



MULTILAYER CERAMIC CHIP CAPACITORS

VJ HIFREQ HT

Surface-Mount Multilayer Ceramic Chip Capacitors for High Temperatures Up to 200 °C



KEY BENEFITS

- Case sizes: 0402, 0603, 0805, and 1111
- High frequency / high temperature to 200 °C
- Ultra stable dielectric material
- Non-magnetic copper termination, code “C”
- Lead (Pb)-free terminations code, “X”
- Tin / lead termination code, “L”
- Epoxy for conductive adhesive mounting code, “E”
- Surface-mount, wet build process
- Reliable Noble Metal Electrode (NME) system
- Made with a combination of design, materials, and tight process control to achieve very high field reliability

APPLICATIONS

- RF and microwave
- Broadband communication
- Satellite communication
- Base stations
- Medical and test instrumentation
- Military devices (radar, communication, etc.)
- Wireless devices

RESOURCES

- Datasheet: VJ HIFREQ HT - www.vishay.com/doc?45239
- For technical questions contact MLCC@vishay.com
- Material categorization: for definitions please see - 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 +200 °C

Capacitance Range:

0402: 0.1 pF to 47 pF

0603: 0.1 pF to 270 pF

0805: 0.1 pF to 1000 pF

1111: 0.2 pF to 3300 pF

Voltage Rating: 25 V_{DC} to 500 V_{DC}

Temperature Coefficient of Capacitance (TCC):

C0G (D): 0 ppm/°C ± 30 ppm/°C from -55 °C to +200 °C

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 +200 °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:

≤ 100 V_{DC}-rated: min. 250 % of rated voltage

QUICK REFERENCE DATA				
DIELECTRIC	CASE	MAXIMUM VOLTAGE (V)	CAPACITANCE	
			MINIMUM	MAXIMUM
D = HIFREQ	0402	50	0.1 pF	47 pF
	0603	200	0.1 pF	270 pF
	0805	250	0.1 pF	1.0 nF
	1111	500	0.2 pF	3.3 nF

ORDERING INFORMATION								
VJ0805	D	2R2	V	X	A	A	C	HT
CASE CODE	DIELECTRIC	CAPACITANCE NOMINAL CODE	CAPACITANCE TOLERANCE	TERMINATION	DC VOLTAGE RATING ⁽¹⁾	MARKING	PACKAGING	PROCESS CODE
0402 0603 0805 1111	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: for details see "Selection Chart"	C = non-magnetic copper barrier 100 % tin plate matte finish E = AgPd ⁽²⁾ X = Ni barrier 100 % tin plate matte finish L = Ni barrier with lead plated finish min. 4 % lead	J = 16 V X = 25 V A = 50 V B = 100 V C = 200 V P = 250 V D = 300 V E = 500 V	A = unmarked Q = marked	T = 7" reel / plastic tape C = 7" reel / paper tape O = 7" reel / flamed paper tape J = 7" reel (low quantity) R = 11 1/4 / 13" reel / plastic tape P = 11 1/4 / 13" reel / paper tape I = 11 1/4 / 13" reel / flamed paper tape B = bulk Note "I" and "O" is used for "E" termination code	

Notes

- DC voltage rating should not be exceeded in application
- Termination code "E" is for conductive epoxy assembly

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