

Multi-Layer Ceramic Chip Capacitors - High Capacitance

HOW TO ORDER

N	1206	F	106	Z	C	T
Rated voltage	Size	Dielectric	Capacitance	Tolerance	Termination	Packaging
K=6.3 VDC N=10 VDC B=16 VDC T=20 VDC U=50 VDC	Inch (mm) 0402 (1005) 0603 (1608) 0805 (2012) 1206 (3216) 1210 (3225) 1812 (4532)	R=X7R X=X5R F=Y5V	Two significant digits followed by no. of zeros. And R is in place of decimal point. eg.: 106=10x10 ⁶ =10μF	K=±10% M=±20% Z=-20/+80%	C:Lead-Free	B=Bulk T=7" reeled

INTERNAL SAP SYSTEM PART NUMBER

1206	F	106	Z	100	C	T
Size	Dielectric	Capacitance	Tolerance	Rated voltage	Termination	Packaging
Inch (mm) 0402 (1005) 0603 (1608) 0805 (2012) 1206 (3216) 1210 (3225) 1812 (4532)	B=X7R X=X5R S=X6S F=Y5V	Two significant digits followed by no. of zeros. And R is in place of decimal point. eg.: 106=10x10 ⁶ =10μF	K=±10% M=±20% Z=-20/+80%	Two significant digits followed by no. of zeros. And R is in place of decimal point. 6R3=6.3 VDC 100=10 VDC 160=16 VDC 250=25 VDC 500=50 VDC	C=Cu/Ni/Sn	B=Bulk C=Bulk cassette T=7" reeled G=13" reeled

PACKAGING DIMENSION AND QUANTITY

Size	Thickness (mm)/Symbol		Paper tape		Plastic tape	
			7" reel	13" reel	7" reel	13" reel
0402 (1005)	0.50±0.05	N	10k	50k	-	-
0603 (1608)	0.80±0.07	S	4k	15k	-	-
	0.80+0.15/-0.10	X	4k	15k	-	-
0805 (2012)	0.80±0.10	B	4k	15k	-	-
	1.25±0.10	D	-	-	3k	10k
	1.25±0.20	I	-	-	3k	10k
1206 (3216)	0.95±0.10	C	-	-	3k	10k
	1.15±0.15	J	-	-	3k	10k
	1.60±0.20	G	-	-	2k	-
	1.60+0.30/-0.10	P	-	-	2k	-
1210 (3225)	0.95±0.10	C	-	-	3k	10k
	1.25±0.10	D	-	-	3k	10k
	1.60±0.20	G	-	-	2k	-
	2.00±0.20	K	-	-	1k	-
1812 (4532)	1.25±0.10	D	-	-	1k	-
	2.00±0.20	K	-	-	1k	-

Unit: pieces

Multi-Layer Ceramic Chip Capacitors - High Capacitance

■ CAPACITANCE RANGE

X7R Dielectric

Dielectric		X7R																	
Size		0402				0603			0805			1206				1210		1812	
Rated Voltage (VDC)		10	10	16	25	50	10	16	25	10	16	25	50	25	50	25	50		
Capacitance	0.10µF (104)	N		S	S	X													
	0.15µF (154)		S	S															
	0.22µF (224)		S	S															
	0.33µF (334)		X	X															
	0.47µF (474)		X	X															
	0.68µF (684)																		
	1.0µF (105)		X				D	D	D		J	J	P	D	D	D	K		
	1.5µF (155)																		
	2.2µF (225)									J	J	P		G					
	3.3µF (335)									P									
4.7µF (475)									P										

1. The letter in cell is expressed the symbol of product thickness.
2. For more information about products with special capacitance or other data, please contact POEI local representative.

X5R Dielectric

Dielectric		X5R									
Size		0402			0603			0805	1206		
Rated Voltage (VDC)		6.3	10	16	6.3	10	16	6.3	6.3	10	16
Capacitance	0.027µF (273)			N							
	0.033µF (333)			N							
	0.039µF (393)			N							
	0.047µF (473)			N							
	0.056µF (563)		N	N							
	0.068µF (683)		N	N							
	0.082µF (823)		N	N							
	0.10µF (104)		N	N							
	0.15µF (154)										
	0.22µF (224)	N*									
	0.33µF (334)				X	X					
	0.47µF (474)				X	X					
	0.68µF (684)				X	X	X				
	1.0µF (105)				X	X					
	1.5µF (155)										J
	2.2µF (225)								I		J
3.3µF (335)										P	P
4.7µF (475)								I		P	P
6.8µF (685)									P	P	
10µF (106)								I	P	P	

1. The letter in cell is expressed the symbol of product thickness.
2. The letter in cell with "*" mark is expressed product also available for X6S dielectric.
3. The gray cell is expressed that product is under development, please contact POEI local representative to inquire more information.

Y5V Dielectric

Dielectric		Y5V																	
Size		0402		0603		0805			1206				1210				1812		
Rated Voltage (VDC)		6.3	10	10	16	10	16	25	10	16	25	50	10	16	25	35	50	25	50
Capacitance	0.15µF (154)		N																
	0.22µF (224)		N																
	0.33µF (334)	N																	
	0.47µF (474)	N																	
	0.68µF (684)	N																	
	1.0µF (105)	N		S	X	B	B	D		C	C	C					C		D
	1.5µF (155)			S		D	D			C	C				C				D
	2.2µF (225)			S		D	D			C	C				C				D
	3.3µF (335)					D	D		J	J	J				C				D
	4.7µF (475)					D	D		J	J	J			C	D				D
	6.8µF (685)					I			J	J				C	G				D
	10µF (106)					I			J	J				D	G	K		D	
	22µF (226)								P					K					
	47µF (476)													K					

1. The letter in cell is expressed the symbol of product thickness.
2. For more information about products with special capacitance or other data, please contact POEI local representative.

Multi-Layer Ceramic Chip Capacitors - Middle and High Voltage

INTERNAL SAP SYSTEM PART NUMBER

1808	N	100	G	202	L	T
Size	Dielectric	Capacitance	Tolerance	Rated voltage	Termination	Packaging
Inch (mm) 0603(1608) 0805 (2012) 1206 (3216) 1210 (3225) 1808 (4520) 1812 (4532)	N=NPO (COG) B=X7R F=Y5V	Two significant digits followed by no. of zeros. And R is in place of decimal point. eg.: R47=0.47pF OR5=0.5pF 1R0=1.0pF 100=10x10 ⁰ =10pF	B=±0.1pF C=±0.25pF D=±0.5pF G=±2% J=±5% K=±10% M=±20% Z=-20/+80%	Two significant digits followed by no. of zeros. And R is in place of decimal point. 201=200 VDC 251=250 VDC 501=500 VDC 631=630 VDC 102=1000 VDC 152=1500 VDC 202=2000 VDC 302=3000 VDC	L=Ag/Ni/Sn (for NPO dielectric) C=Cu/Ni/Sn (for X7R*, Y5V dielectric)	B=Bulk T=7" reeled G=13" reeled

* Partial X7R items are with Ag/Ni/Sn terminations, please ref to below product range of X7R dielectric for detail.

INTERNAL SAP SYSTEM PART NUMBER

1206	F	106	Z	100	C	T
Size	Dielectric	Capacitance	Tolerance	Rated voltage	Termination	Packaging
Inch (mm) 0402 (1005) 0603 (1608) 0805 (2012) 1206 (3216) 1210 (3225) 1812 (4532)	B=X7R X=X5R S=X6S F=Y5V	Two significant digits followed by no. of zeros. And R is in place of decimal point. eg.: 106=10x10 ⁶ =10µF	K=±10% M=±20% Z=-20/+80%	Two significant digits followed by no. of zeros. And R is in place of decimal point. 201=200 VDC 251=250 VDC 501=500 VDC 531=630 VDC 102=1000 VDC 152=1500 VDC 202=2000 VDC 302=3000 VDC	C=Cu/Ni/Sn	B=Bulk C=Bulk cassette T=7" reeled G=13" reeled

PACKAGING DIMENSION AND QUANTITY

Size	Thickness (mm)/Symbol		Paper tape		Plastic tape	
			7" reel	13" reel	7" reel	13" reel
0603 (1608)	0.80±0.07	S	4k	15k	-	-
0805 (2012)	0.60±0.10	A	4k	15k	-	-
	0.80±0.10	B	4k	15k	-	-
1206 (3216)	1.25±0.10	D	-	-	3k	10k
	0.80±0.10	B	4k	15k	-	-
	0.95±0.10	C	-	-	3k	10k
1210 (3225)	1.25±0.10	D	-	-	3k	10k
	1.60±0.20	G	-	-	2k	-
	2.50±0.30	M	-	-	1k	-
1808 (4520)	0.95±0.10	C	-	-	3k	10k
	1.25±0.10	D	-	-	2k	-
1812 (4532)	2.00±0.20	K	-	-	1k	-
	1.25±0.10	D	-	-	1k	-
	2.00±0.20	K	-	-	1k	-

Unit: pieces

Multi-Layer Ceramic Chip Capacitors - Middle and High Voltage

■ CAPACITANCE RANGE

NPO Dielectric 200V to 630V

Dielectric		NPO																	
Size	0603	0805				1206				1210				1812					
Rated Voltage (VDC)	200	250	200	250	500	630	200	250	500	630	200	250	500	630	200	250	500	630	
Capacitance	0.5pF (0R5)			A	A	A	A												
	1.0pF (1R0)			A	A	A	A												
	1.2pF (1R2)			A	A	A	A												
	1.5pF (1R5)			A	A	A	A	B	B	B	B								
	1.8pF (1R8)			A	A	A	A	B	B	B	B								
	2.2pF (2R2)			A	A	A	A	B	B	B	B								
	2.7pF (2R7)			A	A	A	A	B	B	B	B								
	3.3pF (3R3)			A	A	A	A	B	B	B	B								
	3.9pF (3R9)			A	A	A	A	B	B	B	B								
	4.7pF (4R7)			A	A	A	A	B	B	B	B								
	5.6pF (5R6)			A	A	A	A	B	B	B	B								
	6.8pF (6R8)			A	A	A	A	B	B	B	B								
	8.2pF (8R2)			A	A	A	A	B	B	B	B								
	10pF (100)			A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D
	12pF (120)			A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D
	15pF (150)			A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D
	18pF (180)			A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D
	22pF (220)	S	S	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D
	27pF (270)	S	S	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D
	33pF (330)	S	S	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D
	39pF (390)	S	S	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D
	47pF (470)	S	S	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D
	56pF (560)	S	S	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D
	68pF (680)	S	S	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D
	82pF (820)	S	S	A	A	B	B	B	B	B	B	C	C	C	C	D	D	D	D
	100pF (101)	S	S	A	A	B	B	B	B	B	B	C	C	C	C	D	D	D	D
	120pF (121)			A	A	D	D	B	B	B	B	C	C	C	C	D	D	D	D
	150pF (151)			B	B	D	D	B	B	B	B	C	C	C	C	D	D	D	D
	180pF (181)			B	B	D	D	B	B	B	B	C	C	C	C	D	D	D	D
	220pF (221)			D	D	D	D	B	B	B	B	C	C	C	C	D	D	D	D
	270pF (271)			D	D	D	D	B	B	C	C	C	C	C	C	D	D	D	D
	330pF (331)			D	D	D	D	B	B	C	C	C	C	C	C	D	D	D	D
	390pF (391)			D	D	D	D	B	B	C	C	C	C	C	C	D	D	D	D
	470pF (471)			D				C	C	C	C	C	C	C	C	D	D	D	D
560pF (561)			D				C	C	C	C	C	C	C	C	D	D	D	D	
680pF (681)			D				C	C	C	C	C	C	C	C	D	D	D	D	
820pF (821)			D				C	D	D	D	C	C	C	C	D	D	D	D	
1,000pF (102)							C	G	G	G	C	C	C	C	D	D	D	D	
1,200pF (122)							C				D	D	D	D	D	D	D	D	
1,500pF (152)							C				D	D	D	D	D	D	D	D	
1,800pF (182)							D				D	D	D	D	D	D	D	D	
2,200pF (222)							D				D	D			D	D	D	D	
2,700pF (272)											D	D			D	D	D	D	
3,300pF (332)											D				D	D	D	D	
3,900pF (392)											D				D				
4,700pF (472)															D				
5,600pF (562)															D				
6,800pF (682)															D				

1. The letter in cell is expressed the symbol of product thickness.
 2. For more information about products with special capacitance or other data, please contact POEI local representative.

Multi-Layer Ceramic Chip Capacitors - Middle and High Voltage

NPO Dielectric 1kV to 3kV

Dielectric		NPO									
Size		1206		1210		1808			1812		
Rated Voltage (VDC)		1000	2000	1000	2000	1000	2000	3000	1000	2000	3000
Capacitance	1.5pF (1R5)	B	B								
	1.8pF (1R8)	B	B								
	2.2pF (2R2)	B	B			D	D	D			
	2.7pF (2R7)	B	B			D	D	D			
	3.3pF (3R3)	B	B			D	D	D			
	3.9pF (3R9)	B	B			D	D	D			
	4.7pF (4R7)	B	B			D	D	D			
	5.6pF (5R6)	B	B			D	D	D			
	6.8pF (6R8)	B	B			D	D	D			
	8.2pF (8R2)	B	B			D	D	D			
	10pF (100)	B	B	C	C	D	D	D	D	D	D
	12pF (120)	B	B	C	C	D	D	D	D	D	D
	15pF (150)	B	B	C	C	D	D	D	D	D	D
	18pF (180)	B	B	C	C	D	D	D	D	D	D
	22pF (220)	B	B	C	C	D	D	D	D	D	D
	27pF (270)	B	B	C	C	D	D	D	D	D	D
	33pF (330)	B	B	C	C	D	D	D	D	D	D
	39pF (390)	B	B	C	C	D	D	D	D	D	D
	47pF (470)	B	B	C	C	D	D	D	D	D	D
	56pF (560)	B	B	C	D	D	D	D	D	D	D
	68pF (680)	B	C	C	D	D	D	D	D	D	D
	82pF (820)	B	C	C	D	D	D	D	D	D	D
	100pF (101)	B	C	C	D	D	D	D	D	D	D
	120pF (121)	B	D	C	D	D	D	D	D	D	D
	150pF (151)	C	D	C	D	D	D	D	D	D	D
	180pF (181)	C	G	C	D	D	D	K	D	D	D
	220pF (221)	D	G	C	D	D	D	K	D	D	D
	270pF (271)	D		C		D	D	K	D	D	K
	330pF (331)	G		D		D	D		D	D	K
	390pF (391)	G		D		D	K		D	D	K
470pF (471)	G		D		D	K		D	D	K	
560pF (561)					K	K		D	D		
680pF (681)					K	K		D	K		
820pF (821)					K			D	K		
1,000pF (102)					K			K	K		
1,200pF (122)								K			
1,500pF (152)								K			

1. The letter in cell is expressed the symbol of product thickness.
2. For more information about products with special capacitance or other data, please contact POEI local representative.

Multi-Layer Ceramic Chip Capacitors - Middle and High Voltage

X7R Dielectric 200V to 630V

Dielectric		X7R															
Size		0805				1206				1210				1812			
Rated Voltage (VDC)		200	250	500	630	200	250	500	630	200	250	500	630	200	250	500	630
Capacitance	100pF (101)	B	B	B^	B^												
	120pF (121)	B	B	B^	B^												
	150pF (151)	B	B	B^	B^	B	B	B^	B^								
	180pF (181)	B	B	B^	B^	B	B	B^	B^								
	220pF (221)	B	B	B^	B^	B	B	B^	B^								
	270pF (271)	B	B	B^	B^	B	B	B^	B^								
	330pF (331)	B	B	B^	B^	B	B	B^	B^								
	390pF (391)	B	B	B^	B^	B	B	B^	B^								
	470pF (471)	B	B	B^	B^	B	B	B^	B^								
	560pF (561)	B	B	B^	B^	B	B	B^	B^								
	680pF (681)	B	B	B^	B^	B	B	B^	B^								
	820pF (821)	B	B	B^	B^	B	B	B^	B^								
	1,000pF (102)	B	B	B^	B^	B	B	B^	B^	C	C	C^	C^	D	D	D^	D^
	1,200pF (122)	B	B	B^	B^	B	B	B^	B^	C	C	C^	C^	D	D	D^	D^
	1,500pF (152)	B	B	B^	B^	B	B	B^	B^	C	C	C^	C^	D	D	D^	D^
	1,800pF (182)	B	B	B^	B^	B	B	B^	B^	C	C	C^	C^	D	D	D^	D^
	2,200pF (222)	B	B	B^	B^	B	B	B^	B^	C	C	C^	C^	D	D	D^	D^
	2,700pF (272)	B	B	B^	B^	B	B	B^	B^	C	C	C^	C^	D	D	D^	D^
	3,300pF (332)	B	B			B	B	B^	B^	C	C	C^	C^	D	D	D^	D^
	3,900pF (392)	B	B			B	B	B^	B^	C	C	C^	C^	D	D	D^	D^
	4,700pF (472)	B	B			B	B	B^	B^	C	C	C^	C^	D	D	D^	D^
	5,600pF (562)	D	D			B	B	B^	B^	C	C	C^	C^	D	D	D^	D^
	6,800pF (682)	D	D			B	B	B^	B^	C	C	C^	C^	D	D	D^	D^
	8,200pF (822)	D	D			B	B	C^	C^	C	C	C^	C^	D	D	D^	D^
	0.010µF (103)	D	D			B	B	C^	C^	C	C	C^	C^	D	D	D^	D^
	0.012µF (123)	D	D			B	B	D^	D^	C	C	C^	C^	D	D	D^	D^
	0.015µF (153)	D	D			C	C	D^	D^	C	C	C^	C^	D	D	D^	D^
	0.018µF (183)	D	D			C	C	D^	D^	C	C	C^	C^	D	D	D^	D^
	0.022µF (223)	D	D			C	C	G^	G^	C	C	D^	D^	D	D	D^	D^
	0.027µF (273)					C	C	G^	G^	C	C	G^	G^	D	D	D^	D^
	0.033µF (333)					G	G	G^	G^	C	C	G^	G^	D	D	D^	D^
	0.039µF (393)					G	G			C	C	G^	G^	D	D	D^	D^
	0.047µF (473)					G	G			D	D	G^	G^	D	D	D^	D^
	0.056µF (563)					G	G			D	D	G^	G^	D	D	K^	K^
	0.068µF (683)					G	G			G	G			D	D	K^	K^
	0.082µF (823)					G	G			G	G			D	D	K^	K^
0.10µF (104)					G	G			G	G			D	D	K^	K^	
0.12µF (124)									G	G			D	D			
0.15µF (154)									M	M			K	K			
0.18µF (184)									M	M			K	K			
0.22µF (224)									M	M			K	K			
0.27µF (274)													K	K			
0.33µF (334)													K	K			
0.39µF (394)													K	K			
0.47µF (474)													K	K			

1. The letter in cell is expressed the symbol of product thickness.
2. The letter in cell with " ^ " mark is expressed product with Ag/Ni/Sn terminations.
3. For more information about products with special capacitance or other data, please contact POEI local representative.

Multi-Layer Ceramic Chip Capacitors - Middle and High Voltage

X7R Dielectric 1kV to 3kV

Dielectric		X7R										
Size		1206			1210	1808				1812		
Rated Voltage (VDC)		1000	1500	2000	1000	1000	1500	2000	3000	1000	2000	3000
Capacitance	150pF (151)	B^	B^	B^		D^	D^	D^				
	180pF (181)	B^	B^	B^		D^	D^	D^				
	220pF (221)	B^	B^	B^		D^	D^	D^				
	270pF (271)	B^	B^	B^		D^	D^	D^		D^	D^	
	330pF (331)	B^	B^	B^		D^	D^	D^		D^	D^	
	390pF (391)	B^	B^	C^		D^	D^	D^		D^	D^	
	470pF (471)	B^	B^	C^		D^	D^	D^	K^	D^	D^	
	560pF (561)	B^	C^	C^		D^	D^	D^	K^	D^	D^	
	680pF (681)	B^	C^	C^		D^	D^	D^	K^	D^	D^	K^
	820pF (821)	B^	G^	G^		D^	D^	D^	K^	D^	D^	K^
	1,000pF (102)	B^	G^	G^	C^	D^	D^	K^	K^	D^	D^	K^
	1,200pF (122)	B^	G^		C^	D^	D^	K^		D^	D^	
	1,500pF (152)	C^	G^		C^	D^	D^	K^		D^	D^	
	1,800pF (182)	C^	G^		C^	D^	D^	K^		D^	D^	
	2,200pF (222)	D^	G^		C^	D^	D^	K^		D^	D^	
	2,700pF (272)	G^			C^	D^	D^			D^	D^	
	3,300pF (332)	G^			D^	D^	K^			D^	K^	
	3,900pF (392)	G^				D^				D^	K^	
	4,700pF (472)					D^				D^	K^	
	5,600pF (562)					K^				D^		
6,800pF (682)					K^				D^			
8,200pF (822)					K^				D^			
0.010μF (103)					K^				D^			
0.012μF (123)									K^			
0.015μF (153)									K^			

1. The letter in cell is expressed the symbol of product thickness.
2. The letter in cell with " ^ " mark is expressed product with Ag/Ni/Sn terminations.
3. For more information about products with special capacitance or other data, please contact POEI local representative.

Y5V Dielectric 200V to 250V

Dielectric		Y5V							
Size		0805		1206		1210		1812	
Rated Voltage (VDC)		200	250	200	250	200	250	200	250
Capacitance	0.010μF (103)	B	B	B	B	C	C	D	D
	0.015μF (153)	B	B	B	B	C	C	D	D
	0.022μF (223)	B	B	B	B	C	C	D	D
	0.033μF (333)	B	B	B	B	C	C	D	D
	0.047μF (473)	B	B	B	B	C	C	D	D
	0.068μF (683)	B	B	B	B	C	C	D	D
	0.10μF (104)			B	B	C	C	D	D
	0.15μF (154)			C	C	C	C	D	D
	0.22μF (224)							D	D
	0.33μF (334)							D	D
	0.47μF (474)							D	D
	0.68μF (684)							D	D
	1.0μF (105)								

1. The letter in cell is expressed the symbol of product thickness.
2. For more information about products with special capacitance or other data, please contact POEI local representative.