Multilayer Ceramic Capacitors

[High Voltage Capacitors – NPO, X7R 1KVdc to 5KVdc]

HVC Series

Holy Stone high 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 0805 to 2225 and with working voltages from 1KV up to 5KV.

◆ 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.
- ❑ SiC & GaN systems, Snubber, Resonant Circuit (LLC, Wireless Charging, etc.)

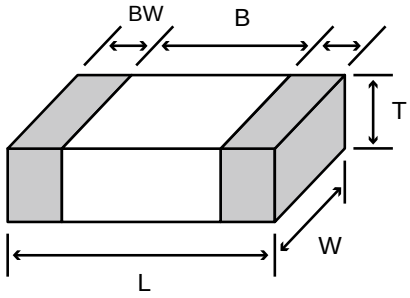
◆ Summary of Specifications

Operation Temperature	-55 ℃ to +125 ℃
Rated Voltage	1KVdc to 5KVdc
Temperature Coefficient	NP0 : ≤ ± 30ppm/ ℃ , -55 ℃ to +125 ℃ (EIA Class Ⅰ)
	X7R : ≤ ± 15% , -55 ℃ to +125 ℃ (EIA Class Ⅱ)
Dissipation Factor	NP0 : More than 30pF : Q ≧1000 30pF & below : Q≧400+20C (C : Capacitance , pF) X7R : D.F.≦ 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 ≦ V < 500V : 200% Rated Voltage
	500V ≦ V < 1000V : 150% Rated Voltage
	1000V≦ V : 120% Rated Voltage

◆ How To Order

C	2220	N	333	J	102	T	I	X	Y
Product Code C: MLCC (Multilayer Ceramic Capacitor)	**Chip Size** Ex.: 0805 1206 1210 1808 1812 1825 2220 2225	**Dielectric** Ex.: N: NP0 X: X7R	**Capacitance Unit : pF** Ex.: 2R0:2.0pF 100:10x10⁰ 471:47x10¹ 102:10x10²	**Tolerance** Ex.: C: +/-0.25pF D: +/-0.50pF J: +/- 5% K: +/-10% M: +/-20%	**Rated Voltage** Ex.: 102: 1000Vdc 202: 2000Vdc 302: 3000Vdc 402: 4000Vdc 502: 5000Vdc	**Packaging** Ex.: T: T&R 7" R: T&R 13" B: Bulk	**Thickness (mm) (Optional)** Ex: E:1.60±0.20 F:2.0±0.20 I :3.2±0.20	**Special Requirement (Optional)** Ex.: O: Arc Prevention Coating X: Polymer Termination (Super Term) Z: Coating & Polymer Termination	**Suffix Code** Y

◆ Dimensions



Unit : mm [inches]

SIZE	L	W	T (max)	B (min)	BW (min)
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]	3.40 [.118]	3.50 [.137]	0.30 [.012]
2225	5.70±0.40 [.220±.016]	6.35±0.40 [.250±.016]	3.40 [.118]	3.50 [.137]	0.30 [.012]

◆ Capacitance Range – NP0 / 1KVdc to 2KVdc

Temperature Characteristic	Size	Rated Voltage	Capacitance Range (2R0 3R3 3R9 5R0 8R2 100 120 150 180 220 270 330 390 470 560 680 820 101 121 151 181 221 271 331 391 471 561 681 821 102 122 152 182 222 272 332 392 472 562 682 822 103 123 153 183 223 273 333 393 473 563 683 104)
NP0	0805	1KV	B B B B B B B B B C C C C C C C C C C C C C C C C C D D
	1206	1KV	C C C B B B B B B B B B B B B B B B B B B C D D D D E E B B C D D D
		2KV	D D D D D D D D D D D D D D D D D D D D D D D D D D E E
	1210	1KV	D D D D D D D D D D D D D D D D D D D D D D D D D D D E E E E F G D D E E F F G G G
		2KV	D D D D D D D D D
	1808	1KV	D D D D D D D D D D D D D D D D D D D D D D D D D D D D D D D E E
		2KV	D D D D D D D D D D D D D D D D D D D D D D D D D D D E E F F F
	1812	1KV	D D D D D D D D D D D D D D D D D D D D D D D D D D D D E E F F F F F F F F G G G G G G G
		2KV	D D D D D D D D D D D D D D D D D D D D D D D D E E E F F F F F
	2220	1KV	D D D D D D D D D D D D D D D D D E E F G G G I I
		2KV	D D D D D D D D D D D E E E F F G
	2225	1KV	F F F
		2KV	D D D D D D D D D D D E E E G G G H I

◆ Capacitance Range – NP0 / 3KVdc to 5KVdc

Temperature Characteristic	Size	Rated Voltage	Capacitance Range (2R0 3R3 3R9 5R0 8R0 8R2 100 120 150 180 220 270 330 390 470 560 680 820 101 121 151 181 221 271 331 391 471 561 681 821 102 122 152 182 222)
NP0	1206	3KV	D D D D D D D D D D D E E E E
	1808	3KV	D D D D D D D D D D D D D D D D D D D D D E E F F F F F F F F F F
		5KV	F F F F F F F F F F F F F F F
	1812	3KV	D D D D D D D D D D D D D D D D D D D D E E E E E E E E E E F F G H
		4KV	D D D D D D D D D D D D D E E E F G
	2208	3KV	F F F F F F F F F F F F F F F
	2211	3KV	F F F F F F F F F F F F F F F F F
	2220	3KV	D D D D D D D D D D D E E E E E E E E E E E E E E E E E F F F F F
		5KV	D D D D D D D D D D D E E E E E E E E E E
	2225	5KV	D

- ***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	B	C	D	E	F	G	H	I
Thickness(mm)	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	3.2±0.2

◆ Capacitance Range – X7R / 1KVdc

Temperature Characteristic	Size	Rated Voltage	Capacitance Range
X7R	0805	1KV	B B B B B B B B B B B B B B B
	1206	1KV	B B B B B B B B B B B B B B B B B B B B B C C D E E E
	1210	1KV	C C C D D D D D E F F G
	1808	1KV	D D D D D D D D D D D D D D D D D D D D
	1812	1KV	D D D D D D D D D D D D D D D D D D D D D D D D D E F F G G
	2220	1KV	D D D D D D D D D D D D D D D D D D D D D D D D D E E F F F
	1825	1KV	D D D D D D D D D D D D D D D D D D D E E E E G G
	2225	1KV	D D D D D D D D D D D D D D D D D D D D D D D D D

◆ Capacitance Range – X7R / 1.5KV to 2.5KV

Temperature Characteristic	Size	Rated Voltage	Capacitance Range
X7R	1206	1.5KV	B B B B B B B B B B B C C C C C C C C D
		2KV	B B B D D D D D D D B C D D D D D E E
		2.5KV	B B B B B B B B B B B C C C D D E E E
	1210	2KV	C C C C C C C C C C C C C D D E E E E E F F G
	1808	2KV	D D D D D D D D D D D D D D D D D D D D D D D E E
	1812	2KV	D D D D D D D D D D D D D D D D D D D D D D D E E E F F G H
	1825	2KV	D D D D D D D D D E E E E E F F G G
	2220	2KV	D D D D D D D D D D D D D D D D D D D D D E E E E F F G
	2225	2KV	D D D D D D D D D D D D D D D D D D D D D D E E E E

◆ Capacitance Range – X7R / 3KVdc to 5KVdc

Temperature Characteristic	Size	Rated Voltage	Capacitance Range
X7R	1206	3KV	B B B B B C C C D D D
	1808	3KV	D D D D D D D D D D D D D D D D D D E E E F F
		4KV	D D D D D E E E E F F F
	1812	3KV	D D D D D D D D D D D D D D D D D D E E E E F F
	1825	3KV	D D D D D D D D D D D D D D D D D D D E E E F G
	2220	3KV	D D D D D D D D D D D D D D D D D D D E E
	2220	4KV	D D D D E E E E F F G H
	2220	5KV	D D D D D D D D D D D D E E E F F F
	2225	3KV	D D D D D D D D D D E E E E
	2225	4KV	D D E E E

◆ Thickness Specification

Symbol Code	B	C	D	E	F	G	H	I
Thickness(mm)	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	3.2±0.2

▪ Specifications & Test Conditions please see P47~P50