

CC series

General purpose capacitor series

◆ Features

- » A wide selection of sizes is available (0402 to 2225)
- » High capacitance in given case size
- » Capacitor with lead-free termination (pure Tin)
- » RoHS & HALOGEN compliant

◆ Applications

- » For general digital circuit
- » For power supply bypass capacitors
- » For consumer electronics
- » For telecommunication
- » DC to DC converter

◆ Part Number

CC	0402	N	100	J	500
Series	Size	Dielectric	Capacitance	Tolerance	Rated voltage
	Inch:	N: NPO	Two significant Digits followed	B=±0.1pF	Two significant Digits followed
	0402	(COG)	by no. of zeros and P is in place	C=±0.25pF	by no. of zeros and V is in place
	0603		of decimal point	D=±0.5pF	of decimal point
	0805	X: X7R	Eg.:	F=±1%	
	1206		0P47 = 0.47pF	G=±2%	6V3 = 6.3 VDC
	1210	B: X5R	0P5 = 0.5pF	J=±5%	100 = 10 VDC
	1808		1P0 = 1.0pF	K=±10%	160 = 16 VDC
	1812	Y: Y5V	100 = 10x10 ⁰	M=±20%	250 = 25 VDC
	1825		= 10pF	Z= -20/+80%	500 = 50 VDC
	2220				
	2225				

◆ General Electrical Data

Dielectric	NPO (COG)	X7R	Y5V	X5R
Size	0402, 0603, 0805, 1206, 1210, 1812	0402, 0603, 0805, 1206, 1210, 1812	0402, 0603, 0805, 1206, 1210, 1812	0402, 0603
Rate Voltage (WVDC)	16V, 25V, 50V	10V, 16V, 25V, 50V		6.3V, 10V, 16V, 25V
Capacitance range*	0.5pF to 39nF	100pF to 2.2μF	10nF to 1.0μF	10nF to 1.0μF
Capacitance tolerance	Cap≤5pF: B (±0.1pF), C (±0.25pF) 5pF<Cap<10pF: C (±0.25pF), D (±0.5pF) Cap≥10pF: F (±1%), G (±2%), J (±5%), K (±10%)	J (±5%), K (±10%), M (±20%)	M (±20%), Z (-20/+80%)	J (±5%), K (±10%), M (±20%)
Dielectric Strength	* To apply voltage (≤50V) 250%. * Duration: 1 to 5 sec. * Charge and discharge current less than 50mA			
Tan δ*	Cap<30pF: Q≥400+20C Cap≥30pF: Q≥1000	Note 1		
Insulation resistance at U _R	≥10GΩ	≥10GΩ or R x C≥100Ω x F whichever is less		
Operating temperature	-55°C ~ 125°C		-25°C ~ 85°C	-55°C ~ 85°C
Temperature coefficient	±30ppm	±15%	+30/-80%	±15%
Termination	Cu (or Ag)/Ni/Sn (lead-free termination)			

Note 1:

Rated Vol.	D.F.	Exception of D.F.	
≥50V	≤2.5%	≤3%	0603≥0.047μF; 0805≥0.18μF
25V	≤3.5%	≤5%	0805≥1μF; 1210≥10μF
		≤7%	0603≥0.33μF
16V	≤3.5%	≤5%	0402≥0.033μF; 0603≥0.15μF; 0805≥0.68μF; 1206≥2.2μF
		≤10%	1210≥22μF; 0603≥0.68μF
10V	≤5.0%	≤10%	0603≥1μF; 0805≥2.2μF

Rated Vol.	D.F.	Exception of D.F.		
≥50V	≤5.0%	7.0%	0603≥0.1μF; 0805≥0.47μF	
25V	≤5.0%	≤7%	0402≥0.047μF; 0603≥0.1μF;	
		≤9%	0805≥0.33μF; 1206≥1μF	
16V(C<1.0μF)	≤7.0%	≤9%	0402≥0.068μF; 0603≥0.68μF	
16V(C≥1.0μF)	≤12.5%	≤12.5%	0805≥4.7μF; 1206≥10μF; 1210≥22μF; 1812≥47μF	
10V	≤12.5%	---	---	

◆ Capacitance Range

Dielectric		NPO (C0G)											
Size		0402				0603				0805			
Rated Voltage		10	16	25	50	10	16	25	50	10	16	25	50
Capacitance	0.1pF(0P1)												
	0.2pF(0P2)												
	0.3pF(0P3)												
	0.4pF(0P4)												
	0.5pF(0P5)												
	0.6pF(0P6)												
	0.7pF(0P7)												
	0.8pF(0P8)												
	0.9pF(0P9)												
	1.0pF(1P0)												
	1.2pF(1P2)												
	1.5pF(1P5)												
	1.8pF(1P8)												
	2.2pF(2P2)												
	2.7pF(2P7)												
	3.3pF(3P3)												
	3.9pF(3P9)												
	4.7pF(4P7)												
	5.6pF(5P6)												
	6.8pF(6P8)												
	8.2pF(8P2)												
	10pF(100)												
	12pF(120)												
	15pF(150)												
	18pF(180)												
	22pF(220)												
	27pF(270)												
	33pF(330)												
	39pF(390)												
	47pF(470)												
	56pF(560)												
	68pF(680)												
	82pF(820)												
	100pF(101)												
	150pF(151)												
	180pF(181)												
	220pF(221)												
	270pF(271)												
	330pF(331)												
	390pF(391)												
470pF(471)													
560pF(561)													
680pF(681)													
820pF(821)													
1,000pF(102)													
1,200pF(122)													
1,500pF(152)													
1,800pF(182)													
2,200pF(222)													
2,700pF(272)													
3,300pF(332)													
3,900pF(392)													
4,700pF(472)													
5,600pF(562)													
6,800pF(682)													
8,200pF(822)													
0.010μF(103)													
0.012μF(123)													

◆ Capacitance Range

Dielectric	COG (NPO)												
	Size	1206				1210				1812			
		Rated Voltage	10	16	25	50	10	16	25	50	10	16	25
Capacitance	1.0pF(1P0)												
	1.2pF(1P2)												
	1.5pF(1P5)												
	1.8pF(1P8)												
	2.2pF(2P2)												
	2.7pF(2P7)												
	3.3pF(3P3)												
	3.9pF(3P9)												
	4.7pF(4P7)												
	5.6pF(5P6)												
	6.8pF(6P8)												
	8.2pF(8P2)												
	10pF(100)												
	12pF(120)												
	15pF(150)												
	18pF(180)												
	22pF(220)												
	27pF(270)												
	33pF(330)												
	39pF(390)												
	47pF(470)												
	56pF(560)												
	68pF(680)												
	82pF(820)												
	100pF(101)												
	120pF(121)												
	150pF(151)												
	180pF(181)												
	220pF(221)												
	270pF(271)												
	330pF(331)												
	390pF(391)												
	470pF(471)												
	560pF(561)												
	680pF(681)												
	820pF(821)												
	1,000pF(102)												
	1,200pF(122)												
	1,500pF(152)												
	1,800pF(182)												
2,200pF(222)													
2,700pF(272)													
3,300pF(332)													
3,900pF(392)													
4,700pF(472)													
5,600pF(562)													
6,800pF(682)													
8,200pF(822)													
0.010μF(103)													
0.012μF(123)													
0.015μF(153)													
0.018μF(183)													
0.022μF(223)													
0.027μF(273)													
0.033μF(333)													
0.039μF(393)													

◆ Capacitance Range

Dielectric		X7R																
Size		0402				0603				0805				1206				
Rated Voltage		10	16	25	50	6.3	10	16	25	50	10	16	25	50	10	16	25	50
Capacitance	100pF(101)																	
	120pF(121)																	
	150pF(151)																	
	180pF(181)																	
	220pF(221)																	
	270pF(271)																	
	330pF(331)																	
	390pF(391)																	
	470pF(471)																	
	560pF(561)																	
	680pF(681)																	
	820pF(821)																	
	1,000pF(102)																	
	1,200pF(122)																	
	1,500pF(152)																	
	1,800pF(182)																	
	2,200pF(222)																	
	2,700pF(272)																	
	3,300pF(332)																	
	3,900pF(392)																	
	4,700pF(472)																	
	5,600pF(562)																	
	6,800pF(682)																	
	8,200pF(822)																	
	0.010μF(103)																	
	0.012μF(123)																	
	0.015μF(153)																	
	0.018μF(183)																	
	0.022μF(223)																	
	0.027μF(273)																	
	0.033μF(333)																	
	0.039μF(393)																	
	0.047μF(473)																	
	0.056μF(563)																	
	0.068μF(683)																	
	0.082μF(823)																	
	0.10μF(104)																	
	0.12μF(124)																	
	0.15μF(154)																	
	0.18μF(184)																	
0.22μF(224)																		
0.27μF(274)																		
0.33μF(334)																		
0.39μF(394)																		
0.47μF(474)																		
0.56μF(564)																		
0.68μF(684)																		
0.82μF(824)																		
1.0μF(105)																		

◆ Capacitance Range

Dielectric		X7R										
Size		1210				1812				1825	2220	2225
Rated Voltage		10	16	25	50	10	16	25	50	50	50	50
Capacitance	100pF(101)											
	120pF(121)											
	150pF(151)											
	180pF(181)											
	220pF(221)											
	270pF(271)											
	330pF(331)											
	390pF(391)											
	470pF(471)											
	560pF(561)											
	680pF(681)											
	820pF(821)											
	1,000pF(102)											
	1,200pF(122)											
	1,500pF(152)											
	1,800pF(182)											
	2,200pF(222)											
	2,700pF(272)											
	3,300pF(332)											
	3,900pF(392)											
	4,700pF(472)											
	5,600pF(562)											
	6,800pF(682)											
	8,200pF(822)											
	0.010μF(103)											
	0.012μF(123)											
	0.015μF(153)											
	0.018μF(183)											
	0.022μF(223)											
	0.027μF(273)											
	0.033μF(333)											
	0.039μF(393)											
	0.047μF(473)											
	0.056μF(563)											
	0.068μF(683)											
	0.082μF(823)											
	0.10μF(104)											
	0.12μF(124)											
	0.15μF(154)											
	0.18μF(184)											
0.22μF(224)												
0.27μF(274)												
0.33μF(334)												
0.39μF(394)												
0.47μF(474)												
0.56μF(564)												
0.68μF(684)												
0.82μF(824)												
1.0μF(105)												

◆ Capacitance Range

Dielectric		X5R							
Size		0402				0603			
Rated Voltage		10	16	25	50	6.3	10	16	25
Capacitance	0.027μF(273)								
	0.033μF(333)								
	0.039μF(393)								
	0.047μF(473)								
	0.056μF(563)								
	0.068μF(683)								
	0.082μF(823)								
	0.100μF(104)								
	0.150μF(154)								
	0.220μF(224)								
	0.270μF(274)								
	0.330μF(334)								
	0.390μF(394)								
	0.470μF(474)								
	0.680μF(684)								
0.820μF(824)									
1.000μF(105)									

◆ Capacitance Range

Dielectric		Y5V													
Size		0402					0603					0805			
Rated Voltage		6.3	10	16	25	50	6.3	10	16	25	50	10	16	25	50
Capacitance	0.010μF(103)														
	0.015μF(153)														
	0.022μF(223)														
	0.033μF(333)														
	0.047μF(473)														
	0.068μF(683)														
	0.10μF(104)														
	0.15μF(154)														
	0.22μF(224)														
	0.33μF(334)														
	0.47μF(474)														
	0.68μF(684)														
	1.0μF(105)														

◆ Capacitance Range

Dielectric		Y5V											
Size		1206				1210				1812			
Rated Voltage		10	16	25	50	10	16	25	50	10	16	25	50
Capacitance	0.010μF(103)												
	0.015μF(153)												
	0.022μF(223)												
	0.033μF(333)												
	0.047μF(473)												
	0.068μF(683)												
	0.10μF(104)												
	0.15μF(154)												
	0.22μF(224)												
	0.33μF(334)												
	0.47μF(474)												
	0.68μF(684)												
	1.0μF(105)												