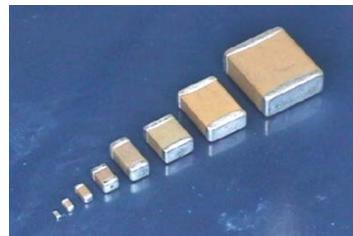


Multilayer Ceramic Chip Capacitors [Normal Chip Capacitors – NP0,X7R,X5R,Y5V]

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

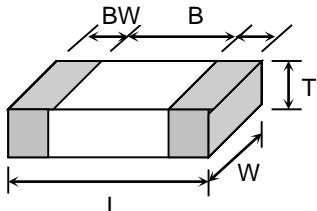
◆ Applications

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

◆ Summary of Specifications

Operation Temperature	NP0 & X7R : -55 °C ~ +125 °C , X5R : -55 °C ~ +85 °C , Y5V : -30 °C ~ +85 °C
Rated Voltage	6.3Vdc to 50Vdc
Temperature Coefficient	NP0 : $\leq \pm 30\text{ppm}/^{\circ}\text{C}$, -55 °C ~ +125 °C (EIA Class I) X7R : $\leq \pm 15\%$, -55 °C ~ +125 °C (EIA Class II) X5R : $\leq \pm 15\%$, -55 °C ~ +85 °C (EIA Class II) Y5V: +22%/-82% , -30 °C ~ +85 °C (EIA Class II)
Dissipation Factor	NP0 : More than 30pF: Q ≥ 1000 (0.001) , 30pF and below : Q $\geq 400+20C$ (C=pF) X7R, X5R : Max. 0.10; Y5V : Max. 0.2
Insulation Resistance	10GΩ or 500/CΩ whichever is smaller (C in Farads)
Aging	NP0 : 0% , X7R/X5R : typically 1.0% , Y5V $\leq 7\%$ per decade of time
Dielectric Strength	250% Rated Voltage

◆ Dimension



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

◆ How To Order

C	0402	B	104	K	010	T	Y
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Product Code	Chip Size	Dielectric	Capacitance Unit : pF	Tolerance	Rated Voltage	Packaging	Suffix Code
C: MLCC (Multilayer Ceramic Capacitor)	Ex.: 0201 0402 0603 0805 1206	Ex.: N: NP0 X: X7R B: X5R Y: Y5V	Ex.: 102 : 10×10^2 473 : 47×10^3 104 : 10×10^4	Ex.: F : +/- 1% G : +/- 2% J : +/- 5% K : +/- 10% M : +/- 20% Z : +80/-20%	Ex.: 007 : 6.3Vdc 010 : 10Vdc 016 : 16Vdc 025 : 25Vdc 050 : 50Vdc	T: T&R 7" R: T&R 13" B: Bulk	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
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	
		25V	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	
	0603	50V																							
	0805	50V																							

Dielectric Characteristic	Size	Rated Voltage	Capacitance Range																							
			101	121	151	181	221	271	331	391	471	561	681	821	102	122	152	182	222	272	332	392	472	562	682	822
X7R	0201	6.3V																								S
		16V																								
		25V	S	S	S	S	S	S	S	S	S	S	S	S												
	0402	10V																								O
		16V																								
		25V																								
		50V	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 BBBB BB
		16V																								
		25V																								
		50V	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 BBBB BB DD
		25V																								
		35V																								
		50V	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	BC DDD	
	1206	16V																								B BBBB BB
		25V																								BB BC DDD
		50V																								BB BC DDD E

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

Dielectric Characteristic	Size	Rated Voltage	Capacitance Range											
			102	222	472	73	104	224	474	74	104	224	474	74
Y5V	0402	10V												
		16V												
	0603	16V												
		25V												
		50V												
	0805	16V												
		25V												
		50V												
		16V												
	1206	25V												
		50V												

■ 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
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