



MULTILAYER CERAMIC CHIP CAPACITORS

VJ...W1BC High Q Dielectric



Surface-Mount MLCC Capacitors for High Q Commodity Applications

Key Benefits

- Ultra-stable Class 1 dielectric
- High Q and low ESR at high frequency
- High capacitance per unit volume
- 100 % tin terminations
- Available in standard sizes: 0402, 0603

APPLICATIONS

- Mobile telecommunications
- WLAN
- RF modules
- Tuners

Surface Mount Multilayer Ceramic Chip Capacitors for High Q Commodity Applications

FEATURES

- Ultra stable class 1 dielectric
- High Q and low ESR at high frequency
- Four standard sizes
- High capacitance per unit volume
- Supplied in tape on reel
- For high frequency applications
- Ni-barrier with 100 % tin terminations
- Dry sheet manufacturing technology
- Noble Metal Electrode system (NME)
- Compliant to RoHS directive 2002/95/EC
- Halogen-free according to IEC 61249-2-21 definition



APPLICATIONS

- Mobile telecommunication
- WLAN
- RF modules
- Tuner



ELECTRICAL SPECIFICATIONS

Note

- Electrical characteristics at 25 °C, 30 % to 70 % related humidity, unless otherwise specified

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

Capacitance Range: 0.5 pF to 3300 pF

Voltage Range: 16 V_{DC} to 100 V_{DC}

Temperature Coefficient of Capacitance (TCC):

± 30 ppm/°C from - 55 °C to + 125 °C

Dissipation Factor:

Cap. < 30 pF: Q ≥ 400 + 20 C

Cap. ≥ 30 pF: Q ≥ 1000

Test Conditions for Capacitance and DF Measurement

Cap. ≤ 1000 pF 1.0 V_{RMS} ± 0.2 V_{RMS}, 1 MHz ± 10 %

Cap. > 1000 pF 1.0 V_{RMS} ± 0.2 V_{RMS}, 1 kHz ± 10 %

Aging Rate: 0 % maximum per decade

Insulation Resistance (IR): after 120 s at U_R (DC)

≥ 10 GΩ or R x C ≥ 500 Ω x F whichever is less

Dielectric Strength Test:

This is the maximum voltage the capacitors are tested for 1 s to 5 s period and the charge/discharge current does not exceed 50 mA

≤ 100 V_{DC}; DWV at 250 % of rated voltage

ORDERING INFORMATION

VJ0402	Q	101	F	X	J	C	W1BC
SIZE	DIELECTRIC	CAPACITANCE	TOLERANCE	TERMINATION	VOLTAGE	PACKAGING	PROCESS CODE FOR BASIC COMMODITY
0402	Q = High Q	Two significant digits followed by the number of zeros 1R0 = 1.0 pF 101 = 100 pF	Cap. value ≤ 5 pF B = ± 0.10 pF C = ± 0.25 pF 5 pF > Cap. value < 10 pF C = ± 0.25 pF D = ± 0.50 pF Cap. value ≥ 10 pF F = ± 1 % G = ± 2 % J = ± 5 %	X = Ni barrier 100 % tin termination	J = 16 V X = 25 V A = 50 V B = 100 V	C = 7" reel/paper P = 13" reel/paper	

SELECTION CHART		HIGH Q											
DIELECTRIC	STYLE	VJ0402					VJ0603						
EIA CODE	VOLTAGE (V _{DC})	16 V	25 V	50 V	100 V	16 V	25 V	50 V	100 V	16 V	25 V	50 V	100 V
VOLTAGE CODE	CAP. CODE	J	X	A	B	J	X	A	B	J	X	A	B
0402	0.5 pF		N	N	N		N	N	N		N	N	N
0603	1.0 pF		N	N	N		N	N	N		N	N	N
	1.2 pF		N	N	N		N	N	N		N	N	N
	1.5 pF		N	N	N		N	N	N		N	N	N
	1.8 pF		N	N	N		N	N	N		N	N	N
	2.2 pF		N	N	N		N	N	N		N	N	N
	2.7 pF		N	N	N		N	N	N		N	N	N
	3.3 pF		N	N	N		N	N	N		N	N	N
	3.9 pF		N	N	N		N	N	N		N	N	N
	4.7 pF		N	N	N		N	N	N		N	N	N
	5.6 pF		N	N	N		N	N	N		N	N	N
	6.8 pF		N	N	N		N	N	N		N	N	N
	8.2 pF		N	N	N		N	N	N		N	N	N
	10 pF		N	N	N		N	N	N		N	N	N
	12 pF		N	N	N		N	N	N		N	N	N
	15 pF		N	N	N		N	N	N		N	N	N
	18 pF		N	N	N		N	N	N		N	N	N
	22 pF		N	N	N		N	N	N		N	N	N
	27 pF		N	N	N		N	N	N		N	N	N
	33 pF		N	N	N		N	N	N		N	N	N
	39 pF		N	N	N		N	N	N		N	N	N
	47 pF		N	N	N		N	N	N		N	N	N
	56 pF		N	N	N		N	N	N		N	N	N
	68 pF		N	N	N		N	N	N		N	N	N
	82 pF		N	N	N		N	N	N		N	N	N
	100 pF		N	N	N		N	N	N		N	N	N
	120 pF		N	N	N		N	N	N		N	N	N
	150 pF		N	N	N		N	N	N		N	N	N
	180 pF		N	N	N		N	N	N		N	N	N
	220 pF		N	N	N		N	N	N		N	N	N
	270 pF		N	N	N		N	N	N		N	N	N
	330 pF		N	N	N		N	N	N		N	N	N
	390 pF		N	N	N		N	N	N		N	N	N
	470 pF		N	N	N		N	N	N		N	N	N
	560 pF		N	N	N		N	N	N		N	N	N
	680 pF		N	N	N		N	N	N		N	N	N
	820 pF		N	N	N		N	N	N		N	N	N
	101 pF		N	N	N		N	N	N		N	N	N
	121 pF		N	N	N		N	N	N		N	N	N
	151 pF		N	N	N		N	N	N		N	N	N
	181 pF		N	N	N		N	N	N		N	N	N
	221 pF		N	N	N		N	N	N		N	N	N
	271 pF		N	N	N		N	N	N		N	N	N
	331 pF		N	N	N		N	N	N		N	N	N
	391 pF		N	N	N		N	N	N		N	N	N
	471 pF		N	N	N		N	N	N		N	N	N
	561 pF		N	N	N		N	N	N		N	N	N
	681 pF		N	N	N		N	N	N		N	N	N
	821 pF		N	N	N		N	N	N		N	N	N
	102 pF		N	N	N		N	N	N		N	N	N
	122 pF		N	N	N		N	N	N	X	N	N	N
	152 pF		N	N	N		N	N	N	X	N	N	N
	182 pF		N	N	N		N	N	N	X	N	N	N
	222 pF		N	N	N		N	N	N	X	N	N	N
	272 pF		N	N	N		N	N	N	X	N	N	N
	332 pF		N	N	N		N	N	N	X	N	N	N
	392 pF		N	N	N		N	N	N	X	N	N	N
	472 pF		N	N	N		N	N	N	X	N	N	N
	562 pF		N	N	N		N	N	N	X	N	N	N
	682 pF		N	N	N		N	N	N	X	N	N	N
	822 pF		N	N	N		N	N	N	X	N	N	N
	103 pF		N	N	N		N	N	N	X	N	N	N

Revision 05-Jul-10

Note

- Letters indicate product thickness, see packaging quantities

Build Vishay into your Design

DISCLAIMER All product specifications and data are subject to change without notice. Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product. Vishay disclaims any and all liability arising out of the use or application of any product described herein or any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed herein, which apply to these products. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications. Product names and markings noted herein may be trademarks of their respective owners.

For technical questions, contact mlcc@vishay.com