

MULTILAYER CERAMIC CHIP CAPACITORS

QUAD HiFREQ

Multilayer Ceramic Capacitors for RF Applications



KEY BENEFITS

- Ultra-low ESD (0.01Ω @ 150 kHz, 1000 pF Case size 1111)
- Ultra-high Q (> 2000)
- High serial resonant frequency (SRF) and parallel resonant frequency (PRF)
- Quad case sizes 0505 and 1111
- High voltage (250 V for 0505, 1500 V for 1111)

APPLICATIONS

- Telecom
- Medical equipment
- Military communications
- Instrumentation

RESOURCES

- Datasheet: [QUAD HiFREQ - http://www.vishay.com/doc?45221](http://www.vishay.com/doc?45221)
- Collateral/Video: www.vishay.com/videos
- For technical questions, contact mlccrf@vishay.com
- Material categorization: For definitions of compliance, please see <http://www.vishay.com/doc?99912>



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ELECTRICAL SPECIFICATIONS

Note

- Electrical characteristics at 25 °C unless otherwise specified

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

Capacitance Range:

0505: 1.0 pF to 100 pF

1111: 1.0 pF to 1000 pF

Voltage Rating: 25 V_{DC} to 1500 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:

≤ 200 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}: 120 % rated voltage

QUICK REFERENCE DATA

DIELECTRIC	CASE	MAXIMUM VOLTAGE (V)	CAPACITANCE	
			MINIMUM	MAXIMUM
D = NP0	0505	250	1.0 pF	100 pF
	1111	1500	1.0 pF	1000 pF

Note

- For values below 1.0 pF, contact mlccrf@vishay.com

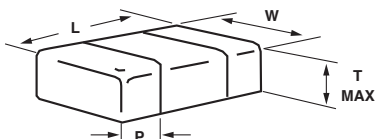
ORDERING INFORMATION

VJ0505	X	1R0	B	X	B	A	C
CASE CODE	DIELECTRIC	CAPACITANCE NOMINAL CODE	CAPACITANCE TOLERANCE	TERMINATION	DC VOLTAGE RATING ⁽¹⁾	MARKING	PACKAGING
0505 1111	D = NP0	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	B = ± 0.10 pF C = ± 0.25 pF D = ± 0.50 pF F = ± 1 % G = ± 2 % J = ± 5 % K = ± 10 % M = ± 20 %	X = Ni barrier 100 % tin plate matte finish L = Ni barrier with tin lead plated finish min. 4 % lead	C = 200 V P = 250 V D = 300 V L = 630 V G = 1000 V R = 1500 V	A = No marking	T = 7" reel/plastic tape C = 7" reel/paper tape J = 7" reel (low quantity) R = 11 1/4"/13" reel/plastic tape P = 11 1/4"/13" reel/paper tape

Notes

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

DIMENSIONS in inches (millimeters)



CASE CODE	STYLE	LENGTH (L)	WIDTH (W)	MAXIMUM THICKNESS (T)	TERMINATIONS PAD (P)	
					MINIMUM	MAXIMUM
0505	VJ0505	0.055 ± 0.025 (1.40 ± 0.64)	0.055 ± 0.015 (1.40 ± 0.38)	0.057 (1.45)	0.004 (0.10)	0.016 (0.41)
1111	VJ1111	0.117 ± 0.028 (2.98 ± 0.70)	0.110 ± 0.030 (2.79 ± 0.76)	0.102 (2.59)	0.012 (0.30)	0.018 (0.46)

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