

Surface Mount Multilayer Ceramic Chip Capacitors for High Reliability Applications



FEATURES

- Manufactured with a combination of design, materials and tight process control to achieve very high field reliability
- C0G (NP0) and X7R / X5R dielectrics offered
- MIL-PRF-55681 qualified production line ⁽¹⁾
- Reliability maintenance testing to verify consistent quality (X5R max. test temperature: +85 °C)
- Available with group A and C screening
- Group C data can be reported
- Available with only group A screening
- Available with only voltage conditioning
- Customized certification available on request to meet your quality requirements
- Available with tin-lead barrier terminations order code "L"
- Wet build process
- Reliable Noble Metal Electrode (NME) system
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



Available

RoHS*
Available

HALOGEN FREE

Notes

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non-RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

⁽¹⁾ External visual inspection per EIA-595 standard

APPLICATIONS

- System critical medical applications
- Mission critical military and aerospace applications

ELECTRICAL SPECIFICATIONS

| C0G (NP0) | |
|---|------------------------|
| GENERAL SPECIFICATION | |
| Note Electrical characteristics at +25 °C unless otherwise specified | |
| Operating Temperature: -55 °C to +125 °C | |
| Capacitance Range: 1.0 pF to 39 nF | |
| Voltage Range: 10 V _{DC} to 600 V _{DC} | |
| Temperature Coefficient of Capacitance (TCC): 0 ppm/°C ± 30 ppm/°C from -55 °C to +125 °C | |
| Dissipation Factor (DF): 0.1 % maximum at 1.0 V _{RMS} and 1 MHz for values ≤ 1000 pF 0.1 % maximum at 1.0 V _{RMS} 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 | |
| Aging Rate: 0 % maximum per decade | |
| Dielectric Strength Test: performed per method 103 of EIA 198-2-E. Applied test voltages | |
| ≤ 200 V _{DC} -rated: | 250 % of rated voltage |
| 500 V _{DC} -rated: | 200 % of rated voltage |
| 630 V _{DC} -rated: | 150 % of rated voltage |

| X7R / X5R | |
|---|-----------------------------|
| GENERAL SPECIFICATION | |
| Note Electrical characteristics at +25 °C unless otherwise specified | |
| Operating Temperature: -55 °C to +125 °C | |
| Capacitance Range: 100 pF to 6.8 μF | |
| Voltage Range: 6.3 V _{DC} to 500 V _{DC} | |
| Temperature Coefficient of Capacitance (TCC): X5R: ± 15 % from -55 °C to +85 °C, with 0 V _{DC} applied X7R: ± 15 % from -55 °C to +125 °C, with 0 V _{DC} applied | |
| Dissipation Factor (DF): ≤ 6.3 V, 10 V ratings: 5 % maximum at 1.0 V _{RMS} and 1 kHz 16 V, 25 V ratings: 3.5 % maximum at 1.0 V _{RMS} and 1 kHz ≥ 50 V ratings: 2.5 % maximum at 1.0 V _{RMS} 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 | |
| Aging Rate: 1 % maximum per decade | |
| Dielectric Strength Test: performed per method 103 of EIA 198-2-E. Applied test voltages | |
| ≤ 250 V _{DC} -rated: | 250 % of rated voltage |
| 500 V _{DC} -rated: | min. 150 % of rated voltage |
| 630 V _{DC} , 1000 V _{DC} -rated: | 150 % of rated voltage |
| 1500 V _{DC} , 3000 V _{DC} -rated: | 120 % of rated voltage |

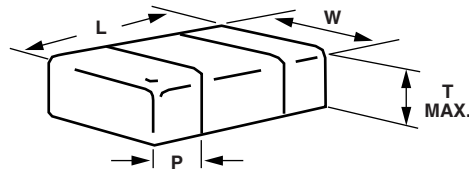


| QUICK REFERENCE DATA | | | | |
|----------------------|------|---------------------|-------------|---------|
| DIELECTRIC | CASE | MAXIMUM VOLTAGE (V) | CAPACITANCE | |
| | | | MINIMUM | MAXIMUM |
| C0G (NP0) | 0402 | 100 | 1.0 pF | 180 pF |
| | 0603 | 200 | 1.0 pF | 1.5 nF |
| | 0805 | 500 | 1.0 pF | 3.3 nF |
| | 1206 | 600 | 1.0 pF | 10 nF |
| | 1210 | 500 | 100 pF | 10 nF |
| | 1808 | 500 | 100 pF | 10 nF |
| | 1812 | 500 | 39 pF | 22 nF |
| | 1825 | 500 | 100 pF | 33 nF |
| | 2220 | 500 | 100 pF | 33 nF |
| X5R | 0402 | 16 | 27 nF | 47 nF |
| | 0603 | 6.3 | 120 nF | 150 nF |
| X7R | 0402 | 100 | 100 pF | 22 nF |
| | 0603 | 100 | 270 pF | 100 nF |
| | 0805 | 200 | 150 pF | 390 nF |
| | 1206 | 500 | 680 pF | 1.0 μF |
| | 1210 | 500 | 1.0 nF | 1.0 μF |
| | 1808 | 500 | 1.0 nF | 270 nF |
| | 1812 | 500 | 3.3 nF | 1.0 μF |
| | 1825 | 500 | 10 nF | 2.7 μF |
| | 2220 | 500 | 10 nF | 2.2 μF |
| | 2225 | 500 | 10 nF | 4.7 μF |
| | 3640 | 500 | 15 nF | 6.8 μF |

| ORDERING INFORMATION | | | | | | | | |
|--|-------------------------------------|--|---|--|--|--------------|--|---------------------|
| VJ1206 | Y | 104 | J | L | A | A | T | ### (2) |
| CASE CODE | DIELECTRIC | CAPACITANCE NOMINAL | CAPACITANCE TOLERANCE | TERMINATION | DC VOLTAGE RATING (1) | MARKING | PACKAGING | PROCESS CODE |
| 0402 0603 0805 1206 1210 1808 1812 1825 2220 2225 3640 | A = C0G (NP0) G = X5R Y = X7R | Expressed in picofarads (pF). The first two digits are significant, the third is a multiplier. Examples: 1R0 = 1.0 pF 103 = 10 000 pF 104 = 100 000 pF | C = ± 0.25 pF D = ± 0.50 pF F = ± 1 % G = ± 2 % H = ± 3 % J = ± 5 % K = ± 10 % M = ± 20 % Note: C0G (NP0): C, D < 10 pF F, G, H, J, K ≥ 10 pF X7R, X5R: J, K, M | X = Ni barrier 100 % tin plated L = Ni barrier with tin lead plated finish min. 4 % lead F, E = AgPd (3) | Y = 6.3 V Q = 10 V J = 16 V X = 25 V A = 50 V B = 100 V C = 200 V P = 250 V E = 500 V N = 600 V | A = unmarked | C = 7" reel / paper tape T = 7" reel / plastic tape J = 7" reel (low quantity) P = 11 1/4" / 13" reel / paper tape R = 11 1/4" / 13" reel / plastic tape O = 7" reel / flamed paper tape I = 11 1/4" / 13" reel / flamed paper tape Note: "I" and "O" are used for "E" and "F" terminations, sizes 0402 / 0603 / 0805 | 68, 5G, 2L, 2M, 2MP |

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
- (2) **68:** MIL-PRF-55681 Group A C of I, subgroups 1, 2, 4 attribute data provided with shipment. **No Group C testing performed**
5G: Voltage conditioning only. Generic CoC (no data)
2L: MIL-PRF-55681 Group A C of I, provided with shipment.
 Group C testing is performed based on MIL-PRF-55681 periodic maintenance schedule. **No Group C data provided**
2M: MIL-PRF-55681 Group A, subgroups 1, 2, 4. Group A subgroups 1, 2, 4 attribute data provided with shipment.
 MIL-PRF-55681 Group C, testing subgroups 1, 2, 3, 5 is performed on each lot. Shipment held until tests are complete.
No Group C data provided
2MP: MIL-PRF-55681 Group A, subgroups 1, 2, 4. Group A subgroups 1, 2, 4 attribute data provided with shipment.
 MIL-PRF-55681 Group C, testing subgroups 1, 2, 3, 5 performed on each lot. Shipment held until tests are complete.
Group C test summary data is included with shipment (fee applies)
- (3) Termination code "F" is for conductive epoxy / reflow assembly.
 Termination code "E" is for conductive epoxy assembly only

DIMENSIONS in inches (millimeters)


| CASE CODE | STYLE | LENGTH (L) | WIDTH (W) | MAXIMUM THICKNESS (T) | TERMINATION PAD (P) | |
|-----------|--------|--------------------------------|--------------------------------|-----------------------------|------------------------|--------------|
| | | | | | MINIMUM | MAXIMUM |
| 0402 | VJ0402 | 0.040 ± 0.004 (1.00 ± 0.10) | 0.020 ± 0.004 (0.50 ± 0.10) | 0.024 (0.61) | 0.004 (0.10) | 0.016 (0.41) |
| 0603 | VJ0603 | 0.063 ± 0.006 (1.60 ± 0.15) | 0.031 ± 0.006 (0.80 ± 0.15) | 0.036 (0.92) | 0.012 (0.30) | 0.018 (0.46) |
| 0805 | 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) |
| 1206 | VJ1206 | 0.126 ± 0.010 (3.20 ± 0.25) | 0.063 ± 0.010 (1.60 ± 0.25) | 0.067 (1.70) | 0.010 (0.25) | 0.028 (0.71) |
| 1210 | VJ1210 | 0.126 ± 0.010 (3.20 ± 0.25) | 0.098 ± 0.010 (2.50 ± 0.25) | 0.067 (1.70) | 0.010 (0.25) | 0.028 (0.71) |
| 1808 | VJ1808 | 0.180 ± 0.012 (4.57 ± 0.30) | 0.080 ± 0.010 (2.03 ± 0.25) | 0.086 (2.18) | 0.010 (0.25) | 0.030 (0.76) |
| 1812 | VJ1812 | 0.177 ± 0.012 (4.50 ± 0.30) | 0.126 ± 0.008 (3.20 ± 0.20) | 0.086 (2.18) | 0.010 (0.25) | 0.030 (0.76) |
| 1825 | VJ1825 | 0.177 ± 0.012 (4.50 ± 0.30) | 0.252 ± 0.010 (6.40 ± 0.25) | 0.086 (2.18) | 0.010 (0.25) | 0.030 (0.76) |
| 2220 | VJ2220 | 0.220 ± 0.010 (5.59 ± 0.25) | 0.200 ± 0.010 (5.08 ± 0.25) | 0.086 (2.18) | 0.010 (0.25) | 0.030 (0.76) |
| 2225 | 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) |
| 3640 | VJ3640 | 0.360 ± 0.015 (9.14 ± 0.38) | 0.400 ± 0.015 (10.2 ± 0.38) | 0.086 (2.18) | 0.010 (0.25) | 0.030 (0.76) |

Note

- Termination code "F" has increased dimension tolerance:
 0402: length + 0.006" (+ 0.15 mm)
 0603: length + 0.008" (+ 0.20 mm)
 0805 / 1206 / 1210: length + 0.011" (+ 0.28 mm)



| SELECTION CHART | | | | | | | | | | | | | | | | | | | |
|----------------------------|--------|-----------|----|----|----|-----|--------|----|----|----|-----|-----|--------|----|----|----|-----|-----|-----|
| DIELECTRIC | | COG (NPO) | | | | | | | | | | | | | | | | | |
| STYLE | | VJ0402 | | | | | VJ0603 | | | | | | VJ0805 | | | | | | |
| CASE CODE | | 0402 | | | | | 0603 | | | | | | 0805 | | | | | | |
| VOLTAGE (V _{DC}) | | 10 | 16 | 25 | 50 | 100 | 10 | 16 | 25 | 50 | 100 | 200 | 10 | 16 | 25 | 50 | 100 | 200 | 500 |
| VOLTAGE CODE | | Q | J | X | A | B | Q | J | X | A | B | C | Q | J | X | A | B | C | E |
| CAP. CODE | CAP. | | | | | | | | | | | | | | | | | | |
| 1R0 | 1.0 pF | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 1R2 | 1.2 pF | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 1R5 | 1.5 pF | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 1R8 | 1.8 pF | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 2R2 | 2.2 pF | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 2R7 | 2.7 pF | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 3R3 | 3.3 pF | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 3R9 | 3.9 pF | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 4R7 | 4.7 pF | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 5R6 | 5.6 pF | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 6R8 | 6.8 pF | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 8R2 | 8.2 pF | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 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 | | | | | | | | | | | | • | • | • | • | • | • | • |
| 282 | 2.8 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 | | | | | | | | | | | | | | | | | | |

Notes

- RoHS-compliant except when supplied with lead (Pb)-containing termination, code "L"
- Not RoHS-compliant



| SELECTION CHART | | | | | | | | | | | | | |
|----------------------------|--------|-----------|----|----|-----|-----|-----|-----------------------|----|----|-----|-----|-----|
| DIELECTRIC | | COG (NP0) | | | | | | | | | | | |
| STYLE | | VJ1206 | | | | | | VJ1210 ⁽¹⁾ | | | | | |
| CASE CODE | | 1206 | | | | | | 1210 ⁽¹⁾ | | | | | |
| VOLTAGE (V _{DC}) | | 16 | 25 | 50 | 100 | 200 | 500 | 600 | 25 | 50 | 100 | 200 | 500 |
| VOLTAGE CODE | | J | X | A | B | C | E | N | X | A | B | C | E |
| CAP. CODE | CAP. | | | | | | | | | | | | |
| 1R0 | 1.0 pF | • | • | • | • | • | • | • | | | | | |
| 1R2 | 1.2 pF | • | • | • | • | • | • | • | | | | | |
| 1R5 | 1.5 pF | • | • | • | • | • | • | • | | | | | |
| 1R8 | 1.8 pF | • | • | • | • | • | • | • | | | | | |
| 2R2 | 2.2 pF | • | • | • | • | • | • | • | | | | | |
| 2R7 | 2.7 pF | • | • | • | • | • | • | • | | | | | |
| 3R3 | 3.3 pF | • | • | • | • | • | • | • | | | | | |
| 3R9 | 3.9 pF | • | • | • | • | • | • | • | | | | | |
| 4R7 | 4.7 pF | • | • | • | • | • | • | • | | | | | |
| 5R6 | 5.6 pF | • | • | • | • | • | • | • | | | | | |
| 6R8 | 6.8 pF | • | • | • | • | • | • | • | | | | | |
| 8R2 | 8.2 pF | • | • | • | • | • | • | • | | | | | |
| 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 | • | • | • | • | • | | | • | • | • | • | |
| 282 | 2.8 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 | | | | | | | | | | | | |

Notes

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

• RoHS-compliant except when supplied with lead (Pb)-containing termination, code "L"

• Not RoHS-compliant



| SELECTION CHART | | | | | | | | | | | | | | | | |
|----------------------------|--------|-----------------------|----|-----|-----|-----|-----------------------|----|-----|-----|-----|-----------------------|----|-----|-----|-----|
| DIELECTRIC | | C0G (NP0) | | | | | | | | | | | | | | |
| STYLE | | VJ1808 ⁽¹⁾ | | | | | VJ1812 ⁽¹⁾ | | | | | VJ1825 ⁽¹⁾ | | | | |
| CASE CODE | | 1808 ⁽¹⁾ | | | | | 1812 ⁽¹⁾ | | | | | 1825 ⁽¹⁾ | | | | |
| VOLTAGE (V _{DC}) | | 25 | 50 | 100 | 200 | 500 | 25 | 50 | 100 | 200 | 500 | 25 | 50 | 100 | 200 | 500 |
| VOLTAGE CODE | | X | A | B | C | E | X | A | B | C | E | X | A | B | C | E |
| 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 | • | • | • | | | • | • | • | • | • | • | • | • | • | |
| 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 | | | | | | | | | | | | | | | |

Notes

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

Light Green: RoHS-compliant except when supplied with lead (Pb)-containing termination, code "L"

Light Orange: Not RoHS-compliant



| SELECTION CHART | | | | | | | | | | | |
|----------------------------|--------|-----------------------|----|-----|-----|-----|-----------------------|----|-----|-----|-----|
| DIELECTRIC | | COG (NP0) | | | | | | | | | |
| STYLE | | VJ2220 ⁽¹⁾ | | | | | VJ2225 ⁽¹⁾ | | | | |
| CASE CODE | | 2220 ⁽¹⁾ | | | | | 2225 ⁽¹⁾ | | | | |
| VOLTAGE (V _{DC}) | | 25 | 50 | 100 | 200 | 500 | 25 | 50 | 100 | 200 | 500 |
| VOLTAGE CODE | | X | A | B | C | E | X | A | B | C | E |
| 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 | • | • | • | • | | • | • | • | • | • |
| 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 | | | | | | | | | | |

Notes

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

Light Green: RoHS-compliant except when supplied with lead (Pb)-containing termination, code "L"

Light Orange: Not RoHS-compliant



| SELECTION CHART | | | | | | | | | | | | | | | | | | | |
|----------------------------|--------|--------------------------|-----|-----|----|----|-----|--------|----|----|----|----|-----|--------|----|----|----|-----|-----|
| DIELECTRIC | | X7R / X5R ⁽¹⁾ | | | | | | | | | | | | | | | | | |
| STYLE | | VJ0402 | | | | | | VJ0603 | | | | | | VJ0805 | | | | | |
| CASE CODE | | 0402 | | | | | | 0603 | | | | | | 0805 | | | | | |
| VOLTAGE (V _{DC}) | | 6.3 | 10 | 16 | 25 | 50 | 100 | 6.3 | 10 | 16 | 25 | 50 | 100 | 10 | 16 | 25 | 50 | 100 | 200 |
| VOLTAGE CODE | | Y | Q | J | X | A | B | Y | Q | J | X | A | B | Q | J | X | A | B | C |
| 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 | X5R | X5R | X5R | | | | • | • | • | • | • | • | • | • | • | • | • | |
| 333 | 33 nF | X5R | X5R | X5R | | | | • | • | • | • | • | • | • | • | • | • | • | |
| 393 | 39 nF | X5R | | | | | | • | • | • | • | • | • | • | • | • | • | • | |
| 473 | 47 nF | X5R | | | | | | • | • | • | • | • | • | • | • | • | • | • | |
| 563 | 56 nF | | | | | | | • | • | • | • | • | • | • | • | • | • | • | |
| 683 | 68 nF | | | | | | | • | • | • | • | • | • | • | • | • | • | • | |
| 823 | 82 nF | | | | | | | • | • | • | • | • | • | • | • | • | • | • | |
| 104 | 100 nF | | | | | | | • | • | • | • | • | • | • | • | • | • | • | |
| 124 | 120 nF | | | | | | | X5R | | | | | | • | • | • | • | • | |
| 154 | 150 nF | | | | | | | X5R | | | | | | • | • | • | • | • | |
| 184 | 180 nF | | | | | | | | | | | | | • | • | • | • | • | |
| 224 | 220 nF | | | | | | | | | | | | | • | • | • | • | • | |
| 274 | 270 nF | | | | | | | | | | | | | • | • | • | • | • | |
| 334 | 330 nF | | | | | | | | | | | | | • | • | • | • | • | |
| 394 | 390 nF | | | | | | | | | | | | | • | | | | | |
| 474 | 470 nF | | | | | | | | | | | | | | | | | | |
| 564 | 560 nF | | | | | | | | | | | | | | | | | | |
| 684 | 680 nF | | | | | | | | | | | | | | | | | | |
| 824 | 820 nF | | | | | | | | | | | | | | | | | | |
| 105 | 1.0 μF | | | | | | | | | | | | | | | | | | |
| 125 | 1.2 μF | | | | | | | | | | | | | | | | | | |

Notes

- (1) See "Selection Chart" for values only available as X5R. All other values X7R.
- RoHS-compliant except when supplied with lead (Pb)-containing termination, code "L"
- Not RoHS-compliant



| SELECTION CHART | | | | | | | | | | | | | |
|----------------------------|--------|--------|----|----|-----|-----|-----|-----------------------|----|----|-----|-----|-----|
| DIELECTRIC | | X7R | | | | | | | | | | | |
| STYLE | | VJ1206 | | | | | | VJ1210 ⁽¹⁾ | | | | | |
| CASE CODE | | 1206 | | | | | | 1210 | | | | | |
| VOLTAGE (V _{DC}) | | 16 | 25 | 50 | 100 | 200 | 500 | 16 | 25 | 50 | 100 | 200 | 500 |
| VOLTAGE CODE | | J | X | A | B | C | E | J | X | A | B | C | E |
| 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 | • | • | • | | | | • | • | • | • | • | |
| 394 | 390 nF | • | • | | | | | • | • | • | • | • | |
| 474 | 470 nF | • | • | | | | | • | • | • | • | • | |
| 564 | 560 nF | • | • | | | | | • | • | • | • | • | |
| 684 | 680 nF | • | • | | | | | • | • | • | • | • | |
| 824 | 820 nF | • | • | | | | | • | • | • | • | • | |
| 105 | 1.0 μF | • | • | | | | | • | • | • | • | • | |
| 125 | 1.2 μF | | | | | | | | | | | | |

Notes

(1) See soldering recommendations within this data book, or visit: www.vishay.com/doc245034

• RoHS-compliant except when supplied with lead (Pb)-containing termination, code "L"

• Not RoHS-compliant



| SELECTION CHART | | | | | | | | | | | | | | | | | |
|----------------------------|--------|-----------------------|----|-----|-----|-----|-----------------------|----|-----|-----|-----|-----------------------|----|----|-----|-----|-----|
| DIELECTRIC | | X7R | | | | | | | | | | | | | | | |
| STYLE | | VJ1808 ⁽¹⁾ | | | | | VJ1812 ⁽¹⁾ | | | | | VJ1825 ⁽¹⁾ | | | | | |
| CASE CODE | | 1808 ⁽¹⁾ | | | | | 1812 ⁽¹⁾ | | | | | 1825 ⁽¹⁾ | | | | | |
| VOLTAGE (V _{DC}) | | 25 | 50 | 100 | 200 | 500 | 25 | 50 | 100 | 200 | 250 | 500 | 25 | 50 | 100 | 200 | 500 |
| VOLTAGE CODE | | X | A | B | C | E | X | A | B | C | P | E | X | A | B | C | E |
| CAP. CODE | CAP. | | | | | | | | | | | | | | | | |
| 102 | 1.0 nF | • | • | • | • | • | | | | | | | | | | | |
| 222 | 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 | | | | | | • | • | • | • | • | | • | • | • | • | |
| 394 | 390 nF | | | | | | • | • | • | • | • | | • | • | • | • | |
| 474 | 470 nF | | | | | | • | • | • | • | • | | • | • | • | • | |
| 564 | 560 nF | | | | | | • | • | • | | | | • | • | • | • | |
| 684 | 680 nF | | | | | | • | • | • | | | | • | • | • | • | |
| 824 | 820 nF | | | | | | • | • | • | | | | • | • | • | | |
| 105 | 1.0 μF | | | | | | • | • | | | | | • | • | • | | |
| 125 | 1.2 μF | | | | | | | | | | | | • | • | • | | |
| 155 | 1.5 μF | | | | | | | | | | | | • | • | • | | |
| 185 | 1.8 μF | | | | | | | | | | | | | | | | |
| 225 | 2.2 μF | | | | | | | | | | | | | | | | |
| 275 | 2.7 μF | | | | | | | | | | | | | | | | |
| 335 | 3.3 μF | | | | | | | | | | | | | | | | |
| 395 | 3.9 μF | | | | | | | | | | | | | | | | |
| 475 | 4.7 μF | | | | | | | | | | | | | | | | |
| 565 | 5.6 μF | | | | | | | | | | | | | | | | |
| 685 | 6.8 μF | | | | | | | | | | | | | | | | |
| 825 | 8.2 μF | | | | | | | | | | | | | | | | |

Notes

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

• RoHS-compliant except when supplied with lead (Pb)-containing termination, code "L"

• Not RoHS-compliant



| SELECTION CHART | | | | | | | | | | | | | | | | |
|----------------------------|--------|-----------------------|----|-----|-----|-----|-----------------------|----|-----|-----|-----|-----------------------|----|-----|-----|-----|
| DIELECTRIC | | X7R | | | | | | | | | | | | | | |
| STYLE | | VJ2220 ⁽¹⁾ | | | | | VJ2225 ⁽¹⁾ | | | | | VJ3640 ⁽¹⁾ | | | | |
| CASE CODE | | 2220 ⁽¹⁾ | | | | | 2225 ⁽¹⁾ | | | | | 3640 ⁽¹⁾ | | | | |
| VOLTAGE (V _{DC}) | | 25 | 50 | 100 | 200 | 500 | 25 | 50 | 100 | 200 | 500 | 25 | 50 | 100 | 200 | 500 |
| VOLTAGE CODE | | X | A | B | C | E | X | A | B | C | E | X | A | B | C | E |
| CAP. CODE | CAP. | | | | | | | | | | | | | | | |
| 102 | 1.0 nF | | | | | | | | | | | | | | | |
| 222 | 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 | • | • | • | • | | • | • | • | • | • | • | • | • | • | |
| 394 | 390 nF | • | • | • | • | | • | • | • | • | | • | • | • | • | |
| 474 | 470 nF | • | • | • | • | | • | • | • | • | | • | • | • | • | |
| 564 | 560 nF | • | • | • | • | | • | • | • | • | | • | • | • | • | |
| 684 | 680 nF | • | • | • | • | | • | • | • | • | | • | • | • | • | |
| 824 | 820 nF | • | • | • | • | | • | • | • | • | | • | • | • | • | |
| 105 | 1.0 μF | • | • | • | | | • | • | • | • | | • | • | • | | |
| 125 | 1.2 μF | • | • | • | | | • | • | • | • | | • | • | • | | |
| 155 | 1.5 μF | • | • | | | | • | • | | | | • | • | • | | |
| 185 | 1.8 μF | • | • | | | | • | • | • | | | • | • | • | | |
| 225 | 2.2 μF | • | • | | | | • | • | | | | • | • | • | | |
| 275 | 2.7 μF | | | | | | • | | | | | • | • | • | | |
| 335 | 3.3 μF | | | | | | • | | | | | • | • | • | | |
| 395 | 3.9 μF | | | | | | • | | | | | • | • | • | | |
| 475 | 4.7 μF | | | | | | • | | | | | • | • | | | |
| 565 | 5.6 μF | | | | | | | | | | | • | | | | |
| 685 | 6.8 μF | | | | | | | | | | | • | | | | |
| 825 | 8.2 μF | | | | | | | | | | | | | | | |

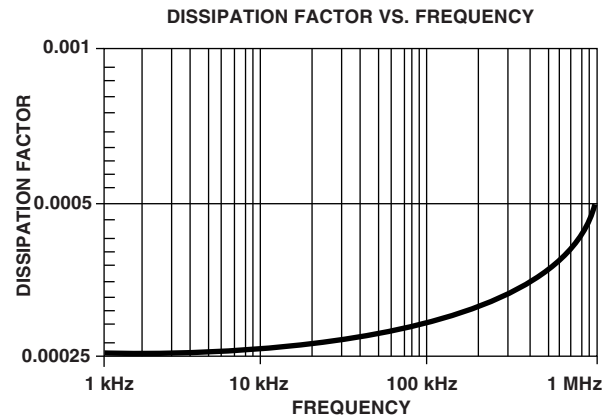
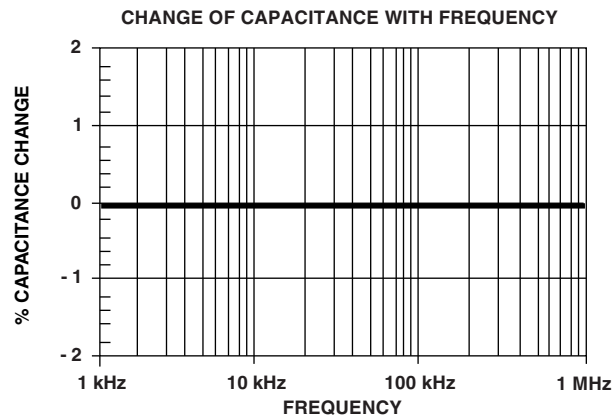
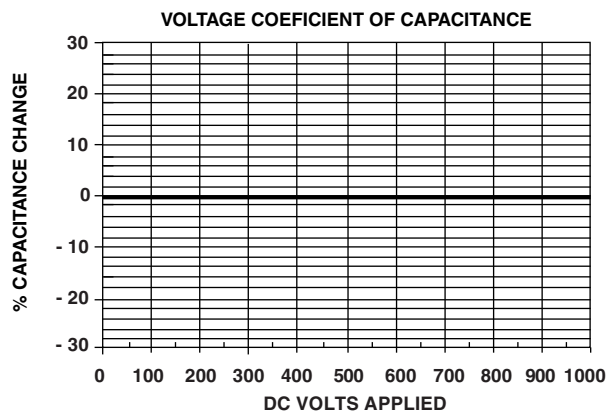
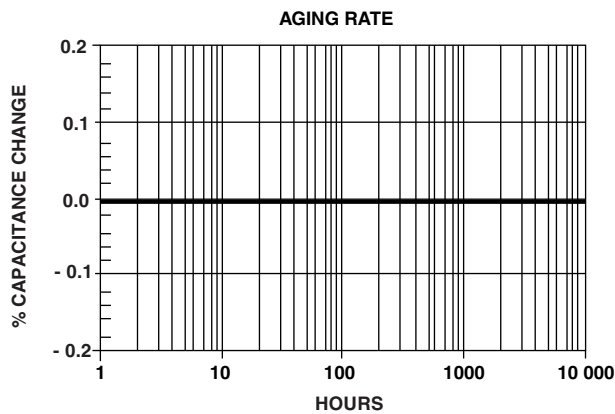
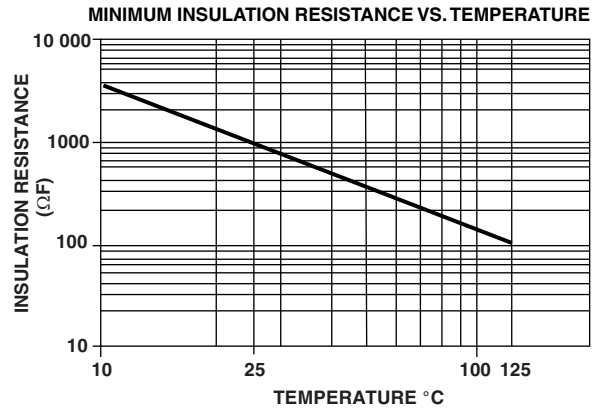
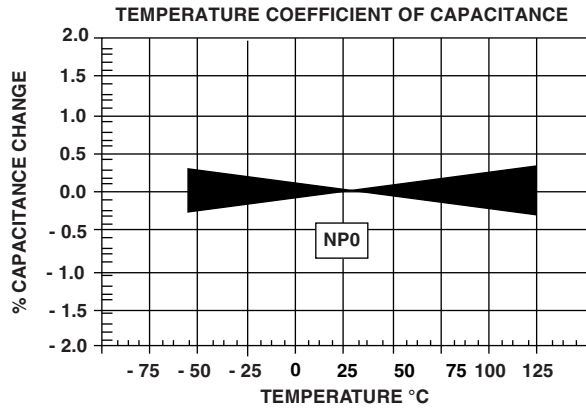
Notes

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

- RoHS-compliant except when supplied with lead (Pb)-containing termination, code "L"
- Not RoHS-compliant

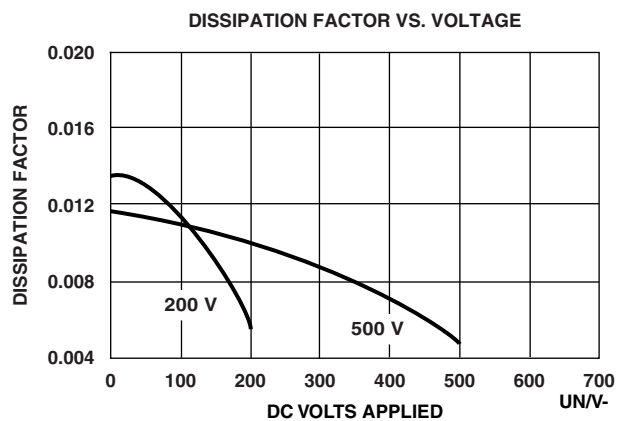
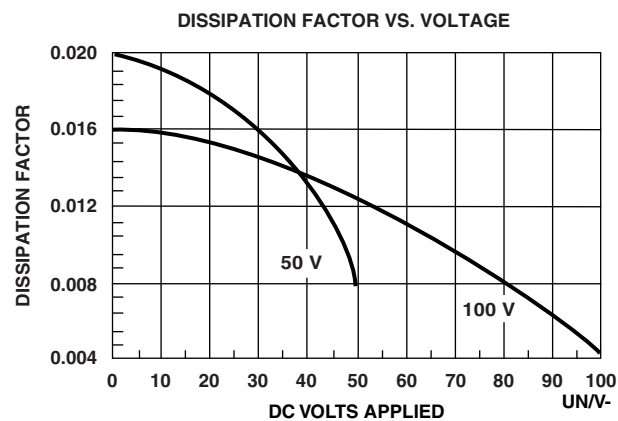
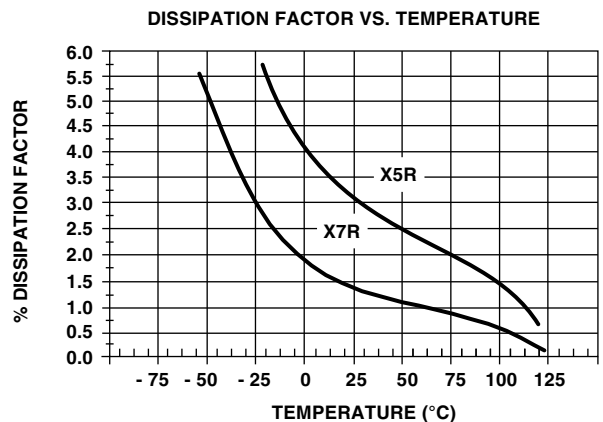
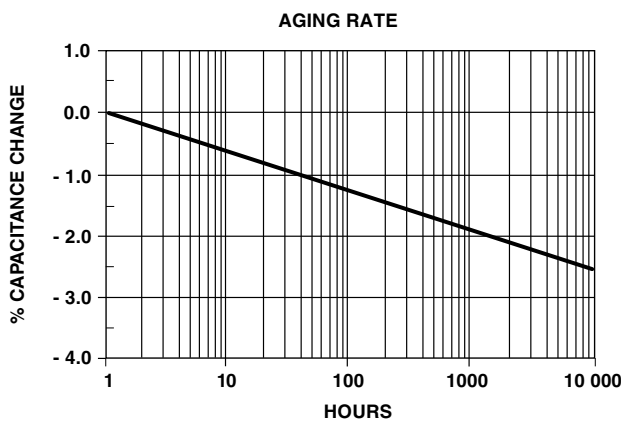
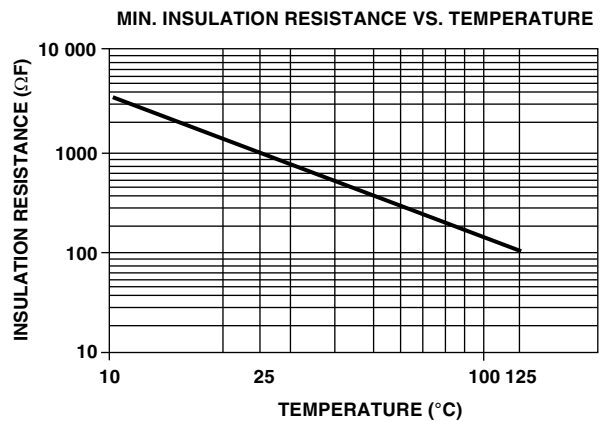
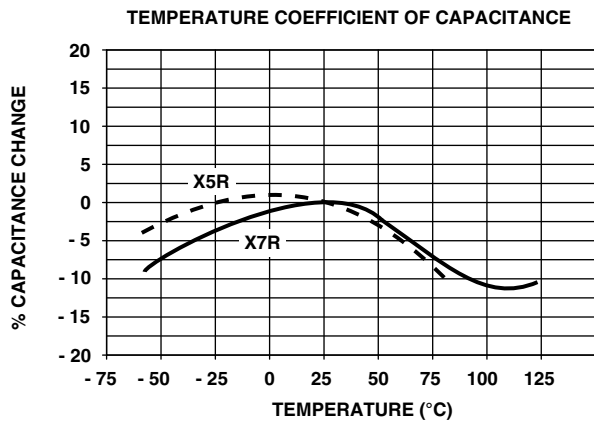


HI-REL COG (NP0) DIELECTRIC - TYPICAL PARAMETERS





HI-REL X7R / X5R DIELECTRIC - TYPICAL PARAMETERS





| STANDARD PACKAGING QUANTITIES (1)(2)(3) | | | | | | |
|---|-----------|-------------------------------------|---------------------------------|---------------------------------|-------------------------------------|---------------------------------|
| 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" | LOW QUANTITY PACKAGING CODE "J" | PAPER TAPE PACKAGING CODE "P" / "I" | PLASTIC TAPE PACKAGING CODE "R" |
| 0402 | 8 mm | 5000 | n/a | 1000 | 10 000 | n/a |
| 0603 (4) | 8 mm | 4000 | 4000 | 1000 | 10 000 | 10 000 |
| 0805 (4) | 8 mm | 3000 | 3000 | 1000 | 10 000 | 10 000 |
| 1206 (4) | 8 mm | 3000 | 3000 / 2500 | 1000 | 10 000 | 10 000 / 9000 |
| 1210 (4) | 8 mm | n/a | 3000 / 2500 / 2000 | 1000 | n/a | 10 000 / 9000 |
| 1808 | 12 mm | n/a | 2000 | 500 | n/a | 10 000 |
| 1812 | 12 mm | n/a | 1000 | 500 | n/a | 4000 |
| 1825 | 12 mm | n/a | 1000 | 500 | n/a | 4000 |
| 2220 | 12 mm | n/a | 1000 | 500 | n/a | 4000 |
| 2225 | 12 mm | n/a | 500 | 250 | n/a | 4000 |
| 3640 | 16 mm | n/a | 500 | n/a | n/a | n/a |

Notes

- (1) Vishay Vitramon uses embossed plastic carrier tape
- (2) Reference: EIA standard RS 481 - "Taping of Surface Mount Components for Automatic Placement"
- (3) n/a = not available
- (4) Packaging "C" / "P" / "O" / "I", and "T" / "R" or lower quantities can depend from product thickness

| STORAGE AND HANDLING CONDITIONS |
|---|
| <p>(1) Store the components at 5 °C to +40 °C ambient temperature and ≤ 70 % relative humidity conditions.</p> <p>(2) The product is recommended to be used within a time-frame of 2 years after shipment. Check solderability in case extended shelf life beyond the expiry date is needed.</p> <p>Precautions:</p> <ul style="list-style-type: none"> 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. b. Store products on the shelf and avoid exposure to moisture or dust. c. Do not expose products to excessive shock, vibration, direct sunlight and so on. |



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[VJ1210Y105MLAAT2L](#) [VJ1812Y104KLEAT68](#) [VJ0805Y104KLAAT2L](#) [VJ0805Q221JXAAT2L](#) [VJ1210Y474KLAAT](#)
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