASTIC TAPE PACKAGING CODE "T" | PAPER TAPE PACKAGING CODE "P" | PLASTIC TAPE PACKAGING CODE "R" | VIAL PACKAGING CODE "B" | WAFFLE PACKAGING CODE "W" |
| 0805 | 8 mm | 3000 | 3000 | 10 000 | 10 000 | 5000 | N/a |
| 1206 | 8 mm | N/a | 2500 | N/a | 10 000 | 5000 | 5000 |
| 1210 | 8 mm | N/a | 3000 | N/a | 10 000 | 5000 | N/a |
| 1808 | 12 mm | N/a | 3000 | N/a | 10 000 | 1000 | N/a |
| 1812 | 12 mm | N/a | 1000 | N/a | 5000 | 1000 | N/a |
| 1825 | 12 mm | N/a | 1000 | N/a | 5000 | 1000 | 1000 |
| 2220 | 12 mm | N/a | 1000 | N/a | 5000 | N/a | 1000 |
| 2225 | 12 mm | N/a | 1000 | N/a | 5000 | N/a | 1000 |

Notes:

(1) Vishay Vitramon uses embossed plastic and punch paper carrier tapes. Paper tape is not available for case sizes > 1206 or for component thickness > 0.035" [0.89 mm]

(2) REFERENCE: EIA Standard RS 481 - "Taping of Surface Mount Components for Automatic Placement"

(3) N/a = Not available



Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.