



*Holy Stone Enterprise Co., Ltd.*

# CERAMIC CAPACITOR CATALOG

## **HCC Series**

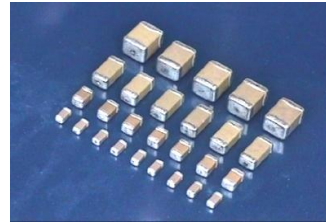
**Commerical grade**

**High Capacitance MLCC**

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# Multilayer Ceramic Chip Capacitors [ High Capacitance MLCC – 1.0uF and above ] HCC Series



◆ Features

- Surface mount suitable for wave and reflow soldering
- High reliability
- Small size and high capacitance value
- Excellent high frequency characteristics
- RoHS compliant

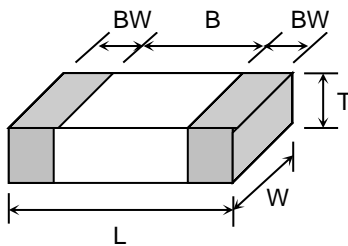
◆ Applications

- Ideal for smoothing and decoupling circuits
- Suitable for DC-DC converter, personal computer and peripherals, telecommunication and general electronic equipment

◆ Summary of Specifications

Operation Temperature	NP0 & X7R & X7S : -55 °C ~ +125 °C , X6S : -55 °C ~ +105 °C ;
Rated Voltage	4.0Vdc to 50Vdc
Temperature Coefficient	X7R : ≤ ± 15% , -55 °C ~ +125 °C (EIA Class II)
	X7S : ≤ ± 22% , -55 °C ~ +125 °C (EIA Class II)
	X6S : ≤ ± 22% , -55 °C ~ +105 °C (EIA Class II)
	X5R : ≤ ± 15% , -55 °C ~ +85 °C (EIA Class II)
Dissipation Factor	X7R, X5R, X6S, X7S : Max. 0.15
Insulation Resistance	10G Ω or 500/C Ω whichever is smaller (C in Farads)
Aging	X7R/X6S/X5R/X7S : typically 1.0%
Dielectric Strength	250% Rated Voltage

◆ Dimensions



TYPE	L	W	T (max)	B (min)	BW (min)
0402	1.00±0.05	0.50±0.05	0.55 [.022]	0.30 [.012]	0.15 [.006]
0603	1.60±0.10	0.80±0.10	0.95 [.037]	0.40 [.016]	0.15 [.006]
0805	2.00±0.20	1.25±0.20	1.45 [.057]	0.70 [.028]	0.20 [.008]
1206	3.20±0.30	1.60±0.20	1.80 [.071]	1.50 [.059]	0.30 [.012]
1210	3.20±0.30 [.126±.012]	2.50±0.20 [.098±.008]	2.70 [.105]	1.60 [.063]	0.30 [.012]
1812	4.60±0.3	3.20±0.3	3.00 [.118]	2.50 [.098]	0.30 [.012]
2220	5.7±0.40	5.00±0.40	3.00 [.118]	3.50 [.137]	0.30 [.012]

◆ How To Order



Product Code	Chip Size	Dielectric	Capacitance Unit : pF	Tolerance	Rated Voltage	Packaging
C: MLCC (Multilayer Ceramic Chip of Capacitor)	Ex. 0402 0603 0805 1206 1210 1812 2220	Ex.: X:X7R S:X6S B:X5R R:X7S	Ex.: 105:10×10 <sup>5</sup> 106:10×10 <sup>6</sup> 226:22×10 <sup>6</sup>	Ex.: J : +/- 5% K : +/- 10% M : +/- 20% Z : +80/-20%	Ex.: 004: 4Vdc 007: 6.3Vdc 010: 10Vdc 016: 16Vdc 025: 25Vdc 035: 35Vdc 050: 50Vdc	T: T&R 7" R: T&R 13" B: Bulk



Cap.	Size	Thickness	Cap. Tol.	Catalog Number		
				Rated Voltage Vdc 6.3V	Rated Voltage Vdc 10V	Rated Voltage Vdc 16V
105 (1uF)	0402	O/0.5+-0.05mm	K	C0402X105K007T		
	0603	B/0.85+-0.15mm	K	C0603X105K007T	C0603X105K010T	C0603X105K016T
	0805	D/1.25±0.2mm	K	C0805X105K007T	C0805X105K010T	C0805X105K016T
	1206	D/1.25±0.2mm	K	C1206X105K007T	C1206X105K010T	C1206X105K016T
		E/1.6±0.2mm	K			C1206X105K016T
1210	D/1.25±0.2mm	K	C1210X105K007T	C1210X105K010T	C1210X105K016T	
225 (2.2uF)	0603	B/0.85+-0.15mm	K	C0603X225K007T	C0603X225K010T	
	0805	D/1.25±0.2mm	K	C0805X225K007T	C0805X225K010T	C0805X225K016T
	1206	E/1.6±0.2mm	K	C1206X225K007T	C1206X225K010T	C1206X225K016T
	1210	F/2.0±0.2mm	K	C1210X225K007T	C1210X225K010T	C1210X225K016T
335 (3.3uF)	0805	D/1.25±0.2mm	K			
	1206	E/1.6±0.2mm	K	C1206X335K007T	C1206X335K010T	C1206X335K016T
475 (4.7uF)	0805	D/1.25±0.2mm	K	C0805X475K007T	C0805X475K010T	C0805X475K016T
	1206	E/1.6±0.2mm	K	C1206X475K007T	C1206X475K010T	C1206X475K016T
	1210	F/2.0±0.2mm	K		C1210X475K010T	C1210X475K016T
106 (10uF)	0805	D/1.25±0.2mm	K	C0805X106K007T	C0805X106K010T	C0805X106K016T
	1206	E/1.6±0.2mm	K	C1206X106K007T	C1206X106K010T	C1206X106K016T
	1210	F/2.0±0.2mm	K	C1210X106K007T	C1210X106K010T	C1210X106K016T
226 (22uF)	1206	E/1.6±0.2mm	K	C1206X226K007T	C1206X226K010T	
	1210	G/2.4±0.2mm	K		C1210X226K010T	C1210X226K016T

Cap.	Size	Thickness	Cap. Tol.	Catalog Number		
				Rated Voltage Vdc 25V	Rated Voltage Vdc 35V	Rated Voltage Vdc 50V
105 (1uF)	0603	B/0.85±0.15mm	K	C0603X105K025T		C0603X105K050T
	0805	D/1.25±0.2mm	K	C0805X105K025T	C0805X105K035T	C0805X105K050T
	1206	D/1.25±0.2mm	K	C1206X105K025T	C1206X105K035T	C1206X105K050T
		E/1.6±0.2mm	K	C1206X105K025T	C1206X105K035T	C1206X105K050T
	1210	D/1.25±0.2mm	K	C1210X105K025T	C1210X105K035T	
		E/1.6±0.2mm	K			C1210X105K050T
	1812	F/2.0±0.2mm	K	C1812X105K025T		C1812X105K050T
2220	F/2.0±0.2mm	K			C2220X105K050T	
155 (1.5uF)	1812	F/2.0±0.2mm	K			C1812X155K050T
225 (2.2uF)	0805	D/1.25±0.2mm	K	C0805X225K025T	C0805X225K035T	C0805X225K050T
	1206	E/1.6±0.2mm	K	C1206X225K025T	C1206X225K035T	C1206X225K050T
	1210	F/2.0±0.2mm	K	C1210X225K025T	C1210X225K035T	C1210X225K050T
	1812	F/2.0±0.2mm	K	C1812X225K025T		C1812X225K050T
	2220	F/2.0±0.2mm	K			C2220X225K050T
335 (3.3uF)	1206	E/1.6±0.2mm	K	C1206X335K025T		
	1812	F/2.0±0.2mm	K			C1812X335K050T
475 (4.7uF)	0805	D/1.25±0.2mm	K	C0805X475K025T		
	1206	E/1.6±0.2mm	K	C1206X475K025T	C1206X475K035T	C1206X475K050T
	1210	F/2.0±0.2mm	K	C1210X475K025T	C1210X475K035T	C1210X475K050T
	1812	F/2.0±0.2mm	K	C1812X475K025T		C1812X475K050T
	2220	F/2.0±0.2mm	K			C2220X475K050T
106 (10uF)	1206	E/1.6±0.2mm	K	C1206X106K025T	C1206X106K035T	
	1210	F/2.0±0.2mm	K	C1210X106K025T	C1210X106K035T	C1210X106K050T
		G/2.4±0.2mm	K			C1210X106K050T
	1812	F/2.0±0.2mm	K	C1812X106K025T		C1812X106K050T
		G/2.4±0.2mm	K	C1812X106K025T		C1812X106K050T
2220	G/2.4±0.2mm	K			C2220X106K050T	

Cap.	Size	Thickness	Cap. Tol.	Catalog Number		
				Rated Voltage Vdc 6.3V	Rated Voltage Vdc 10V	Rated Voltage Vdc 16V
105 (1uF)	0402	O/0.5+-0.05mm	K		C0402R105K010T	
225 (2.2uF)	0402	O/0.5+-0.05mm	K	C0402R225K007T	C0402R225K010T	
	0603	B/0.85+-0.15mm	K			C0603R225K016T
475 (4.7uF)	0603	B/0.85+-0.15mm	K		C0603R475K010T	C0603R475K016T
226 (22uF)	1206	E/1.6±0.2mm	K			C1206R226K016T
107 (100uF)	1210	G/2.4±0.2mm	K	C1210R107K007T		

Cap.	Size	Thickness	Cap. Tol.	Catalog Number	
				Rated Voltage Vdc 25V	Rated Voltage Vdc 50V
225 (2.2uF)	0603	B/0.85+-0.15mm	K	C0603R225K025T	
475 (4.7uF)	0805	D/1.25±0.2mm	K		C0805R475K050T
106 (10uF)	0805	D/1.25±0.2mm	K	C0805R106K025T	

Cap.	Size	Thickness	Cap. Tol.	Catalog Number			
				Rated Voltage Vdc 4V	Rated Voltage Vdc 6.3V	Rated Voltage Vdc 10V	Rated Voltage Vdc 16V
105 (1uF)	0402	O/0.5+-0.05mm	K		C0402S105K007T	C0402S105K010T	C0402S105K016T
	0603	B/0.85+-0.15mm	K		C0603S105K007T	C0603S105K010T	C0603S105K016T
	0805	D/1.25±0.2mm	K				C0805S105K016T
225 (2.2uF)	0402	O/0.5+-0.05mm	K		C0402S225K007T	C0402S225K010T	C0402S225K016T
	0603	B/0.85+-0.15mm	K		C0603S225K007T	C0603S225K010T	C0603S225K016T
	0805	D/1.25±0.2mm	K			C0805S225K010T	C0805S225K016T
	1206	E/1.6±0.2mm	K				C1206S225K016T
475 (4.7uF)	0402	O/0.5+-0.05mm	K		C0402S475K007T		
	0603	B/0.85+-0.15mm	K		C0603S475K007T	C0603S475K010T	C0603S475K016T
	0805	D/1.25±0.2mm	K		C0805S475K007T	C0805S475K010T	C0805S475K016T
	1206	E/1.6±0.2mm	K			C1206S475K010T	C1206S475K016T
	1210	F/2.0±0.2mm	K				C1210S475K016T
106 (10uF)	0603	B/0.85+-0.15mm	K	C0603S106K004T	C0603S106K007T	C0603S106K010T	C0603S106K016T
	0805	D/1.25±0.2mm	K		C0805S106K007T	C0805S106K010T	C0805S106K016T
	1206	E/1.6±0.2mm	K		C1206S106K007T	C1206S106K010T	C1206S106K016T
	1210	F/2.0±0.2mm	K			C1210S106K010T	C1210S106K016T
226 (22uF)	0603	B/0.85+-0.15mm	K	C0603S226K004T	C0603S226K007T		
	0805	D/1.25±0.2mm	K	C0805S226K004T	C0805S226K007T	C0805S226K010T	C0805S226K016T
	1206	E/1.6±0.2mm	K		C1206S226K007T	C1206S226K010T	C1206S226K016T
476 (47uF)	1210	G/2.4±0.2mm	K			C1210S226K010T	C1210S226K016T
	0805	D/1.25±0.2mm	K	C0805S476K004T			
	1206	E/1.6±0.2mm	K	C1206S476K004T	C1206S476K007T		
107 (100uF)	1210	G/2.4±0.2mm	K		C1210S476K007T	C1210S476K010T	C1210S476K016T
	1210	G/2.4±0.2mm	K		C1210S107K007T		

Cap.	Size	Thickness	Cap. Tol.	Catalog Number		
				Rated Voltage Vdc 25V	Rated Voltage Vdc 35V	Rated Voltage Vdc 50V
105 (1uF)	0402	O/0.5+-0.05mm	K	C0402S105K025T		
	0603	B/0.85+-0.15mm	K	C0603S105K025T		C0603S105K050T
	0805	D/1.25±0.2mm	K	C0805S105K025T	C0805S105K035T	C0805S105K050T
	1206	E/1.6±0.2mm	K		C1206S105K035T	C1206S105K050T
	1210	F/2.0±0.2mm	K			C1210S105K050T
225 (2.2uF)	0603	B/0.85+-0.15mm	K	C0603S225K025T		
	0805	D/1.25±0.2mm	K	C0805S225K025T	C0805S225K035T	C0805S225K050T
	1206	E/1.6±0.2mm	K	C1206S225K025T	C1206S225K035T	C1206S225K050T
475 (4.7uF)	1210	F/2.0±0.2mm	K	C1210S225K025T	C1210S225K035T	C1210S225K050T
	0603	B/0.85+-0.15mm	K	C0603S475K025T		
	0805	D/1.25±0.2mm	K	C0805S475K025T	C0805S225K035T	C0805S475K050T
106 (10uF)	1206	E/1.6±0.2mm	K	C1206S475K025T	C1206S475K035T	C1206S475K050T
	1210	F/2.0±0.2mm	K	C1210S475K025T	C1210S475K035T	C1210S475K050T
	0805	D/1.25±0.2mm	K	C0805S105K025T	C0805S106K035T	
226 (22uF)	1206	E/1.6±0.2mm	K	C1206S106K025T	C1206S106K035T	
	1210	F/2.0±0.2mm G/2.4±0.2mm	K	C1210S106K025T	C1210S106K035T	C1210S106K050T
	1210	G/2.4±0.2mm	K	C1210S226K025T		



Cap.	Size	Thickness	Cap. Tol.	Catalog Number				
				Rated Voltage Vdc 4V	Rated Voltage Vdc 6.3V	Rated Voltage Vdc 10V	Rated Voltage Vdc 16V	
105 (1uF)	0201	S/0.3±0.03mm	M		C0201B105M007T	C0201B105M010T		
	0402	O/0.5+-0.05mm	M		C0402B105M007T	C0402B105M010T	C0402B105M016T	
	0603	B/0.85+-0.15mm	M		C0603B105M007T	C0603B105M010T	C0603B105M016T	
	0805	D/1.25±0.2mm	M				C0805B105M016T	
	1206	E/1.6±0.2mm	M				C1206B105M016T	
	1210	F/2.0±0.2mm	M		C1210B105M007T	C1210B105M010T	C1210B105M016T	
225 (2.2uF)	0201	S/0.3±0.03mm	M		C0201B225M007T	C0201B225M010T		
	0402	O/0.5+-0.05mm	M		C0402B225M007T	C0402B225M010T	C0402B225M016T	
	0603	B/0.85+-0.15mm	M		C0603B225M007T	C0603B225M010T	C0603B225M016T	
	0805	D/1.25±0.2mm	M		C0805B225M007T	C0805B225M010T	C0805B225M016T	
	1206	E/1.6±0.2mm	M			C1206B225M010T	C1206B225M016T	
	1210	F/2.0±0.2mm	M		C1210B225M007T	C1210B225M010T	C1210B225M016T	
335 (3.3uF)	0805	D/1.25±0.2mm	M			C0805B335M010T	C0805B335M016T	
475 (4.7uF)	0402	O/0.5+-0.05mm	M		C0402B475M007T	C0402B475M010T		
	0603	B/0.85+-0.15mm	M		C0603B475M007T	C0603B475M010T	C0603B475M016T	
	0805	D/1.25±0.2mm	M		C0805B475M007T	C0805B475M010T	C0805B475M016T	
	1206	E/1.6±0.2mm	M			C1206B475M010T	C1206B475M016T	
	1210	F/2.0±0.2mm	M		C1210B475M007T	C1210B475M010T	C1210B475M016T	
	106 (10uF)	0402	O/0.5+-0.05mm	M		C0402B106M007T	C0402B106M010T	
0603		B/0.85+-0.15mm	M		C0603B106M007T	C0603B106M010T	C0603B106M016T	
0805		D/1.25±0.2mm	M		C0805B106M007T	C0805B106M010T	C0805B106M016T	
1206		E/1.6±0.2mm	M		C1206B106M007T	C1206B106M010T	C1206B106M016T	
1210		F/2.0±0.2mm	M		C1210B106M007T	C1210B106M010T	C1210B106M016T	
226 (22uF)		0603	B/0.85+-0.15mm	M		C0603B226M007T	C0603B226M010T	
	0805	D/1.25±0.2mm	M		C0805B226M007T	C0805B226M010T	C0805B226M016T	
	1206	E/1.6±0.2mm	M		C1206B226M007T	C1206B226M010T	C1206B226M016T	
	1210	G/2.4±0.2mm	M		C1210B226M007T	C1210B226M010T	C1210B226M016T	
	476 (47uF)	0805	D/1.25±0.2mm	M	C0805B476M004T	C0805B476M007T	C0805B476M010T	
		1206	E/1.6±0.2mm	M		C1206B476M007T	C1206B476M010T	
1210		G/2.4±0.2mm	M		C1210B476M007T	C1210B476M010T	C1210B476M016T	
107 (100uF)	0805	D/1.25±0.2mm	M	C0805B107M004T				
	1206	E/1.6±0.2mm	M		C1206B107M007T			
	1210	G/2.4±0.2mm	M		C1210B107M007T	C1210B107M010T		

Cap.	Size	Thickness	Cap. Tol.	Catalog Number		
				Rated Voltage Vdc 25V	Rated Voltage Vdc 35V	Rated Voltage Vdc 50V
105 (1uF)	0402	O/0.5+-0.05mm	M	C0402B105M025T	C0402B105M035T	
	0603	B/0.85+-0.15mm	M	C0603B105M025T	C0603B105M035T	C0603B105M050T
	0805	D/1.25±0.2mm	M	C0805B105M025T	C0805B105M035T	C0805B105M050T
	1206	E/1.6±0.2mm	M	C1206B105M025T		C1206B105M050T
	1210	F/2.0±0.2mm	M	C1210B105M025T		C1210B105M050T
225 (2.2uF)	0402	O/0.5+-0.05mm	M	C0402B225M025T		
	0603	B/0.85+-0.15mm	M	C0603B225M025T	C0603B225M035T	C0603B225M050T
	0805	D/1.25±0.2mm	M	C0805B225M025T	C0805B225M035T	C0805B225M050T
	1206	E/1.6±0.2mm	M	C1206B225M025T		C1206B225M050T
	1210	F/2.0±0.2mm	M	C1210B225M025T		C1210B225M050T
475 (4.7uF)	0603	B/0.85+-0.15mm	M	C0603B475M025T	C0603B475M035T	
	0805	D/1.25±0.2mm	M	C0805B475M025T	C0805B475M035T	C0805B475M050T
	1206	E/1.6±0.2mm	M	C1206B475M025T		C1206B475M050T
	1210	F/2.0±0.2mm	M	C1210B475M025T		C1210B475M050T
106 (10uF)	0603	B/0.85+-0.15mm	M	C0603B106M025T		
	0805	D/1.25±0.2mm	M	C0805B106M025T	C0805B106M035T	
	1206	E/1.6±0.2mm	M	C1206B106M025T		C1206B106M050T
	1210	F/2.0±0.2mm	M	C1210B106M025T		C1210B106M050T
		G/2.4±0.2mm	M			C1210B106M050T
226 (22uF)	0805	D/1.25±0.2mm	M	C0805B226M025T		
	1206	E/1.6±0.2mm	M	C1206B226M025T		
	1210	G/2.4±0.2mm	M	C1210B226M025T		