

Surface Mount Multilayer Ceramic Capacitors for RF Power Applications



FEATURES

- Case size 0505, 1111, 2525, and 3838
- Ultra-stable, high Q dielectric material
- Lead (Pb)-free terminations code “X”
- Tin / lead termination code “L”
- Non-magnetic copper termination code “C”
- Reliable Noble Metal Electrode (NME) system
- High frequency
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



Note

* 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

APPLICATIONS

- MRI coils and generators
- RF instruments
- Lasers, CATV, UHF / microwave RF power amplifiers
- Filter networks, timing circuits
- Mixers, oscillators impedance matching networks

ELECTRICAL SPECIFICATIONS

Note

- Electrical characteristics at 25 °C unless otherwise specified

Operating Temperature:

full range: -55 °C to +125 °C

Capacitance Range:

0505: 0.1 pF to 1000 pF

1111: 0.2 pF to 5100 pF

2525: 1.0 pF to 3000 pF

3838: 1.0 pF to 12 nF

Voltage Rating:

0505: 50 V_{DC} to 250 V_{DC}

1111: 50 V_{DC} to 1500 V_{DC}

2525: 300 V_{DC} to 3600 V_{DC}

3838: 300 V_{DC} to 7200 V_{DC}

Temperature Coefficient of Capacitance (TCC):

C0G (D): 0 ppm/°C ± 30 ppm/°C from -55 °C to +125 °C with zero (0) V_{DC} applied

Dissipation Factor (DF):

C0G (D): 0.05 % max. at 1.0 V_{RMS} and 1 MHz for values ≤ 1000 pF

C0G (D): 0.05 % max. at 1.0 V_{RMS} and 1 kHz for values > 1000 pF

Aging Rate: 0 % maximum per decade

Insulation Resistance (IR):

at +25 °C and rated voltage 100 000 MΩ minimum or 1000 ΩF, whichever is less

at +125 °C and rated voltage 10 000 MΩ minimum or 100 ΩF, whichever is less

Dielectric Strength Test:

performed per method 103 of EIA-198-2-E.

Applied test voltages:

≤ 250 V_{DC}-rated: min. 250 % of rated voltage

300 V_{DC}-rated: min. 150 % of rated voltage

630 V_{DC}- to 1000 V_{DC}-rated: 150 % of rated voltage

1500 V_{DC} and up: 120 % rated voltage

| QUICK REFERENCE DATA | | | | |
|----------------------|------|---------------------|-------------|---------|
| DIELECTRIC | CASE | MAXIMUM VOLTAGE (V) | CAPACITANCE | |
| | | | MINIMUM | MAXIMUM |
| D = NP0 | 0505 | 250 | 0.1 pF | 1000 pF |
| | 1111 | 1500 | 0.2 pF | 5100 pF |
| | 2525 | 3600 | 1.0 pF | 3000 pF |
| | 3838 | 7200 | 1.0 pF | 12 nF |

Note

- For values below 0.4 pF and tolerance ± 0.05 pF, contact mlccrf@vishay.com
Detail ratings see "Selection Chart"

| ORDERING INFORMATION | | | | | | | |
|------------------------------|------------|---|---|--|--|----------------------------|--|
| VJ0505 | D | 1R0 | B | X | C | A | C |
| CASE CODE | DIELECTRIC | CAPACITANCE NOMINAL CODE | CAPACITANCE TOLERANCE | TERMINATION | DC VOLTAGE RATING ⁽¹⁾ | MARKING | PACKAGING |
| 0505 1111 2525 3838 | D = HIFREQ | Expressed in picofarads (pF). The first two digits are significant, the third is a multiplier. An "R" indicates a decimal point. Examples: 1R0 = 1.0 pF | V = ± 0.05 pF B = ± 0.10 pF C = ± 0.25 pF D = ± 0.50 pF F = ± 1 % G = ± 2 % J = ± 5 % K = ± 10 % M = ± 20 % Note Details see "Selection Chart" | C = non-magnetic copper barrier 100 % tin plate matte finish X = Ni barrier 100 % tin plate matte finish L = Ni barrier with tin lead plated finish min. 4 % lead | A = 50 V B = 100 V K = 150 V C = 200 V P = 250 V D = 300 V E = 500 V L = 630 V I = 800 V G = 1000 V R = 1500 V F = 2000 V O = 2500 V H = 3000 V W = 3600 V M = 5000 V S = 7200 V | A = unmarked Q = marked | T = 7" reel / plastic tape J = 7" reel (low quantity) R = 11 1/4" / 13" reel / plastic tape W = waffle pack |

Note

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

| ENVIRONMENTAL STATUS | | | |
|----------------------|---|----------------|--------------|
| TERMINATION CODE | TERMINATION DESCRIPTION | RoHS COMPLIANT | VISHAY GREEN |
| X | Ni barrier 100 % tin plated matte finish | Yes | Yes |
| L | Ni barrier with tin lead plated finish min. 4 % lead | No | No |
| C | Cu barrier 100 % tin plated matte finish (non-magnetic) | Yes | Yes |

| DIMENSIONS in inches (millimeters) | | | | | | |
|------------------------------------|--------|---|---|-----------------------|----------------------|------------------------|
| | | | | | | |
| CASE CODE | STYLE | LENGTH (L) | WIDTH (W) | MAXIMUM THICKNESS (T) | TERMINATIONS PAD (P) | |
| | | | | | MINIMUM | MAXIMUM ⁽¹⁾ |
| 0505 | VJ0505 | 0.055 + 0.015 / - 0.010 (1.40 + 0.382 / - 0.254) | 0.055 \pm 0.015 (1.40 \pm 0.38) | 0.057 (1.45) | 0.004 (0.10) | 0.016 (0.41) |
| 1111 | VJ1111 | 0.117 + 0.015 / - 0.010 (2.98 + 0.382 / - 0.254) | 0.110 + 0.015 / - 0.020 (2.79 + 0.382 / - 0.509) | 0.102 (2.59) | 0.012 (0.30) | 0.018 (0.46) |
| 2525 | VJ2525 | 0.250 + 0.020 / - 0.025 (6.35 + 0.508 / - 0.63) | 0.250 \pm 0.015 (6.35 \pm 0.381) | 0.102 (2.59) | 0.010 (0.25) | 0.030 (0.76) |
| 3838 | VJ3838 | 0.381 \pm 0.015 (9.7 \pm 0.40) | 0.381 + 0.017 / - 0.015 (9.7 + 0.45 / - 0.40) | 0.118 (3.00) | 0.010 (0.25) | 0.030 (0.76) |

Note

- ⁽¹⁾ For copper terminations add 0.01 mm to maximum termination pad



| SELECTION CHART | | | | | | | |
|----------------------------|--------|---------|-----|-----|-----|-----|---------------|
| DIELECTRIC (VISHAY CODE) | | C0G (D) | | | | | |
| STYLE | | VJ0505 | | | | | |
| CASE CODE | | 0505 | | | | | |
| VOLTAGE (V _{DC}) | | 50 | 100 | 150 | 200 | 250 | TOLERANCE |
| VOLTAGE CODE | | A | B | K | C | P | |
| CAP. CODE | CAP. | | | | | | |
| 0R1 | 0.1 pF | • | • | • | • | • | V, B, C, D |
| 0R2 | 0.2 pF | • | • | • | • | • | V, B, C, D |
| 0R3 | 0.3 pF | • | • | • | • | • | V, B, C, D |
| 0R4 | 0.4 pF | • | • | • | • | • | V, B, C, D |
| 0R5 | 0.5 pF | • | • | • | • | • | V, B, C, D |
| 0R6 | 0.6 pF | • | • | • | • | • | V, B, C, D |
| 0R7 | 0.7 pF | • | • | • | • | • | V, B, C, D |
| 0R8 | 0.8 pF | • | • | • | • | • | V, B, C, D |
| 0R9 | 0.9 pF | • | • | • | • | • | V, B, C, D |
| 1R0 | 1.0 pF | • | • | • | • | • | V, B, C, D |
| 1R1 | 1.1 pF | • | • | • | • | • | V, B, C, D |
| 1R2 | 1.2 pF | • | • | • | • | • | V, B, C, D |
| 1R3 | 1.3 pF | • | • | • | • | • | V, B, C, D |
| 1R4 | 1.4 pF | • | • | • | • | • | V, B, C, D |
| 1R5 | 1.5 pF | • | • | • | • | • | V, B, C, D |
| 1R6 | 1.6 pF | • | • | • | • | • | V, B, C, D |
| 1R7 | 1.7 pF | • | • | • | • | • | V, B, C, D |
| 1R8 | 1.8 pF | • | • | • | • | • | V, B, C, D |
| 1R9 | 1.9 pF | • | • | • | • | • | V, B, C, D |
| 2R0 | 2.0 pF | • | • | • | • | • | V, B, C, D |
| 2R1 | 2.1 pF | • | • | • | • | • | V, B, C, D |
| 2R2 | 2.2 pF | • | • | • | • | • | V, B, C, D |
| 2R4 | 2.4 pF | • | • | • | • | • | V, B, C, D |
| 2R7 | 2.7 pF | • | • | • | • | • | V, B, C, D |
| 3R0 | 3.0 pF | • | • | • | • | • | V, B, C, D |
| 3R3 | 3.3 pF | • | • | • | • | • | V, B, C, D |
| 3R6 | 3.6 pF | • | • | • | • | • | V, B, C, D |
| 3R9 | 3.9 pF | • | • | • | • | • | V, B, C, D |
| 4R3 | 4.3 pF | • | • | • | • | • | V, B, C, D |
| 4R7 | 4.7 pF | • | • | • | • | • | V, B, C, D |
| 5R1 | 5.1 pF | • | • | • | • | • | V, B, C, D |
| 5R6 | 5.6 pF | • | • | • | • | • | B, C, D |
| 6R2 | 6.2 pF | • | • | • | • | • | B, C, D |
| 6R8 | 6.8 pF | • | • | • | • | • | B, C, D |
| 7R5 | 7.5 pF | • | • | • | • | • | B, C, D |
| 8R2 | 8.2 pF | • | • | • | • | • | B, C, D |
| 9R1 | 9.1 pF | • | • | • | • | • | B, C, D |
| 100 | 10 pF | • | • | • | • | • | F, G, J, K, M |
| 110 | 11 pF | • | • | • | • | • | F, G, J, K, M |
| 120 | 12 pF | • | • | • | • | • | F, G, J, K, M |
| 130 | 13 pF | • | • | • | • | • | F, G, J, K, M |
| 150 | 15 pF | • | • | • | • | • | F, G, J, K, M |
| 160 | 16 pF | • | • | • | • | • | F, G, J, K, M |
| 180 | 18 pF | • | • | • | • | • | F, G, J, K, M |

Notes

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



| SELECTION CHART | | | | | | | |
|---------------------------------|-------------|----------------|------------|------------|------------|------------|------------------|
| DIELECTRIC (VISHAY CODE) | | COG (D) | | | | | |
| STYLE | | VJ0505 | | | | | |
| CASE CODE | | 0505 | | | | | |
| VOLTAGE (V_{DC}) | | 50 | 100 | 150 | 200 | 250 | TOLERANCE |
| VOLTAGE CODE | | A | B | K | C | P | |
| CAP. CODE | CAP. | | | | | | |
| 200 | 20 pF | • | • | • | • | • | F, G, J, K, M |
| 220 | 22 pF | • | • | • | • | • | F, G, J, K, M |
| 240 | 24 pF | • | • | • | • | • | F, G, J, K, M |
| 270 | 27 pF | • | • | • | • | • | F, G, J, K, M |
| 300 | 30 pF | • | • | • | • | • | F, G, J, K, M |
| 330 | 33 pF | • | • | • | • | • | F, G, J, K, M |
| 360 | 36 pF | • | • | • | • | • | F, G, J, K, M |
| 390 | 39 pF | • | • | • | • | • | F, G, J, K, M |
| 430 | 43 pF | • | • | • | • | • | F, G, J, K, M |
| 470 | 47 pF | • | • | • | • | • | F, G, J, K, M |
| 510 | 51 pF | • | • | • | • | • | F, G, J, K, M |
| 560 | 56 pF | • | • | • | • | • | F, G, J, K, M |
| 620 | 62 pF | • | • | • | • | • | F, G, J, K, M |
| 680 | 68 pF | • | • | • | • | • | F, G, J, K, M |
| 750 | 75 pF | • | • | • | • | | F, G, J, K, M |
| 820 | 82 pF | • | • | • | • | | F, G, J, K, M |
| 910 | 91 pF | • | • | • | • | | F, G, J, K, M |
| 101 | 100 pF | • | • | • | • | | F, G, J, K, M |
| 111 | 110 pF | • | • | • | • | | F, G, J, K, M |
| 121 | 120 pF | • | • | • | • | | F, G, J, K, M |
| 131 | 130 pF | • | • | • | • | | F, G, J, K, M |
| 151 | 150 pF | • | • | • | • | | F, G, J, K, M |
| 161 | 160 pF | • | • | • | • | | F, G, J, K, M |
| 181 | 180 pF | • | • | • | • | | F, G, J, K, M |
| 201 | 200 pF | • | • | • | • | | F, G, J, K, M |
| 221 | 220 pF | • | • | • | • | | F, G, J, K, M |
| 241 | 240 pF | • | • | • | • | | F, G, J, K, M |
| 271 | 270 pF | • | • | • | | | F, G, J, K, M |
| 301 | 300 pF | • | • | • | | | F, G, J, K, M |
| 331 | 330 pF | • | • | • | | | F, G, J, K, M |
| 361 | 360 pF | • | • | • | | | F, G, J, K, M |
| 391 | 390 pF | • | • | • | | | F, G, J, K, M |
| 431 | 430 pF | • | • | • | | | F, G, J, K, M |
| 471 | 470 pF | • | • | • | | | F, G, J, K, M |
| 511 | 510 pF | • | | | | | F, G, J, K, M |
| 561 | 560 pF | • | | | | | F, G, J, K, M |
| 621 | 620 pF | • | | | | | F, G, J, K, M |
| 681 | 680 pF | • | | | | | F, G, J, K, M |
| 751 | 750 pF | • | | | | | F, G, J, K, M |
| 821 | 820 pF | • | | | | | F, G, J, K, M |
| 911 | 910 pF | • | | | | | F, G, J, K, M |
| 102 | 1000 pF | • | | | | | F, G, J, K, M |
| 112 | 1100 pF | | | | | | |
| 122 | 1200 pF | | | | | | |

Notes

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



| SELECTION CHART | | | | | | | | | | |
|----------------------------|--------|---------|-----|-----|-----|-----|-----|------|------|---------------|
| DIELECTRIC (VISHAY CODE) | | COG (D) | | | | | | | | |
| STYLE | | VJ1111 | | | | | | | | |
| CASE CODE | | 1111 | | | | | | | | |
| VOLTAGE (V _{DC}) | | 50 | 100 | 200 | 300 | 500 | 630 | 1000 | 1500 | TOLERANCE |
| VOLTAGE CODE | | A | B | C | D | E | L | G | R | |
| CAP. CODE | CAP. | | | | | | | | | |
| 0R2 | 0.2 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 0R3 | 0.3 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 0R4 | 0.4 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 0R5 | 0.5 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 0R6 | 0.6 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 0R7 | 0.7 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 0R8 | 0.8 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 0R9 | 0.9 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 1R0 | 1.0 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 1R1 | 1.1 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 1R2 | 1.2 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 1R3 | 1.3 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 1R4 | 1.4 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 1R5 | 1.5 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 1R6 | 1.6 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 1R7 | 1.7 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 1R8 | 1.8 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 1R9 | 1.9 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 2R0 | 2.0 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 2R1 | 2.1 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 2R2 | 2.2 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 2R4 | 2.4 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 2R7 | 2.7 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 3R0 | 3.0 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 3R3 | 3.3 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 3R6 | 3.6 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 3R9 | 3.9 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 4R3 | 4.3 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 4R7 | 4.7 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 5R1 | 5.1 pF | • | • | • | • | • | • | • | • | V, B, C, D |
| 5R6 | 5.6 pF | • | • | • | • | • | • | • | • | B, C, D |
| 6R2 | 6.2 pF | • | • | • | • | • | • | • | • | B, C, D |
| 6R8 | 6.8 pF | • | • | • | • | • | • | • | • | B, C, D |
| 7R5 | 7.5 pF | • | • | • | • | • | • | • | • | B, C, D |
| 8R2 | 8.2 pF | • | • | • | • | • | • | • | • | B, C, D |
| 9R1 | 9.1 pF | • | • | • | • | • | • | • | • | B, C, D |
| 100 | 10 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 110 | 11 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 120 | 12 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 130 | 13 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 150 | 15 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 160 | 16 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 180 | 18 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 200 | 20 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 220 | 22 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 240 | 24 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 270 | 27 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 300 | 30 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 330 | 33 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 360 | 36 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 390 | 39 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 430 | 43 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |

Notes

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



| SELECTION CHART | | | | | | | | | | |
|----------------------------|---------|---------|-----|-----|-----|-----|-----|------|------|---------------|
| DIELECTRIC (VISHAY CODE) | | COG (D) | | | | | | | | |
| STYLE | | VJ1111 | | | | | | | | |
| CASE CODE | | 1111 | | | | | | | | |
| VOLTAGE (V _{DC}) | | 50 | 100 | 200 | 300 | 500 | 630 | 1000 | 1500 | TOLERANCE |
| VOLTAGE CODE | | A | B | C | D | E | L | G | R | |
| CAP. CODE | CAP. | | | | | | | | | |
| 470 | 47 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 510 | 51 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 560 | 56 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 620 | 62 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 680 | 68 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 750 | 75 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 820 | 82 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 910 | 91 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 101 | 100 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 111 | 110 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 121 | 120 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 131 | 130 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 151 | 150 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 161 | 160 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 181 | 180 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 201 | 200 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 221 | 220 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 241 | 240 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 271 | 270 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 301 | 300 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 331 | 330 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 361 | 360 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 391 | 390 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 431 | 430 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 471 | 470 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 511 | 510 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 561 | 560 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 621 | 620 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 681 | 680 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 751 | 750 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 821 | 820 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 911 | 910 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 102 | 1000 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 112 | 1100 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 122 | 1200 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 132 | 1300 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 152 | 1500 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 162 | 1600 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 182 | 1800 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 202 | 2000 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 222 | 2200 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 242 | 2400 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 272 | 2700 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 302 | 3000 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 332 | 3300 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 362 | 3600 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 392 | 3900 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 432 | 4300 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 472 | 4700 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 512 | 5100 pF | • | • | • | • | • | • | • | • | F, G, J, K, M |

Notes

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



| SELECTION CHART | | | | | | | | | | | | |
|----------------------------|--------|---------|-----|-----|-----|------|------|------|------|------|------|---------------|
| DIELECTRIC (VISHAY CODE) | | C0G (D) | | | | | | | | | | |
| STYLE | | VJ2525 | | | | | | | | | | |
| CASE CODE | | 2525 | | | | | | | | | | |
| VOLTAGE (V _{DC}) | | 300 | 500 | 630 | 800 | 1000 | 1500 | 2000 | 2500 | 3000 | 3600 | TOLERANCE |
| VOLTAGE CODE | | D | E | L | I | G | R | F | O | H | W | |
| CAP. CODE | CAP. | | | | | | | | | | | |
| 1R0 | 1.0 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 1R1 | 1.1 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 1R2 | 1.2 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 1R3 | 1.3 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 1R4 | 1.4 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 1R5 | 1.5 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 1R6 | 1.6 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 1R7 | 1.7 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 1R8 | 1.8 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 1R9 | 1.9 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 2R0 | 2.0 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 2R1 | 2.1 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 2R2 | 2.2 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 2R4 | 2.4 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 2R7 | 2.7 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 3R0 | 3.0 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 3R3 | 3.3 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 3R6 | 3.6 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 3R9 | 3.9 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 4R3 | 4.3 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 4R7 | 4.7 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 5R1 | 5.1 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 5R6 | 5.6 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 6R2 | 6.2 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 6R8 | 6.8 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 7R5 | 7.5 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 8R2 | 8.2 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 9R1 | 9.1 pF | • | • | • | • | • | • | • | • | • | • | B, C, D |
| 100 | 10 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 110 | 11 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 120 | 12 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 130 | 13 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 150 | 15 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 160 | 16 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 180 | 18 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 200 | 20 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 220 | 22 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 240 | 24 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 270 | 27 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 300 | 30 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 330 | 33 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 360 | 36 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 390 | 39 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |

Notes

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



| SELECTION CHART | | | | | | | | | | | | |
|----------------------------|---------|---------|-----|-----|-----|------|------|------|------|------|------|---------------|
| DIELECTRIC (VISHAY CODE) | | COG (D) | | | | | | | | | | |
| STYLE | | VJ2525 | | | | | | | | | | |
| CASE CODE | | 2525 | | | | | | | | | | |
| VOLTAGE (V _{DC}) | | 300 | 500 | 630 | 800 | 1000 | 1500 | 2000 | 2500 | 3000 | 3600 | TOLERANCE |
| VOLTAGE CODE | | D | E | L | I | G | R | F | O | H | W | |
| CAP. CODE | CAP. | | | | | | | | | | | |
| 430 | 43 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 470 | 47 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 510 | 51 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 560 | 56 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 620 | 62 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 680 | 68 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 750 | 75 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 820 | 82 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 910 | 91 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 101 | 100 pF | • | • | • | • | • | • | • | • | • | • | F, G, J, K, M |
| 111 | 110 pF | • | • | • | • | • | • | • | • | • | | F, G, J, K, M |
| 121 | 120 pF | • | • | • | • | • | • | • | • | • | | F, G, J, K, M |
| 131 | 130 pF | • | • | • | • | • | • | • | • | • | | F, G, J, K, M |
| 151 | 150 pF | • | • | • | • | • | • | • | • | • | | F, G, J, K, M |
| 161 | 160 pF | • | • | • | • | • | • | • | • | • | | F, G, J, K, M |
| 181 | 180 pF | • | • | • | • | • | • | • | • | • | | F, G, J, K, M |
| 201 | 200 pF | • | • | • | • | • | • | • | • | • | | F, G, J, K, M |
| 221 | 220 pF | • | • | • | • | • | • | • | • | • | | F, G, J, K, M |
| 241 | 240 pF | • | • | • | • | • | • | • | • | • | | F, G, J, K, M |
| 271 | 270 pF | • | • | • | • | • | • | • | • | • | | F, G, J, K, M |
| 301 | 300 pF | • | • | • | • | • | • | • | | | | F, G, J, K, M |
| 331 | 330 pF | • | • | • | • | • | • | • | | | | F, G, J, K, M |
| 361 | 360 pF | • | • | • | • | • | • | • | | | | F, G, J, K, M |
| 391 | 390 pF | • | • | • | • | • | • | • | | | | F, G, J, K, M |
| 431 | 430 pF | • | • | • | • | • | • | • | | | | F, G, J, K, M |
| 471 | 470 pF | • | • | • | • | • | • | • | | | | F, G, J, K, M |
| 511 | 510 pF | • | • | • | • | • | • | | | | | F, G, J, K, M |
| 561 | 560 pF | • | • | • | • | • | • | | | | | F, G, J, K, M |
| 621 | 620 pF | • | • | • | • | • | • | | | | | F, G, J, K, M |
| 681 | 680 pF | • | • | • | • | • | • | | | | | F, G, J, K, M |
| 751 | 750 pF | • | • | • | • | • | • | | | | | F, G, J, K, M |
| 821 | 820 pF | • | • | • | • | • | • | | | | | F, G, J, K, M |
| 911 | 910 pF | • | • | • | • | • | • | | | | | F, G, J, K, M |
| 102 | 1000 pF | • | • | • | • | • | • | | | | | F, G, J, K, M |
| 112 | 1100 pF | • | • | • | • | • | • | | | | | F, G, J, K, M |
| 122 | 1200 pF | • | • | • | • | • | • | | | | | F, G, J, K, M |
| 152 | 1500 pF | • | • | • | • | | | | | | | F, G, J, K, M |
| 182 | 1800 pF | • | • | • | • | | | | | | | F, G, J, K, M |
| 222 | 2000 pF | • | • | • | • | | | | | | | F, G, J, K, M |
| 242 | 2400 pF | • | • | • | | | | | | | | F, G, J, K, M |
| 272 | 2700 pF | • | • | | | | | | | | | F, G, J, K, M |
| 302 | 3000 pF | • | • | | | | | | | | | F, G, J, K, M |

Notes

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

• Plastic carrier tape



| SELECTION CHART | | | | | | | | | |
|----------------------------|--------|---------|-----|------|------|------|------|------|---------------|
| DIELECTRIC (VISHAY CODE) | | COG (D) | | | | | | | |
| STYLE | | VJ3838 | | | | | | | |
| CASE CODE | | 3838 | | | | | | | |
| VOLTAGE (V _{DC}) | | 300 | 500 | 1000 | 2500 | 3600 | 5000 | 7200 | TOLERANCE |
| VOLTAGE CODE | | D | E | G | O | W | M | S | |
| CAP. CODE | CAP. | | | | | | | | |
| 1R0 | 1.0 pF | • | • | • | • | • | • | • | B, C, D |
| 1R1 | 1.1 pF | • | • | • | • | • | • | • | B, C, D |
| 1R2 | 1.2 pF | • | • | • | • | • | • | • | B, C, D |
| 1R3 | 1.3 pF | • | • | • | • | • | • | • | B, C, D |
| 1R4 | 1.4 pF | • | • | • | • | • | • | • | B, C, D |
| 1R5 | 1.5 pF | • | • | • | • | • | • | • | B, C, D |
| 1R6 | 1.6 pF | • | • | • | • | • | • | • | B, C, D |
| 1R7 | 1.7 pF | • | • | • | • | • | • | • | B, C, D |
| 1R8 | 1.8 pF | • | • | • | • | • | • | • | B, C, D |
| 1R9 | 1.9 pF | • | • | • | • | • | • | • | B, C, D |
| 2R0 | 2.0 pF | • | • | • | • | • | • | • | B, C, D |
| 2R1 | 2.1 pF | • | • | • | • | • | • | • | B, C, D |
| 2R2 | 2.2 pF | • | • | • | • | • | • | • | B, C, D |
| 2R4 | 2.4 pF | • | • | • | • | • | • | • | B, C, D |
| 2R7 | 2.7 pF | • | • | • | • | • | • | • | B, C, D |
| 3R0 | 3.0 pF | • | • | • | • | • | • | • | B, C, D |
| 3R3 | 3.3 pF | • | • | • | • | • | • | • | B, C, D |
| 3R6 | 3.6 pF | • | • | • | • | • | • | • | B, C, D |
| 3R9 | 3.9 pF | • | • | • | • | • | • | • | B, C, D |
| 4R3 | 4.3 pF | • | • | • | • | • | • | • | B, C, D |
| 4R7 | 4.7 pF | • | • | • | • | • | • | • | B, C, D |
| 5R1 | 5.1 pF | • | • | • | • | • | • | • | B, C, D |
| 5R6 | 5.6 pF | • | • | • | • | • | • | • | B, C, D |
| 6R2 | 6.2 pF | • | • | • | • | • | • | • | B, C, D |
| 6R8 | 6.8 pF | • | • | • | • | • | • | • | B, C, D |
| 7R5 | 7.5 pF | • | • | • | • | • | • | • | B, C, D |
| 8R2 | 8.2 pF | • | • | • | • | • | • | • | B, C, D |
| 9R1 | 9.1 pF | • | • | • | • | • | • | • | B, C, D |
| 100 | 10 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 110 | 11 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 120 | 12 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 130 | 13 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 150 | 15 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 160 | 16 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 180 | 18 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 200 | 20 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 220 | 22 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 240 | 24 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 270 | 27 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 300 | 30 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 330 | 33 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 360 | 36 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 390 | 39 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 430 | 43 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 470 | 47 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 510 | 51 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 560 | 56 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 620 | 62 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 680 | 68 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 750 | 75 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 820 | 82 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 910 | 91 pF | • | • | • | • | • | • | • | F, G, J, K, M |

Notes

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



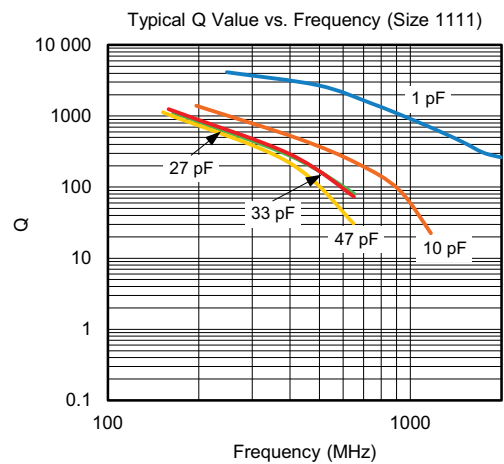
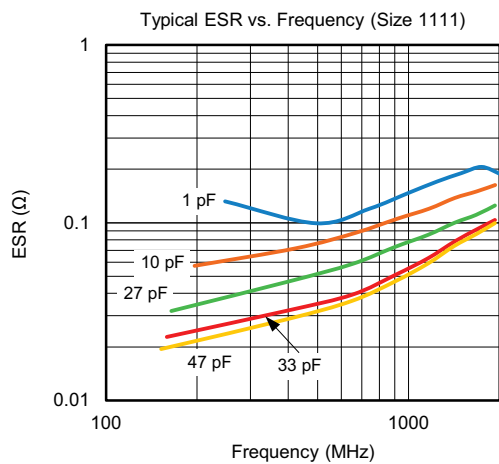
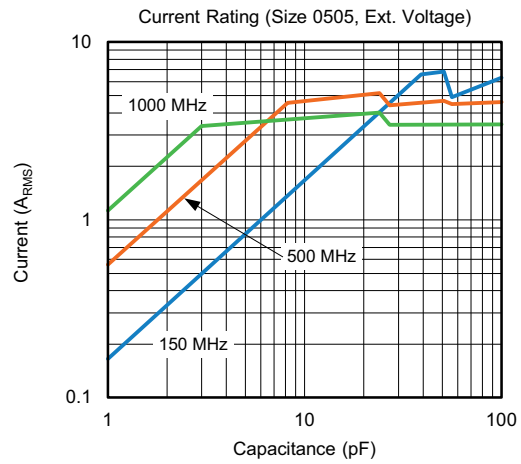
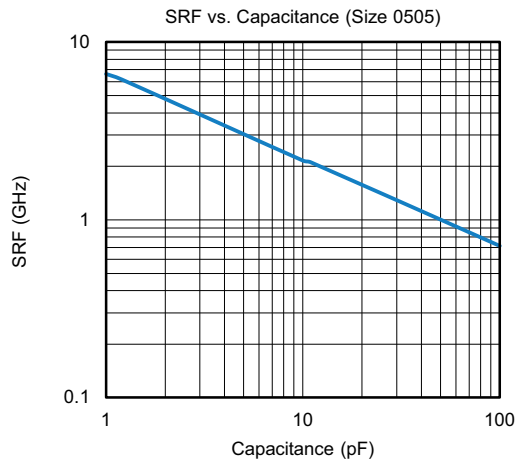
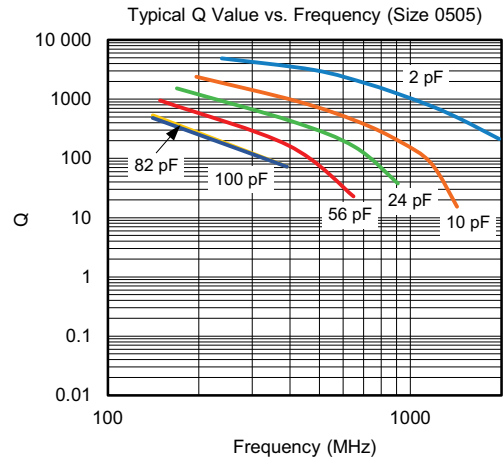
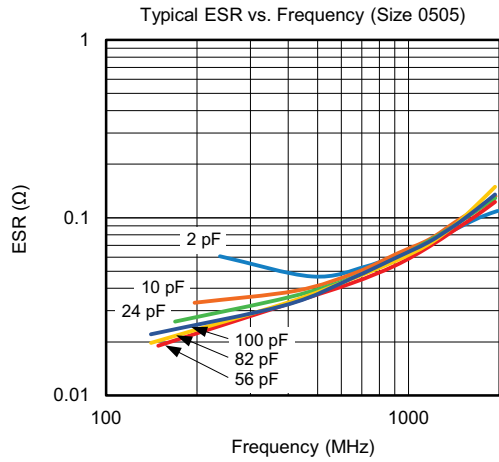
| SELECTION CHART | | | | | | | | | |
|----------------------------|-----------|---------|-----|------|------|------|------|------|---------------|
| DIELECTRIC (VISHAY CODE) | | COG (D) | | | | | | | |
| STYLE | | VJ3838 | | | | | | | |
| CASE CODE | | 3838 | | | | | | | |
| VOLTAGE (V _{DC}) | | 300 | 500 | 1000 | 2500 | 3600 | 5000 | 7200 | TOLERANCE |
| VOLTAGE CODE | | D | E | G | O | W | M | S | |
| CAP. CODE | CAP. | | | | | | | | |
| 101 | 100 pF | • | • | • | • | • | • | • | F, G, J, K, M |
| 111 | 110 pF | • | • | • | • | • | • | | F, G, J, K, M |
| 121 | 120 pF | • | • | • | • | • | • | | F, G, J, K, M |
| 131 | 130 pF | • | • | • | • | • | • | | F, G, J, K, M |
| 151 | 150 pF | • | • | • | • | • | • | | F, G, J, K, M |
| 161 | 160 pF | • | • | • | • | • | • | | F, G, J, K, M |
| 181 | 180 pF | • | • | • | • | • | • | | F, G, J, K, M |
| 201 | 200 pF | • | • | • | • | • | | | F, G, J, K, M |
| 221 | 220 pF | • | • | • | • | • | | | F, G, J, K, M |
| 241 | 240 pF | • | • | • | • | • | | | F, G, J, K, M |
| 271 | 270 pF | • | • | • | • | • | | | F, G, J, K, M |
| 301 | 300 pF | • | • | • | • | • | | | F, G, J, K, M |
| 331 | 330 pF | • | • | • | • | • | | | F, G, J, K, M |
| 361 | 360 pF | • | • | • | • | • | | | F, G, J, K, M |
| 391 | 390 pF | • | • | • | • | • | | | F, G, J, K, M |
| 431 | 430 pF | • | • | • | • | | | | F, G, J, K, M |
| 471 | 470 pF | • | • | • | • | | | | F, G, J, K, M |
| 511 | 510 pF | • | • | • | • | | | | F, G, J, K, M |
| 561 | 560 pF | • | • | • | • | | | | F, G, J, K, M |
| 621 | 620 pF | • | • | • | • | | | | F, G, J, K, M |
| 681 | 680 pF | • | • | • | • | | | | F, G, J, K, M |
| 751 | 750 pF | • | • | • | • | | | | F, G, J, K, M |
| 821 | 820 pF | • | • | • | | | | | F, G, J, K, M |
| 911 | 910 pF | • | • | • | | | | | F, G, J, K, M |
| 102 | 1000 pF | • | • | • | | | | | F, G, J, K, M |
| 112 | 1100 pF | • | • | • | | | | | F, G, J, K, M |
| 122 | 1200 pF | • | • | • | | | | | F, G, J, K, M |
| 152 | 1500 pF | • | • | • | | | | | F, G, J, K, M |
| 182 | 1800 pF | • | • | • | | | | | F, G, J, K, M |
| 222 | 2000 pF | • | • | • | | | | | F, G, J, K, M |
| 242 | 2400 pF | • | • | • | | | | | F, G, J, K, M |
| 272 | 2700 pF | • | • | • | | | | | F, G, J, K, M |
| 302 | 3000 pF | • | • | • | | | | | F, G, J, K, M |
| 332 | 3300 pF | • | • | • | | | | | F, G, J, K, M |
| 362 | 3600 pF | • | • | • | | | | | F, G, J, K, M |
| 392 | 3900 pF | • | • | • | | | | | F, G, J, K, M |
| 432 | 4300 pF | • | • | • | | | | | F, G, J, K, M |
| 472 | 4700 pF | • | • | • | | | | | F, G, J, K, M |
| 512 | 5100 pF | • | • | • | | | | | F, G, J, K, M |
| 562 | 5600 pF | • | • | | | | | | F, G, J, K, M |
| 622 | 6200 pF | • | • | | | | | | F, G, J, K, M |
| 682 | 6800 pF | • | • | | | | | | F, G, J, K, M |
| 752 | 7500 pF | • | • | | | | | | F, G, J, K, M |
| 822 | 8200 pF | • | | | | | | | F, G, J, K, M |
| 912 | 9100 pF | • | | | | | | | F, G, J, K, M |
| 103 | 10 000 pF | • | | | | | | | F, G, J, K, M |
| 113 | 11 000 pF | • | | | | | | | F, G, J, K, M |
| 123 | 12 000 pF | • | | | | | | | F, G, J, K, M |

Notes

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

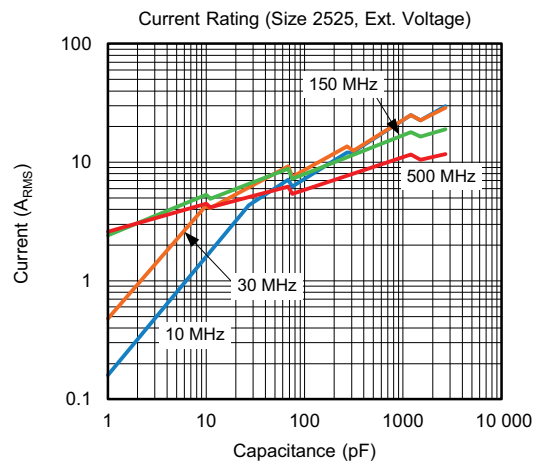
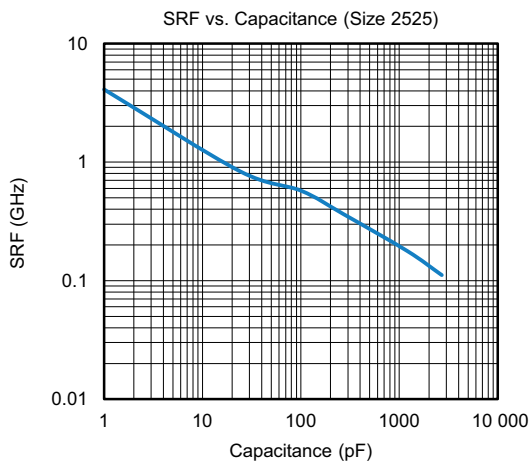
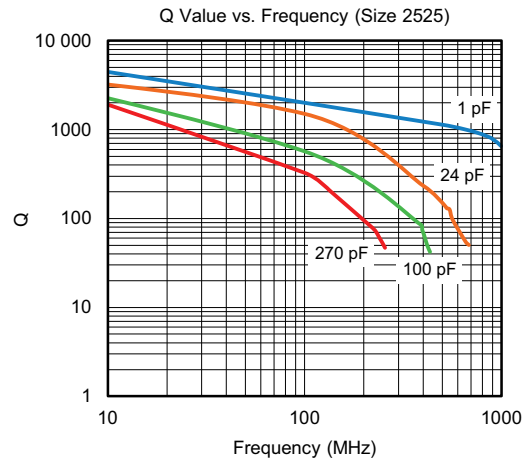
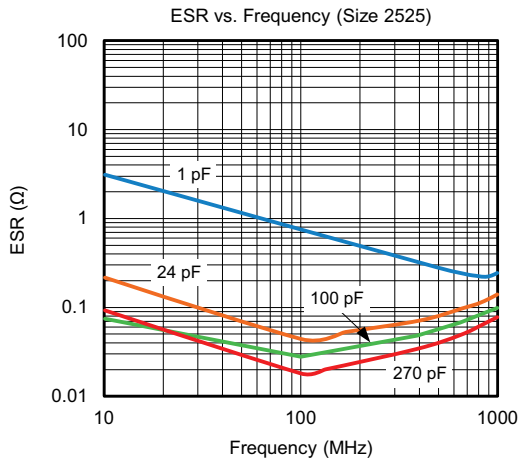
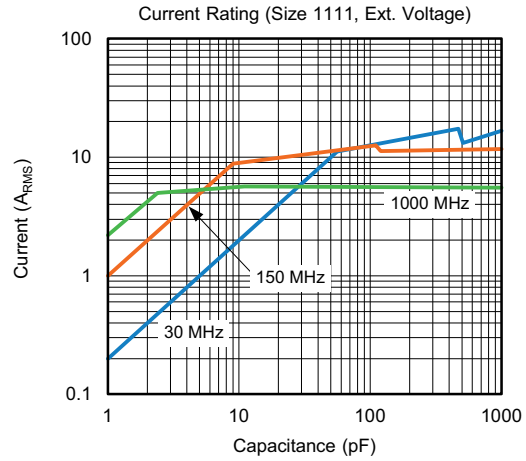
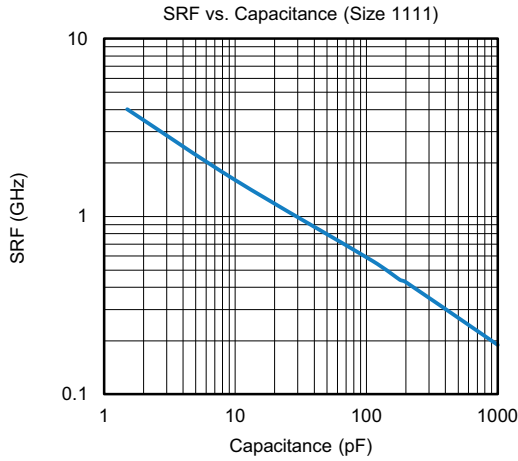


QUAD HIGH FREQ DIELECTRIC - TYPICAL PARAMETERS



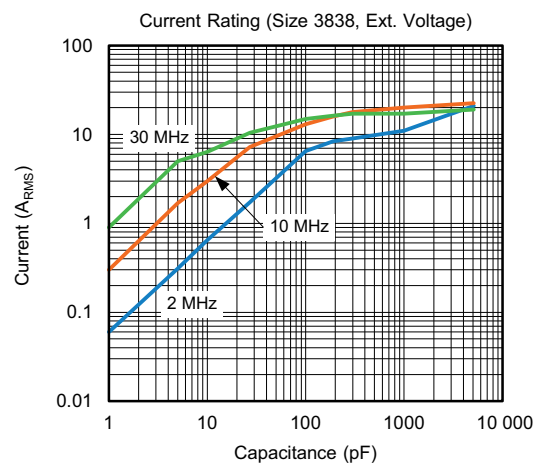
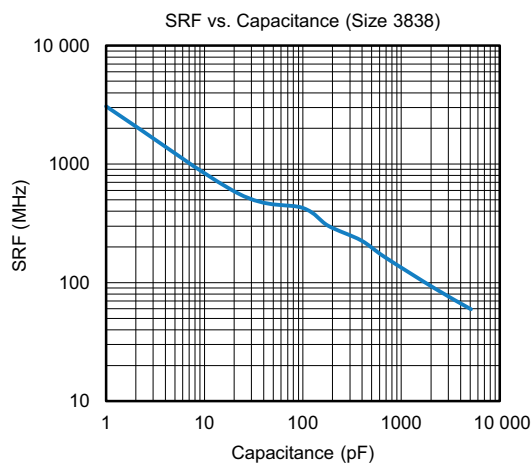
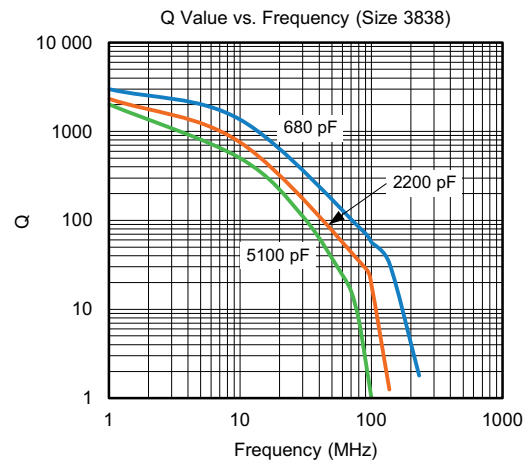
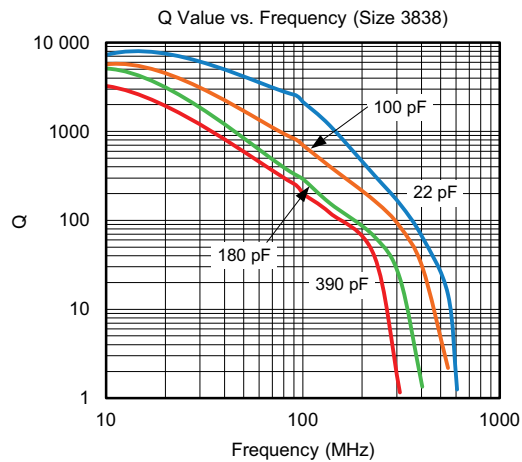
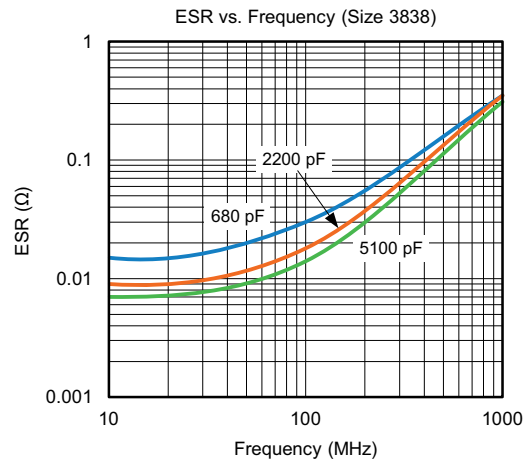
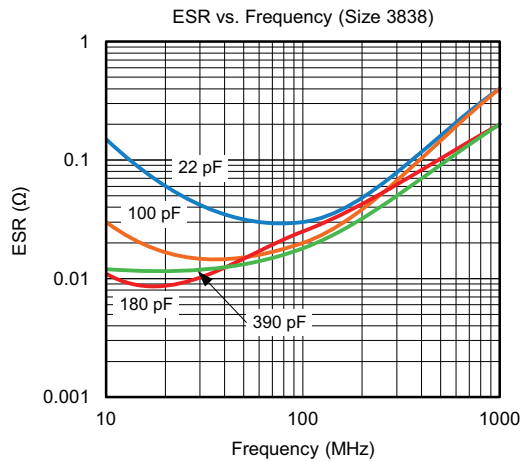


QUAD HIGH FREQ DIELECTRIC - TYPICAL PARAMETERS



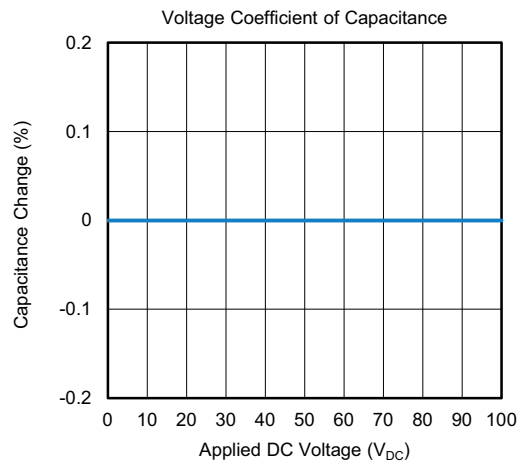
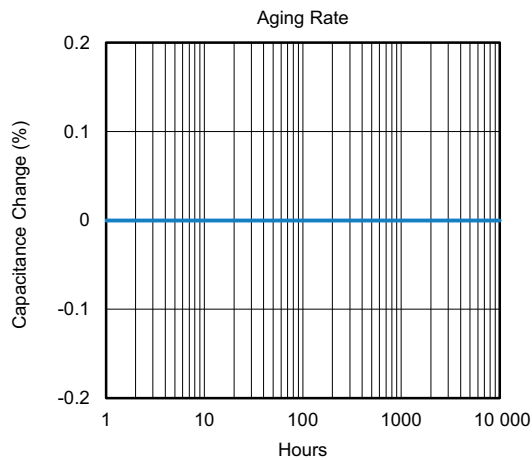
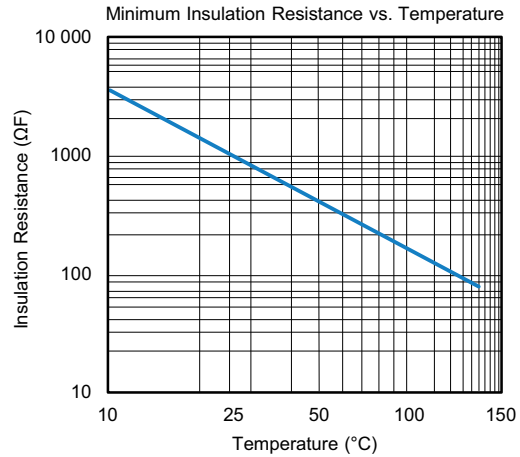
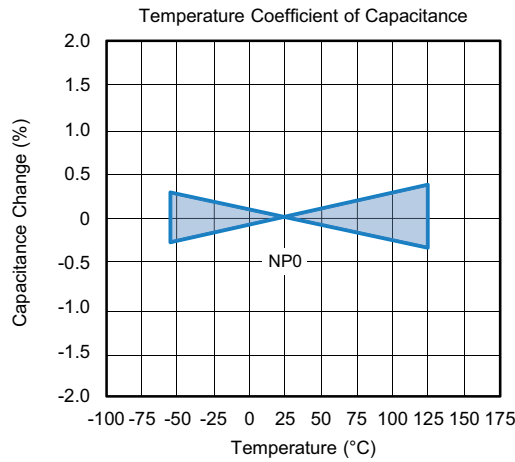


QUAD HIGH FREQ DIELECTRIC - TYPICAL PARAMETERS





QUAD HIGH FREQ DIELECTRIC - TYPICAL PARAMETERS



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

| CASE CODE | TAPE SIZE | 7" REEL QUANTITIES | | 11 1/4" AND 13" REEL QUANTITIES | WAFFLE PACK |
|-----------|-----------|---------------------------------|------------------|---------------------------------|--|
| | | PLASTIC TAPE PACKAGING CODE "T" | LOW QUANTITY "J" | PLASTIC TAPE PACKAGING CODE "R" | PLASTIC WAFFLE PACK PACKAGING CODE "W" |
| 0505 | 8 mm | 3000 | 1000 | 10 000 | n/a |
| 1111 | 8 mm | 2500 | 1000 | 9000 | n/a |
| 2525 | 12 mm | 800 | 500 | n/a | 81 |
| 3838 | 16 mm | 400 | 100 | n/a | 35 |

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) Final quantities for packaging can depend on product thickness



STORAGE AND HANDLING CONDITIONS

- (1) Store the components at 5 °C to 40 °C ambient temperature and ≤ 70 % relative humidity conditions.
- (2) The product is recommended to be used within a time-frame of 2 years after shipment (1 year for copper).
Check solderability in case extended shelf life beyond the expiry date is needed.

Precautions:

- 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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