

## Multilayer Ceramic Chip Capacitors

# MVC Series – Middle Voltage NP0 and X7R Capacitors [General Purpose – 100Vdc to 630Vdc]



**Holy Stone** middle voltage products are designed and manufactured to meet the general requirements of international standards. The product offering is well suited for commercial and industrial applications and includes NP0 (C0G) and X7R characteristics in sizes 0603 to 2225 and with working voltages up to 630Vdc.

### ◆ Features

- Special internal electrode design offers the highest voltage rating
- Surface mount suitable for wave and reflow soldering
- High reliability
- RoHS compliant

### ◆ Applications

- Suitable for LAN/WLAN interface, Back-Lighting Inverter, DC-DC Converters, Ballast, Modems and Power Supplies.

### ◆ Summary of Specifications

Operation Temperature	-55 °C ~ +125 °C
Rated Voltage	100Vdc to 630Vdc
Temperature Coefficient	NP0 : $\leq \pm 30\text{ppm}/^{\circ}\text{C}$ , -55 °C ~ +125 °C (EIA Class I ) X7R : $\leq \pm 15\%$ , -55 °C ~ +125 °C (EIA Class II )
Dissipation Factor	NP0 : Q $\geq 1000$ , X7R : D.F. $\leq 2.5\%$
Insulation Resistance	10GΩ or 500/CΩ whichever is smaller
Aging	NP0: 0% , X7R : Typically 1.0% per decade of time
Dielectric Strength	100V $\leq V < 500V$ : 200% Rated Voltage 500V $\leq V < 1000V$ : 150% Rated Voltage

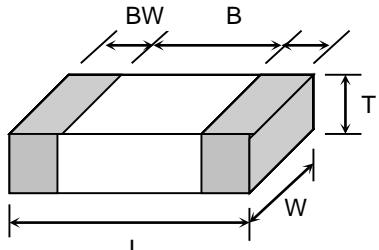
### ◆ How To Order

C      1206      X      102      K      631      T      E      X      Y

Product Code C: MLCC (Multilayer Ceramic Capacitor)	Chip Size Ex.: 0603 0805 1206 1210 1808 1812 1825 2220 2225	Dielectric Ex.: N: NP0 X: X7R	Capacitance Unit : pF Ex.: 2R0:2.0pF 100:10x10 <sup>0</sup> 471:47x10 <sup>1</sup> 102:10x10 <sup>2</sup>	Tolerance Ex.: C:+/-0.25pF D:+/-0.50pF J:+/- 5% K:+/-10% M:+/-20%	Rated Voltage Ex.: 101: 100Vdc 251: 250Vdc 501: 500Vdc 631: 630Vdc	Packaging Ex. T: T/R 7" R: T/R 13" B: Bulk	Thickness (mm) (Optional) Ex: E:1.60 $\pm 0.20$ F:2.0 $\pm 0.20$	Special Requirement (Optional) Ex.: O: Arc Prevention Coating X: Polymer Termination (Super Term) Z: Arc Prevention and Polymer Temination	Suffix Code Y

## ◆ Dimensions

Unit : mm [inches]					
TYPE	L	W	T (max)	B (min)	BW (min)
0603	1.60±0.10 [.063±.004]	0.80±0.10 [.031±.004]	1.00 [.039]	0.40 [.016]	0.15 [.006]
0805	2.00±0.20 [.079±.012]	1.25±0.20 [.049±.012]	1.45 [.057]	0.70 [.028]	0.20 [.008]
1206	3.20±0.30 [.126±.012]	1.60±0.20 [.063±.012]	1.80 [.071]	1.50 [.059]	0.30 [.012]
1210	3.20±0.30 [.126±.012]	2.50±0.20 [.098±.012]	2.60 [.102]	1.60 [.059]	0.30 [.012]
1808	4.60±0.30 [.181±.012]	2.00±0.20 [.079±.008]	2.20 [.087]	2.50 [.098]	0.30 [.012]
1812	4.60±0.30 [.181±.012]	3.20±0.30 [.126±.012]	3.00 [.118]	2.50 [.098]	0.30 [.012]
1825	4.60±0.30 [.181±.012]	6.35±0.40 [.250±.016]	3.00 [.118]	2.50 [.098]	0.30 [.012]
2220	5.70±0.40 [.220±.016]	5.00±0.40 [.197±.016]	3.00 [.118]	3.50 [.137]	0.30 [.012]
2225	5.70±0.40 [.220±.016]	6.35±0.40 [.250±.016]	3.00 [.118]	3.50 [.137]	0.30 [.012]



#### ◆ Capacitance Range – NP0 / 100Vdc to 630Vdc

- The yellow indication denotes values that are under development. Please contact Holy Stone office for further details
  - Other dimensions, capacitance values and voltages ratings are available on request. Please contact Holy Stone.

◆ Capacitance Range – NP0 / 100Vdc to 630Vdc

Temperature Characteristic	Size	Rated Voltage	Capacitance Range																														
			2R0	3R3	3R9	5R0	8R2	100	120	150	180	220	270	330	390	470	560	680	820	101	121	151	181	221	271	331	391	471	561	681	821		
NP0	2220	100V																		D	D	D	D	D	D	D	D	D	D	D	D	D	E
		200V																		D	D	D	D	D	D	D	D	D	D	D	D	D	E
		250V																		D	D	D	D	D	D	D	D	D	D	D	D	D	E
		500V																		D	D	D	D	D	D	D	D	D	D	D	D	D	E
		630V																		D	D	D	D	D	D	D	D	D	D	D	D	D	E
		1KV																		D	D	D	D	D	D	D	D	D	D	D	D	D	F
	1825	100V																		D	D	D	D	D	D	D	D	D	D	D	D	D	E
		200V																		D	D	D	D	D	D	D	D	D	D	D	D	D	F
		250V																		D	D	D	D	D	D	D	D	D	D	D	D	D	G
		500V																		D	D	D	D	D	D	D	D	D	D	D	D	D	G
		630V																		D	D	D	D	D	D	D	D	D	D	D	D	D	G
	2225	1KV																		D	D	D	D	D	D	D	D	D	D	D	D	D	G
		100V																		D	D	D	D	D	D	D	D	D	D	D	D	D	H
		200V																		D	D	D	D	D	D	D	D	D	D	D	D	D	H
		250V																		D	D	D	D	D	D	D	D	D	D	D	D	D	H
		500V																		D	D	D	D	D	D	D	D	D	D	D	D	D	H
		630V																		D	D	D	D	D	D	D	D	D	D	D	D	D	H
		1KV																		D	D	D	D	D	D	D	D	D	D	D	D	D	H

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◆ Thickness Specification

Symbol Code	S	O	A	B	C	D	E	F	G	H
Thickness(mm)	0.3±0.03	0.5±0.05	0.6±0.1	0.85±0.15	1.0+0.1/-0.05	1.25±0.20	1.6±0.2	2.0±0.2	2.4±0.2	2.8±0.2

#### ◆ Capacitance Range – X7R / 100Vdc to 630Vdc

- The yellow indication denotes values that are under development. Please contact Holy Stone office for further details
  - Other dimensions, capacitance values and voltages ratings are available on request. Please contact Holy Stone.

#### ◆ Thickness Specification

Symbol Code	S	O	A	B	C	D	E	F	G	H
Thickness (mm)	0.3+0.03	0.5+0.05	0.6+0.1	0.85+0.15	1.0+0.1/-0.05	1.25+0.20	1.6+0.2	2.0+0.2	2.4+0.2	2.8+0.2

