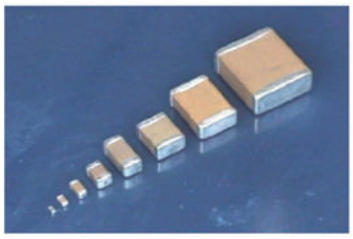
Multilayer Ceramic Chip Capacitors

[Normal Chip Capacitors – NP0,X7R,X5R]

NCC Series



Standard Multilayer Ceramic Chip Capacitors are available in a full range of sizes and temperature coefficients, with voltage ratings from 6.3V to 50V.

◆ Features

- ❑ Surface mount suitable for wave and reflow soldering
- ❑ Small size and high reliability
- ❑ Excellent in high frequency characteristics
- ❑ RoHS compliant

◆ Applications

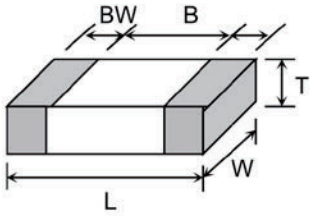
- ❑ Suitable for general electronics circuit, telecommunication, personal computers and peripheral, power circuit, mobile application & etc ….

◆ Summary of Specifications

Operation Temperature	NP0 & X7R : -55 ℃ ~ +125 ℃ , X5R : -55 ℃ ~ +85 ℃
Rated Voltage	6.3Vdc ~ 50Vdc
Temperature Coefficient	NP0 : ≤ ± 30ppm/ ℃ , -55 ℃ ~ +125 ℃ (EIA Class I)
	X7R : ≤ ± 15% , -55 ℃ ~ +125 ℃ (EIA Class Ⅱ)
	X5R : ≤ ± 15% , -55 ℃ ~ +85 ℃ (EIA Class Ⅱ)
Dissipation Factor	NP0 : More than 30pF: Q≥ 1000 (0.001) , 30pF and below : Q≥400+20C (C=pF)
	X7R, X5R : Max. 0.10
Insulation Resistance	10GΩ or 500/CΩ , whichever is smaller (C in Farads)
Aging	NP0 : 0% , X7R/X5R : typically 1.0%
Dielectric Strength	250% Rated Voltage

Unit : mm [inches]

◆ Dimension



TYPE	L	W	T (max)	B (min)	BW (min)
0201	0.60±0.03 [.024±.001]	0.30±0.03 [.011 ±.001]	0.33 [.013]	0.20 [.008]	0.10 [.004]
0402	1.00±0.05 [.039±.002]	0.50±0.05 [.020 ±.002]	0.55 [.022]	0.30 [.012]	0.15 [.006]
0603	1.60±0.10 [.063±.004]	0.80±0.10 [.031 ±.004]	0.95 [.037]	0.40 [.016]	0.15 [.006]
0805	2.00±0.20 [.079±.012]	1.25±0.20 [.049 ±.008]	1.45 [.057]	0.70 [.028]	0.20 [.008]
1206	3.20±0.30 [.126±.012]	1.60±0.20 [.063±.008]	1.80 [.071]	1.50 [.059]	0.30 [.012]

◆ How To Order

C	1206	N	103	J	025	T	F	Y

Product Code	Chip Size	Dielectric	Capacitance Unit : pF	Tolerance	Rated Voltage	Packaging	Thickness (mm) (Optional)	Suffix Code
C: MLCC (Multilayer Ceramic Capacitor)	Ex.: 0201 0402 0603 0805 1206	N: NP0 X: X7R B: X5R	Ex.: 102 : 10x10^2 103 : 10x10^3	Ex.: F : +/- 1% G : +/- 2% J : +/- 5% K : +/- 10% M : +/- 20%	Ex.: 016:16Vdc 025:25Vdc 050:50Vdc	T: T&R 7" R: T&R 13" B: Bulk	Ex: E:1.6±0.20 F:2.0±0.20	Y

◆ Capacitance Range

Dielectric Characteristic	Size	Rated Voltage	Capacitance Range																																		
			0R5	1R0	1R5	2R0	3R0	4R0	5R0	6R0	7R0	8R0	9R0	100	120	150	180	220	270	330	390	470	560	680	820	101	121	151	181	221	271	331	391	471	561	681	821
NPO	0201	16V	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S											
		25V	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S											
	0402	50V	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	0603	50V							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
	0805	50V												B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B

Dielectric Characteristic	Size	Rated Voltage	Capacitance Range																																									
			101	121	151	181	221	271	331	391	471	561	681	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	154	224	334	474	684	824
X7R	0201	6.3V																																				S						
		16V														S	S	S	S	S	S																							
		25V			S	S	S	S	S	S	S	S	S	S	S	S	S	S																										
	0402	10V																																				O						
		16V																								O	O	O	O	O	O	O	O	O	O	O	O	O						
		25V																				O	O	O	O	O	O	O	O	O	O	O	O	O										
		50V	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O														
	0603	10V																																				B	B	B	B	B	B	
		16V			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	B	B	
		25V			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	B		
		50V			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		
	0805	16V									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	D	D	D	D	
		25V									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	D	D	D	D	
		35V									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	D	D	D	D	
		50V									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	
	1206	16V																																				B	B	B	B	B	B	
		25V																																				B	B	B	C	D	D	
		50V																																				B	B	B	C	D	D	E

Dielectric Characteristic	Size	Rated Voltage	Capacitance Range												
			273	333	393	473	563	683	823	104	154	224	334	474	684
X5R	0201	6.3V								S		S		S	
	0402	6.3V										O		O	
		10V								O		O		O	
		16V	O	O	O	O	O	O	O	O					
		25V	O	O	O	O	O	O	O	O					
	0603	6.3V												B	B
		10V								B	B	B	B	B	B
		16V								B	B	B	B	B	B
		25V								B	B	B	B	B	

- ***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

- **Specifications & Test Conditions please see P53~P56**

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