

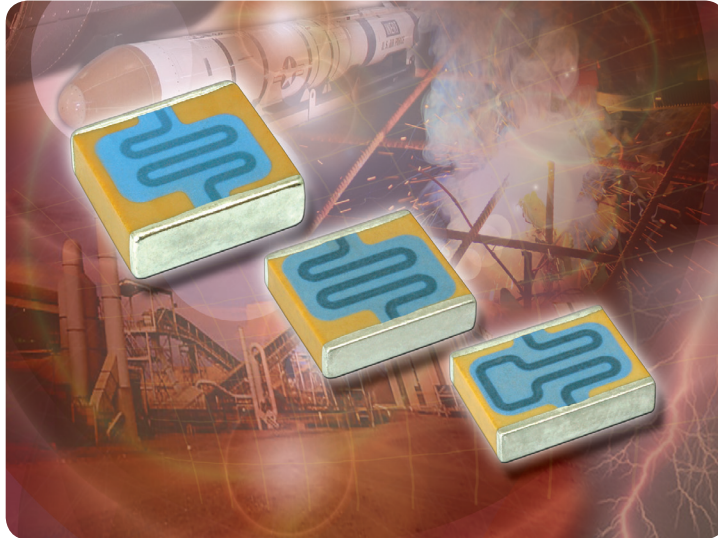


# MULTILAYER CERAMIC CHIP CAPACITORS

## VJ Controlled Discharge Capacitor (CDC) Series

Capacitors - For High Pulse Current Applications

### Surface-Mount Multilayer Ceramic Chip Capacitors with Integrated Resistor for High Pulse Current Applications



#### KEY BENEFITS

- Voltage rating up to 1500 V
- Capacitance value up to 0.56  $\mu\text{F}$
- Low electrostrictive ceramic formulation
- Integrated resistor on the surface of the capacitor
- Available with tin/lead barrier termination (termination code "L")
- Wet build process with reliable Noble Metal Electrode (NME) system
- Halogen-free according to IEC 61249-2-21 definition

#### APPLICATIONS

- Detonation devices
- Down hole drilling
- Electronic fusing

#### END PRODUCTS

- Military
- Avionic and satellite systems

#### RESOURCES

- Datasheet: VJ Controlled Discharge Capacitor (CDC) - <http://www.vishay.com/doc?45203>
- For technical questions contact [mlcc@vishay.com](mailto:mlcc@vishay.com)

One of the World's Largest Manufacturers of  
Discrete Semiconductors and Passive Components



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#### ELECTRICAL SPECIFICATIONS

##### Note

- Electrical characteristics at + 25 °C unless otherwise specified



Available  
HALOGEN  
FREE

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

**Capacitance Range:** 33 nF to 560 nF

**Voltage Range:** 1000 V<sub>DC</sub> to 1500 V<sub>DC</sub>

##### Temperature Coefficient of Capacitance (TCC):

X5P: ± 10 % from - 55 °C to + 85 °C, with 0 V<sub>DC</sub> applied  
X7R: ± 15 % from - 55 °C to + 125 °C, with 0 V<sub>DC</sub> applied

**Parallel Resistor:** 500 MΩ ± 30 %

##### Dissipation Factor (DF):

2.5 % maximum at 1.0 V<sub>rms</sub> and 1 kHz

**Aging Rate:** 1 % maximum per decade

##### Insulation Resistance (IR):

At + 25 °C without resistor: 100 000 MΩ minimum or 1000 ΩF, whichever is less.

At + 125 °C without resistor: 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:

1000 V<sub>DC</sub>/1500 V<sub>DC</sub>-rated: 120 % of rated voltage

#### SELECTION CHART

DIELECTRIC		X7R (X5P)					
STYLE		VJ3040 (1)		VJ3640 (1)		VJ4044 (1)	
EIA CODE		-	-	-	-	-	-
VOLTAGE (V <sub>DC</sub> )		1000	1500	1000	1500	1000	1500
VOLTAGE CODE		G	R	G	R	G	R
CAP. CODE	CAP.						
223	0.022 μF						
273	0.027 μF						
333	0.033 μF		•				
393	0.039 μF		•				
473	0.047 μF		•		•		
563	0.056 μF	•	•		•		
683	0.068 μF	•	•		•		
823	0.082 μF	•	•		•		
104	0.10 μF	•	•	•	•		•
124	0.12 μF	•	•	•	•		•
154	0.15 μF	•		•	•	•	•
184	0.18 μF	•		•	•	•	•
224	0.22 μF	•		•	•	•	•
274	0.27 μF			•		•	•
334	0.33 μF			•		•	•
394	0.39 μF					•	
474	0.47 μF					•	
564	0.56 μF					•	
684	0.68 μF						
824	0.82 μF						
105	1.0 μF						
125	1.2 μF						
155	1.5 μF						
185	1.8 μF						
225	2.2 μF						
275	2.7 μF						
335	3.3 μF						

##### Notes

(1) See soldering recommendations: [www.vishay.com/doc/245034](http://www.vishay.com/doc/245034)

- Plastic tape

#### ORDERING INFORMATION

VJ3640 (3)	Y	184	K	X	R	A	T	8R (2)
CASE CODE	DIELECTRIC	CAPACITANCE NOMINAL CODE	CAPACITANCE TOLERANCE	TERMINATION	DC VOLTAGE RATING (1)	MARKING	PACKAGING	PROCESS CODE
3040 3640 4044	Y = X7R (X5P)	Expressed in picofarads (pF). The first two digits are significant, the third is a multiplier. <b>Examples:</b> 184 = 180 nF 334 = 330 nF	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	G = 1000 V R = 1500 V	A = Unmarked	T = 7" reel/plastic tape	

##### Notes

(1) DC voltage rating should not be exceeded in application. Other application factors may affect the MLCC performance.

Consult for questions: [mlcc@vishay.com](mailto:mlcc@vishay.com)

(2) Process Code must be added to control special requirements

(3) Size designator may be replaced by four digit drawing number used to control non-standard products and/or special requirements

#### DIMENSIONS in inches [millimeters]

EIA STYLE	PART ORDERING NUMBER	LENGTH (L)	WIDTH (W)	MAXIMUM THICKNESS (T)	TERMINATION (P)	
					MIN.	MAX.
-	VJ3040	0.300 ± 0.015 [7.62 ± 0.38]	0.400 ± 0.015 [0.20 ± 0.38]	0.100 [2.54]	0.010 [0.25]	0.030 [0.76]
-	VJ3640	0.360 ± 0.015 [9.14 ± 0.38]	0.400 ± 0.015 [10.20 ± 0.38]	0.086 [2.18]	0.010 [0.25]	0.030 [0.76]
-	VJ4044	0.400 ± 0.015 [10.16 ± 0.38]	0.440 ± 0.015 [11.17 ± 0.38]	0.120 [3.05]	0.010 [0.25]	0.030 [0.76]

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