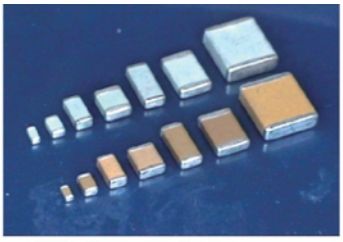
Multilayer Ceramic Chip Capacitors

[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.

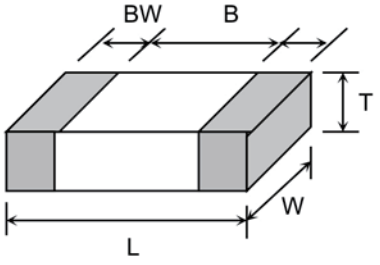
◆ Summary of Specifications

Operation Temperature	-55 ℃ ~ +125 ℃
Rated Voltage	1KVdc ~ 5KVdc
Temperature Coefficient	NP0 : ≤ ± 30ppm/ ℃ , -55 ℃ ~ +125 ℃ (EIA Class I)
	X7R : ≤ ± 15% , -55 ℃ ~ +125 ℃ (EIA Class Ⅱ)
Dissipation Factor	NP0 : Q≧1000 , 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	1206	X	102	K	202	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 100:10×10^0 471:47×10^1 102:10×10^2	**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	**Special Requirement (Optional)** Ex.: O: Arc Prevention Coating X: Polymer Termination (Super Term) Z: Z: Coating & Polymer Termination	**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]	3.40 [.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

Capacitance Range

Temperature Characteristic	Size	Rated Voltage	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
NP0	0805	1KV						B	B	B	B	B	B	B	B	C	C	C	C	D	D	D																																
	1206	1KV						C	C	C	B	B	B	B	B	B	B	B	B	B	B	B	B	B	C	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	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	E	E	E	E	F	G																
	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	E	E	E	E	E	E	E	E	E	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	E	E	F	G	H																								
	1812	1KV																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												
		2KV																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	E		E	F	G	I							
	2225	1KV																																										F	F	F							

◆ Capacitance Range – NP0 / 3KVdc to 5KVdc

Capacitance Range

Temperature Characteristic	Size	Rated Voltage	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	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	E	E	E	E	E	E	E	E	E	E	F	F	G	H			
	2208	5KV	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F																				
	2211	5KV	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F																		
	2220	5KV	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E	E															

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

◆ Capacitance Range – X7R / 1KVdc

Temperature Characteristic	Size	Rated Voltage	101	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	823	104	124	154	184	224	274	334	394	474	564	684
X7R	0805	1KV		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	C	C	D	E	E	E																				
	1210	1KV																			C	C	C	D	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	E	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	E	F	F	G	G	G	H									
	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	E	E	F	F	F							
	1825	1KV																	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E												
	2225	1KV																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	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	823	104
X7R	1206	1.5KV	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	C	D	D	E		E												
		2KV	B	B	B	D	D	D	D	D	D	D	B	C	D	D	D	D	D	E	E	E	D/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	D	D	E	E	E	E	F	F	E												
	1808	2KV	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	E	E	E	F	F	G	H						
	1825	2KV																	D	D	D	D	D	D	D	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	E	E	E	F	F	G	H			
	2225	2KV											D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E/F	F	G	H	I

◆ Capacitance Range – X7R / 3KVdc to 5KVdc

Temperature Characteristic	Size	Rated Voltage	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	823
X7R	1206	3KV	B	B	B	B	B	C	C	C	D	D	D	E																						
	1808	3KV	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E																
		4KV	D	D	D	D	D	E	E	E	F	F	F																							
	1812	3KV			D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	F	F											
	1825	3KV									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	E	E	E	F	G								
	2220	4KV											D	D	D	D	E	E	E	E	F	F	F	G	H											
	2220	5KV	D	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	F	G					
	2225	4KV															D	D	E	E	E															

◆ Thickness Specification

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

■ Specifications & Test Conditions please see P49~P52