Holy Stone Enterprise Co., Ltd.

CERAMIC CAPACITOR CATALOG

HCP Series

Commerical grade

Low DC Bias MLCC

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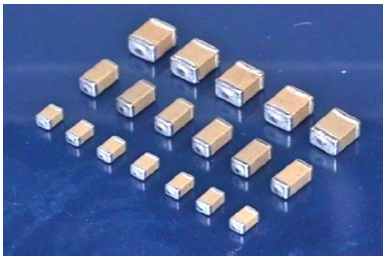
Holy Stone

HCP Series

Multilayer Ceramic Chip Capacitors
250V ~ 630V High Voltage & Low DC Bias



Holy Stone high voltage products are designed and manufactured to meet the general requirements of international standards. The X7P product offering is ideally suited for LED driver, lighting, power adapter and USB charger applications where effective capacitance at working voltage is critical to circuit design.

◆ Features

+/-10% Temperature Coefficient from -55° C to +125° C
Low DC Bias characteristics
Competitive price compared to X7T dielectric
1206, 1210, 1812, 2220 sizes, other sizes and dielectric available upon request

◆ Applications

- ❑ LED Drivers
- ❑ Power Adapters/USB Chargers
- ❑ Lighting
- ❑ Power Supplies
- ❑ General telecommunications equipment

◆ Summary of Specifications

Operation Temperature	-55 to +125 ℃
Rated Voltage	250Vdc ~630Vdc
Temperature Coefficient	± 10% at -55℃~+125℃
Capacitance Range	10nF~0.68uF ,other capacitance values available upon request
Dissipation Factor :	0.8% max. at 1KHz 25℃
Insulation Resistance	10GΩ or 500 MΩ ·μF min. whichever is smaller
Dielectric Withstanding	1.5xWVDC for 5 sec
Capacitance Tolerance	± 5%, ± 10% , ± 20%,

◆ How To Order

C	1210	P	154	K	631	T	X
Product Code C: MLCC Multilayer Ceramic Capacitor	Chip Size 1206 1210 1812 2220	Dielectric P: X7P	Capacitance Unit : pF Example: 103: 10 x 10^3 104: 10 x 10^4 224: 22 x 10^4	Tolerance Example: J :+/- 5% K :+/-10% M:+/-20%	Rated Voltage Example: 251 : 250Vdc 401 : 400Vdc 451 : 450Vdc 631 : 630Vdc	Packaging T: T/R 7” R: T/R 13” B: Bulk	Special Requirement Example: O: Arc Prevention Coating X: Polymer Termination (Super Term) Z: Arc coating and Polymer Termination

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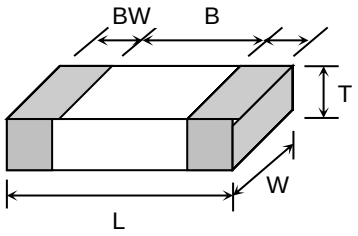
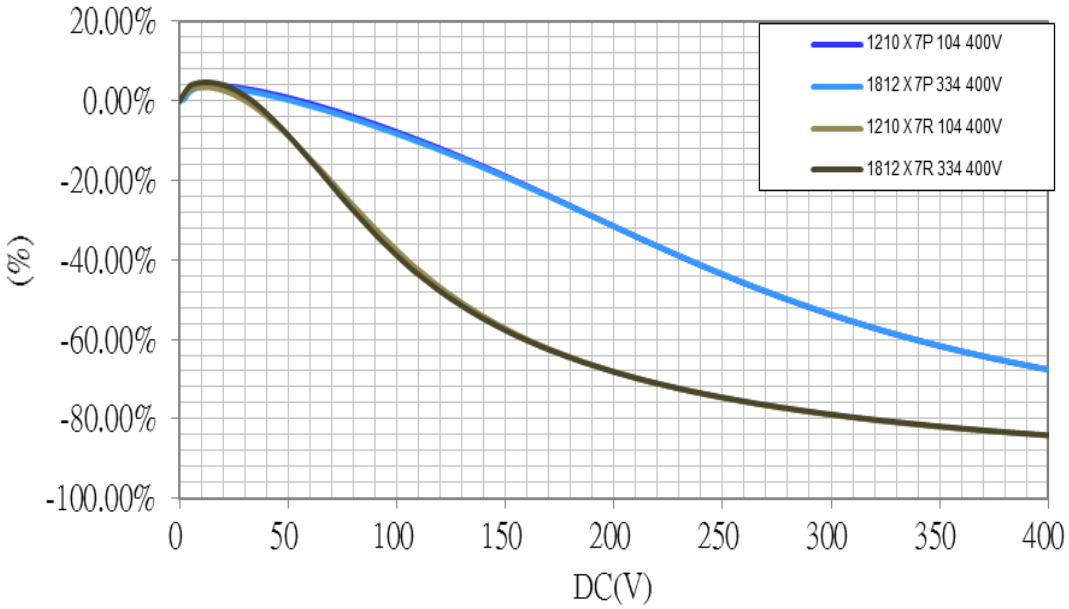
◆ Dimensions

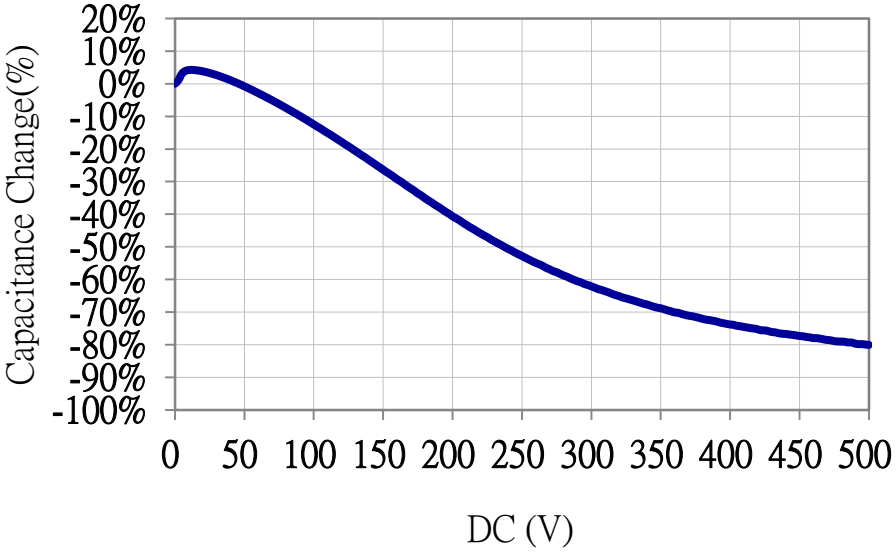


SIZE	L	W	T (max)	B (min)	BW (min)
1206	3.20±0.30 [.126±.012]	1.60±0.20 [.126±.012]	1.80 [.071]	1.50 [.059]	0.30 [.012]
1210	3.20±0.30 [.126±.012]	2.50±0.20 [.126±.012]	2.60 [.102]	1.60 [.059]	0.30 [.012]
1812	4.60±0.30 [.181±.012]	3.20±0.30 [.126±.012]	3.00 [.118]	2.50 [.098]	0.30 [.012]
2220	5.7±0.40 [.220±.016]	5.00±0.40 [.197±.016]	3.00 [.118]	3.50 [.137]	0.30 [.012]

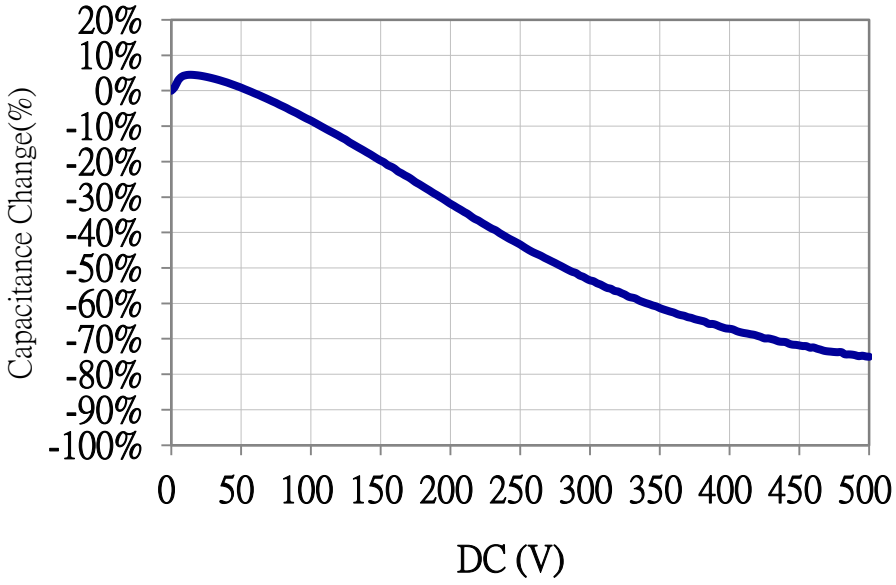
◆ DC Bias Comparison



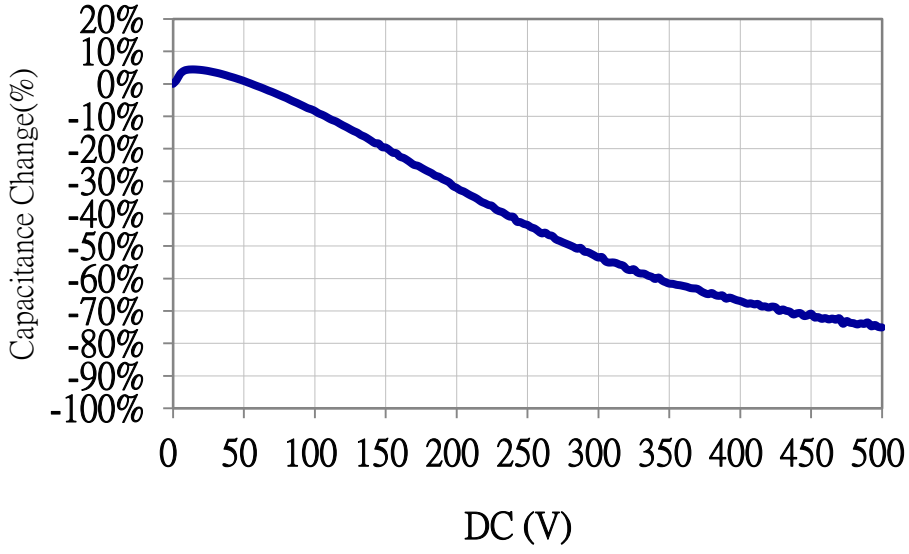
Temperature Characteristic	Voltage	Size	EIA Capacitance Code																		
			103	123	153	183	223	273	333	393	473	563	683	823	104	154	224	334	394	474	684
X7P	250V	1206	B		B		B		B	B	C		C		D		E				
		1210							C		C		C		C		F	F	F		
	400V	1206	B		B		C		D	D	E		E		E						
		1210							C		D		D		E	F		F			
		1812															F	F			
		2220																		F	F
	450V	1206											E		E						
		1210															F				
		1812															F	F		G	
	630V	1206	B		B		C		D	D	E		E								
		1210							C		D		D		E/F	F/G					



C1812P334K451T
DC Bias Characteristics
(typical)



C11210P154K631T
DC Bias Characteristics
(typical)



C1206P473K631T
DC Bias Characteristics
(typical)

Cap	Size	Thickness	Cap. Tol.	Catalog Number			
				Rated Voltage Vdc 250V	Rated Voltage Vdc 400V	Rated Voltage Vdc 450V	Rated Voltage Vdc 630V
103 (10nF)	1206	B/0.85±0.15mm	K	C1206P103K251T	C1206P103K401T		C1206P103K631T
153 (15nF)	1206	B/0.85±0.15mm	K	C1206P153K251T	C1206P153K401T		C1206P153K631T
223 (22nF)	1206	B/0.85±0.15mm	K	C1206P223K251T			
		C/1.0 +0.1mm -0.05mm	K		C1206P223K401T		C1206P223K631T
333 (33nF)	1206	B/0.85±0.15mm	K	C1206P333K251T			
		D/1.25±0.2mm	K		C1206P333K401T		C1206P333K631T
	1210	C/1.0 +0.1mm -0.05mm	K	C1210P333K251T	C1210P333K401T		C1210P333K631T
393 (39nF)	1206	B/0.85±0.15mm	K	C1206P393K251T			
		D/1.25±0.2mm	K		C1206P393K401T		C1206P393K631T
473 (47nF)	1206	C/1.0 +0.1mm -0.05mm	K	C1206P473K251T			
		E/1.6±0.2mm	K		C1206P473K401T		C1206P473K631T
	1210	C/1.0 +0.1mm -0.05mm	K	C1210P473K251T			
		D/1.25±0.2mm	K		C1210P473K401T		C1210P473K631T
683 (68nF)	1206	C/1.0 +0.1mm -0.05mm	K	C1206P683K251T			
		E/1.6±0.2mm	K		C1206P683K401T	C1206P683K451T	C1206P683K631T
	1210	C/1.0 +0.1mm -0.05mm	K	C1210P683K251T			
		D/1.25±0.2mm	K		C1210P683K401T		C1210P683K631T
104 (100nF)	1206	D/1.25±0.2mm	K	C1206P104K251T			
		E/1.6±0.2mm	K		C1206P104K401T	C1206P104K451T	
	1210	C/1.0 +0.1mm -0.05mm	K	C1210P104K251T			
		E/1.6±0.2mm	K		C1210P104K401T		C1210P104K631T
		F/2.0±0.2mm	K				C1210P104K631T
154 (150nF)	1210	F/2.0±0.2mm	K		C1210P154K401T		C1210P154K631T
	1210	G/2.4±0.2mm	K				C1210P154K631T
224 (220nF)	1206	E/1.6±0.2mm	K	C1206P224K251T			
	1210	E/1.6±0.2mm	K	C1210P224K251T			
		F/2.0±0.2mm	K			C1210P224K451T	
	1812	F/2.0±0.2mm	K		C1812P224K401T	C1812P224K451T	
334 (330nF)	1210	F/2.0±0.2mm	K	C1210P334K251T	C1210P334K401T		
	1812	F/2.0±0.2mm	K		C1812P334K401T	C1812P334K451T	
394 (390nF)	1210	F/2.0±0.2mm	K	C1210P394K251T			
474 (470nF)	1812	G/2.4±0.2mm	K			C1812P474K451T	
	2220	E/1.6±0.2mm	K		C2220P474K401T		
684 (680nF)	2220	F/2.0±0.2mm	K		C2220P684K401T		