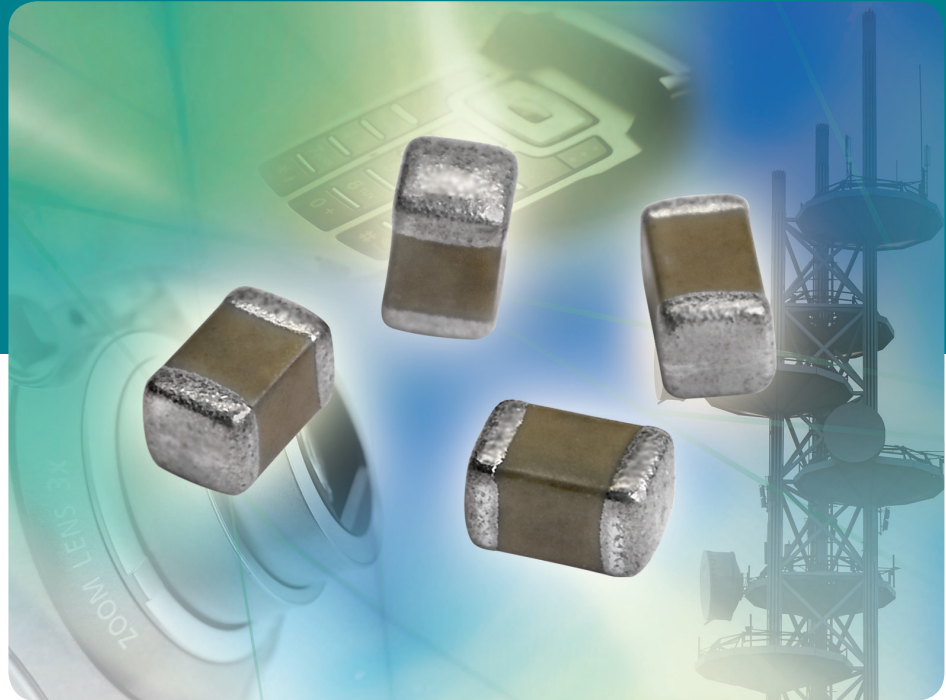




MULTILAYER CERAMIC CHIP CAPACITORS

VJ...W1BC Ultra-Small Series 0201



Surface-Mount MLCCs for Ultra-Small Commodity Applications

KEY BENEFITS

- High capacitance in unit size: 0.5 pF to 100 nF
- High-precision dimensional tolerances: 0.33 mm maximum thickness
- Suitable for use in high-accuracy automatic mounting machines
- Dry sheet manufacturing technology
- 100 % tin terminations

APPLICATIONS

- Miniature microwave modules
- Handheld communication devices: mobile phones, PDAs
- High-frequency circuits

Surface-Mount Multilayer Ceramic Chip Capacitors for Ultra-Small Commodity Applications

FEATURES

- High capacitance in unit size
- High precision dimensional tolerances
- Suitably used in high-accuracy automatic mounting machine
- Dry sheet manufacturing technology
- Noble Metal Electrode system (NME) for COG (NP0)
- Base Metal Electrode system (BME) for X5R, X7R
- Compliant to RoHS directive 2002/95/EC
- Halogen-free according to IEC 61249-2-21 definition

APPLICATIONS

- Miniature microwave module
- Portable equipment - mobile phone, PDA
- High frequency circuits



RoHS COMPLIANT HALOGEN FREE



ELECTRICAL SPECIFICATIONS

Size	COG (NP0)	X7R	X5R
Capacitance	0.5 pF to 100 pF	100 pF to 10 nF	100 pF to 100 nF
Capacitance Tolerance (%)	Cap. ≤ 5 pF: B (± 0.1 pF), C (± 0.25 pF) 5 pF < Cap. < 10 pF: D (± 0.5 pF) Cap. ≥ 10 pF: F (± 1 %), G (2 %), J (5 %), K (± 10 %)	J (± 5 %) K (± 10 %) M (± 20 %)	J (± 5 %) K (± 10 %) M (± 20 %)
Rated Voltage (V _{DC})	16 V, 25 V, 50 V	10 V, 16 V, 50 V	6.3 V, 10 V, 16 V, 50 V
tan δ/Q (1)	Cap. < 30 pF, Q ≥ 400 + 20 C Cap. ≥ 30 pF, Q ≥ 1000	10 V ≤ 5 % 16 V ≤ 3.5 % 50 V ≤ 3.0 %	6.3 V ≤ 10 % 10 V ≤ 5.0 % 16 V ≤ 3.5 % 50 V ≤ 3.0 %
Insulation Resistance at U _i	≥ 10 GΩ	≥ 10 GΩ or R × C ≥ 500 ΩF, whichever is less	- 55 °C to + 125 °C
Operating Temperature			- 55 °C to + 85 °C
Capacitance Change	± 30 ppm		± 15 %
Termination		Ni/Sn lead (Pb)-free termination	

Notes

- (1) Measured at 30 % - 70 % related humidity
NP0: apply 1.0 V_{RMS} ± 0.2 V_{RMS}, 1.0 MHz ± 10 % at the conditions of 25 °C ambient temperature
X7R, X5R: apply 1.0 V_{RMS} ± 0.2 V_{RMS}, 1.0 kHz ± 10 % at the conditions of 25 °C ambient temperature
(2) Preconditioning for X5R, X7R MLCC: Perform a heat treatment at 150 °C ± 10 °C for 1 h, then leave in ambient condition for 24 h ± 2 h before measurement.

ORDERING INFORMATION

SIZE CODE	DIELECTRIC	CAPACITANCE	TOLERANCE	TERMINATION	RATED VOLTAGE	PACKAGING	PROCESS CODE FOR BASIC COMMODITY
VJ0201	A	100	J	X	X	C	W1BC
0201	A = COG (NP0) Y = X7R G = X5R	Two significant digits followed by the number of zeros. R is in place of decimal point. 0R5 = 0.5 pF 1R0 = 1.0 pF 100 = 10 pF	C = ± 0.25 pF D = ± 0.5 pF K = ± 5 % M = ± 20 %	X = Ni Barrier	Y = 6.3 V Q = 10 V J = 16 V X = 25 V A = 50 V	C = 7" reel/paper tape	

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For technical questions, contact mlcc@vishay.com

SELECTION CHART

DIELECTRIC STYLE	COG (NP0)					X7R					X5R				
	16 V	25 V	50 V	10 V	16 V	10 V	16 V	50 V	10 V	16 V	10 V	16 V	10 V	16 V	50 V
EIA CODE	J	X	A	Q	J	Q	A	J	Q	J	Q	J	Q	J	A
VOLTAGE V _{DC}															
VOLTAGE CODE															
CAP. CODE															
0R5															
1R0															
1R2															
1R5															
1R8															
2R2															
2R7															
3R3															
3R9															
4R7															
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333															
473															
683															
104															

• Letters indicate product thickness, see packaging quantities

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