

Surface Mount Multilayer Ceramic Chip Capacitors for High Frequency Applications



FEATURES

- C0G is an ultra-stable dielectric offering a Temperature Coefficient of Capacitance (TCC) of 0 ± 30 ppm/°C over the entire temperature range
- Low Dissipation Factor (DF)
- Surface mount, precious metal technology, wet build process



RoHS
COMPLIANT

APPLICATIONS

- Ideal for critical timing applications
- Ideal for tuning applications

ELECTRICAL SPECIFICATIONS

Note: Electrical characteristics at + 25 °C unless otherwise specified

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

Voltage Range: 50 Vdc to 200 Vdc

Capacitance Range: 1.0 pF to 220 pF

Temperature Coefficient of Capacitance (TCC):

0 ± 30 ppm/°C from - 55 °C to + 125 °C

Dissipation Factor (DF):

0.1 % maximum at 1.0 V_{rms} and 1 kHz for values > 1000 pF

0.1 % maximum at 1.0 V_{rms} and 1 MHz 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.

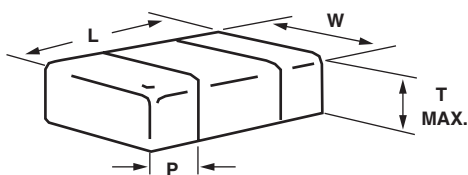
At + 125 °C and rated voltage 10 000 MΩ minimum or 100 ΩF, whichever is less.

Dielectric 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

≤ 200 Vdc: DWV at 250 % of rated voltage

DIMENSIONS in inches [millimeters]



| EIA STYLE | PART ORDERING NUMBER | LENGTH (L) | WIDTH (W) | MAXIMUM THICKNESS (T) | TERMINATION (P) | |
|-----------|----------------------|--------------------------------|--------------------------------|-----------------------|-----------------|-----------------|
| | | | | | MINIMUM | MAXIMUM |
| 0603 | VJ0603 | 0.063 ± 0.005 [1.60 ± 0.12] | 0.031 ± 0.005 [0.80 ± 0.12] | 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] |



ORDERING INFORMATION

| VJ0805 | Q | 101 | K | X | A | A | C | ### ⁽²⁾ |
|--------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------|
| CASE CODE | DIELECTRIC | CAPACITANCE NOMINAL CODE | CAPACITANCE TOLERANCE | TERMINATION | DC VOLTAGE RATING ⁽¹⁾ | MARKING | PACKAGING | PROCESS CODE |
| 0603 0805 | Q = High Q | Expressed in picofarads (pF). The first two digits are significant, the third is a multiplier. An "R" indicates a decimal point. Examples: 101 = 100 pF 1R8 = 1.8 pF | B = ± 0.10 pF C = ± 0.25 pF D = ± 0.5 pF F = ± 1 % G = ± 2 % H = ± 3 % J = ± 5 % K = ± 10 % Note: B, C, D < 10 pF F, G, H ≥ 10 pF J, K ≥ 10 pF | X = Ni barrier 100 % tin plated | A = 50 V B = 100 V C = 200 V | A = Unmarked | C = 7" reel/paper tape 0603: PU = 4000 pieces 0805: PU = 3000 pieces P = 11 1/4" reel/paper tape PU = 10 000 pieces | |

Size 0402 available with Vishay Commodity series, see datasheet: <http://www.vishay.com/doc?28534>

Notes:

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

(2) Process code may be added with up to three digits, used to control non-standard products and/or special requirements

SELECTION CHART

| STYLE | | VJ0603 | | | VJ0805 | | |
|---------------|--------|--------|-----|-----|--------|-----|-----|
| EIA TYPE | | 0603 | | | 0805 | | |
| VOLTAGE (Vdc) | | 50 | 100 | 200 | 50 | 100 | 200 |
| 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 | | | | | | |

Note:

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

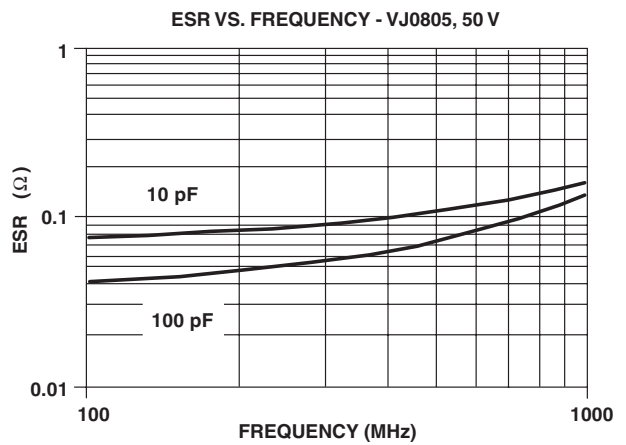
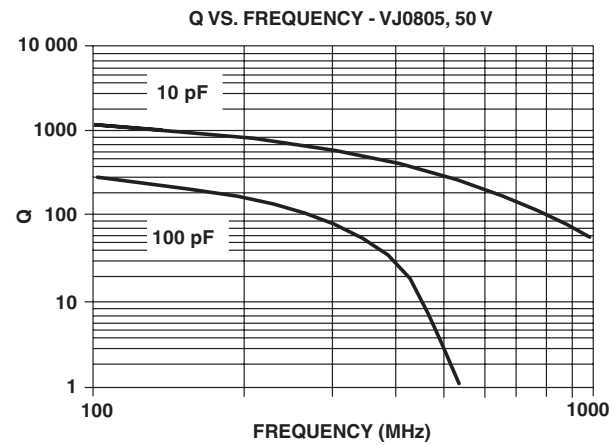
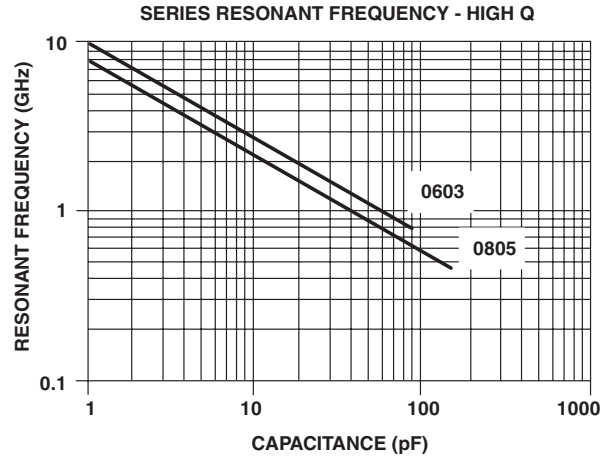
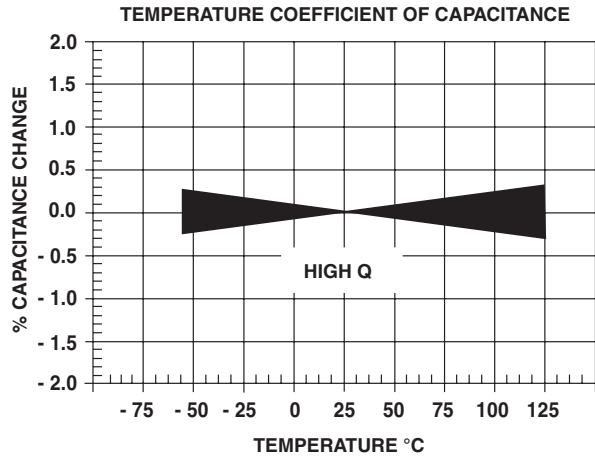
•• Available in paper carrier tape only

VJ High Q Dielectric



Vishay Vitramon Surface Mount Multilayer Ceramic Chip Capacitors
for High Frequency Applications

HIGH Q DIELECTRIC - TYPICAL PARAMETERS





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