

## 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  $0 \pm 30$  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):**

$0 \pm 30$  ppm/°C from - 55 °C to + 125 °C

**Dissipation Factor (DF):**

0.1 % maximum at 1.0 V<sub>rms</sub> and 1 kHz for values > 1000 pF

0.1 % maximum at 1.0 V<sub>rms</sub> 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.

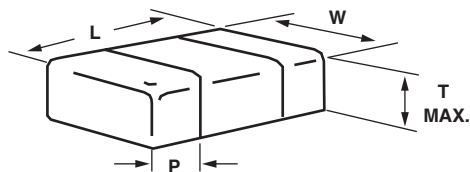
At + 125 °C and rated voltage 10 000 MΩ minimum or 100 ΩF, whichever is less.

**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	### <sup>(2)</sup>
CASE CODE	DIELECTRIC	CAPACITANCE NOMINAL CODE	CAPACITANCE TOLERANCE	TERMINATION	DC VOLTAGE RATING <sup>(1)</sup>	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. <b>Examples:</b> 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 %  <b>Note:</b> 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

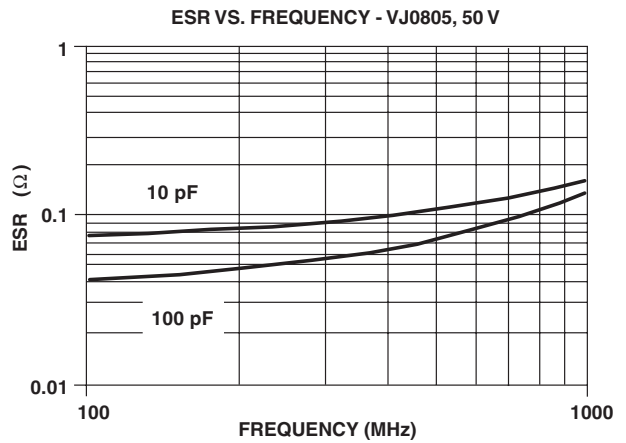
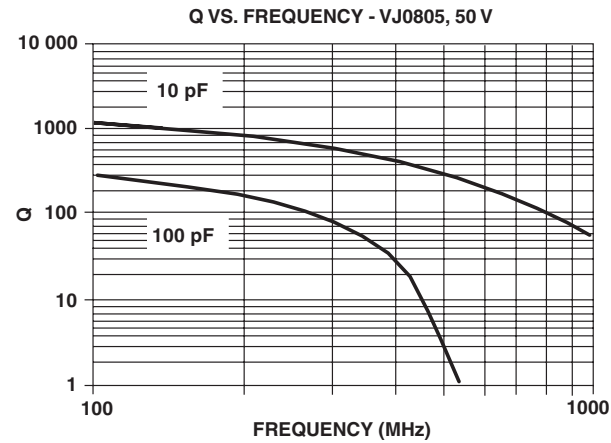
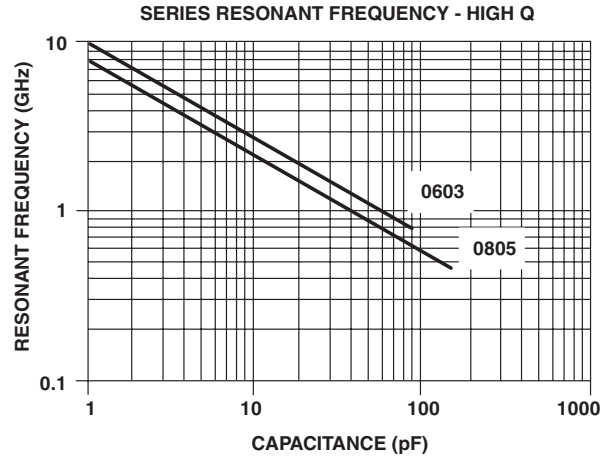
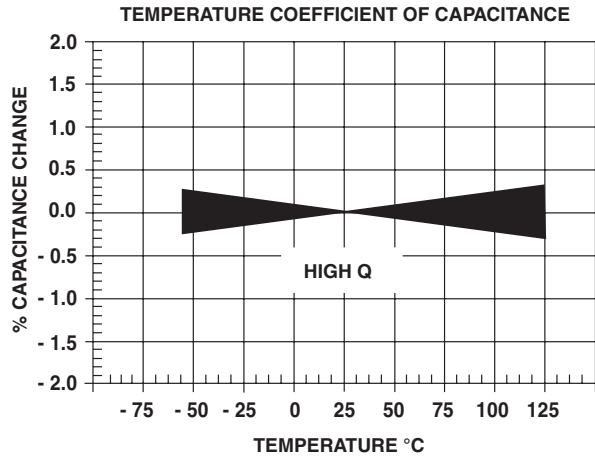
STYLE		VJ0603			VJ0805		
EIA TYPE		0603			0805		
VOLTAGE (Vdc)		50	100	200	50	100	200
CAP. CODE	CAP.						
1R0	1.0 pF	••	••		••	••	••
1R2	1.2 pF	••	••		••	••	••
1R5	1.5 pF	••	••		••	••	••
1R8	1.8 pF	••	••		••	••	••
2R2	2.2 pF	••	••		••	••	••
2R7	2.7 pF	••	••		••	••	••
3R3	3.3 pF	••	••		••	••	••
3R9	3.9 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](http://www.vishay.com/doc?45034)

•• Available in paper carrier tape only

## HIGH Q DIELECTRIC - TYPICAL PARAMETERS





## Disclaimer

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