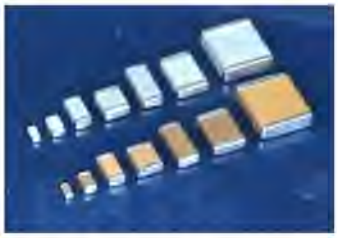
Multilayer Ceramic Capacitors

[Middle Voltage Capacitors – NPO,X7R,100Vdc to 630Vdc]



MVC 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 0402 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.
- ❑ SiC & GaN systems, Snubber, Resonant Circuit (LLC, Wireless Charging, etc.)

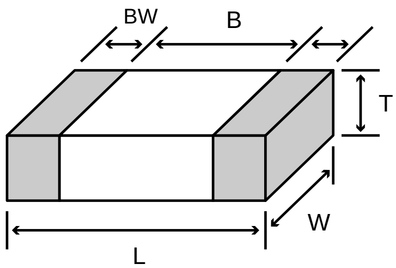
◆ Summary of Specifications

Operation Temperature	-55 ℃ to +125 ℃
Rated Voltage	100Vdc to 630Vdc
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 : 100V : 5% (C≧0.1uF) 100V : 2.5% (C＜0.1uF) Other Voltage : 2.5% max
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	N	103	J	631	T	E	X	Y
Product Code	**Chip Size**	**Dielectric**	**Capacitance Unit : pF**	**Tolerance**	**Rated Voltage**	**Packaging**	**Thickness (mm) (Optional)**	**Special Requirement (Optional)**	**Suffix Code**
C: MLCC (Multilayer Ceramic Capacitor)	Ex.: 0402 0603 0805 1206 1210 1808 1812 1825 2220 2225	Ex.: N: NP0 X: X7R	Ex.: 2R0:2.0pF 100:10x10^0 471:47x10^1 102:10x10^2	Ex.: C:+/-0.25pF D:+/-0.50pF J :+/- 5% K :+/-10% M:+/-20%	Ex.: 101: 100Vdc 251: 250Vdc 501: 500Vdc 631: 630Vdc	Ex. : T: T&R 7" R: T&R 13" B: Bulk	Ex: E:1.60±0.20 F:2.0±0.20	Ex.: O: Arc Prevention Coating X: Polymer Termination (Super Term) Z: Coating & Polymer Termination	Y

◆ Dimensions



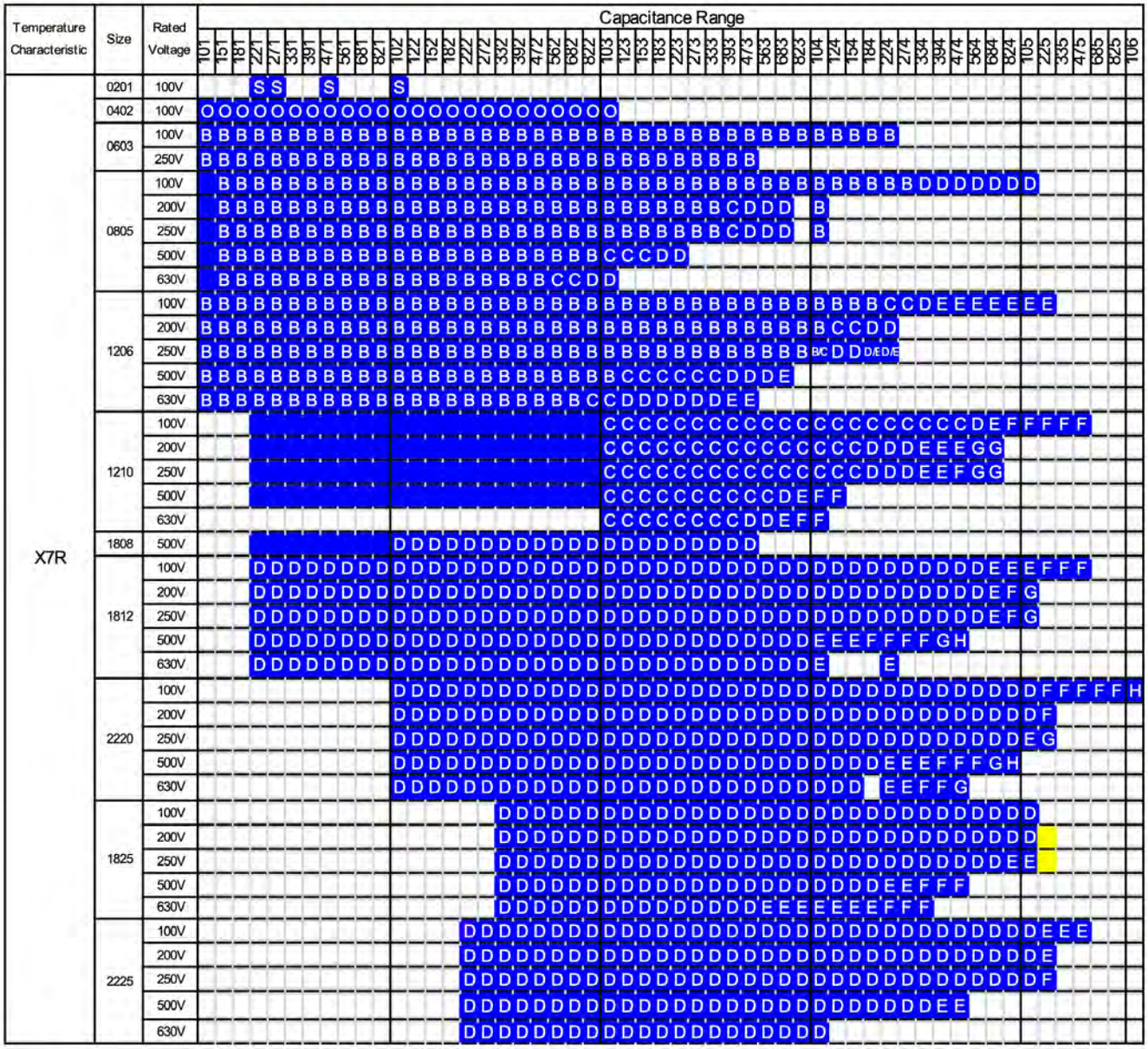
Unit : mm [inches]

SIZE	L	W	T (max)	B (min)	BW (min)
0402	1.00±0.05 [.039±0.02]	0.5±0.05 [.020 ±0.02]	0.55 [.022]	0.30 [.012]	0.15 [.006]
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]	3.40 [.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

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	0402	250V	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O																															
	0603	100V	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B																
		200V	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B																										
		250V	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B																										
	0805	100V	B	B	B	B	B	A	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	C	D	D	D	D	D	D	D	D	D										
		200V	B	B	B	B	B	A	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	C	D	D	D																
		250V	B	B	B	B	B	A	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	C	D	D	D	D															
		500V	B	B	B	B	B	A	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	C	C	D	D	D	D																				
	1206	100V	C	C	C	C	C	C	C	C	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	C	D	D	D	E	E	E	E	E	E	E	E
		200V	C	C	C	C	C	C	C	C	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C	D	D	E	E	E	E	E	E							
		250V	C	C	C	C	C	C	C	C	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C	D	D	E	E	E	E	E	E							
		500V						C	C	C	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	C	D	D	E	E	E	E	E	E	E										
		630V						C	C	C	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	C	D	D	E	E	E	E	E	E	E										
	1210	100V						C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	D	D	D	E	E	F	F	F
		200V						C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	D	D	E	E	E	F	F			
		250V						C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	D	D	E	E	E	F	F			
		500V						C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	D	D	D	E	E	F	F	G	G	G	G	G	G					
		630V						C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	D	D	D	E	E	F	F	G	G	G	G	G	G					
	1808	500V	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	D	E	E																			
		630V	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	D	E	E																			
	1812	100V																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	D	D	D	D	D	D	E
		200V																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	E	E	E	E	E
		250V																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	E	E	E	E	E
		500V																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					
		630V																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					
	1825	250V																																				D	D	D	D	D	E	E	E	E	E	F	F	F	F	F	F	G
		500V																																								D	E	E	E	E	F	F	F	F	G	G	G	G
		630V																																								D	E	E	E	E	F	F	G	G	G			
	2220	100V																																								D	D	D	D	D	D	D						
		250V																																													D	E	E					
		500V																													D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	F	F						
		630V																																													F							
	2225	100V																																				D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
		250V																																				D	D	D	D	D	D	D	D	D	D	D						
		500V																																									E	E	F									

◆ 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	I
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	3.2±0.2