

MULTILAYER CERAMIC CHIP CAPACITORS

Commercial grade, mid voltage (100 to 630V)

C series

C1005	1005 [CC0402]
C1608	1608 [CC0603]
C2012	2012 [CC0805]
C3216	3216 [CC1206]
C3225	3225 [CC1210]
C4532	4532 [CC1812]
C5750	5750 [CC2220]

Dimensions code: JIS [EIA]



REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request the delivery specifications.

SAFETY REMINDERS

Please pay sufficient attention to the warnings for safe designing when using this products.

REMINDERS

1. The products listed on this catalog are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition. The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property. If you intend to use the products in the applications listed below or if you have special requirements exceeding the range or conditions set forth in the each catalog, please contact us.

- | | |
|---|---|
| (1) Aerospace/aviation equipment | (8) Public information-processing equipment |
| (2) Transportation equipment (cars, electric trains, ships, etc.) | (9) Military equipment |
| (3) Medical equipment (excepting Pharmaceutical Affairs) | (10) Electric heating apparatus, burning equipment |
| (4) Power-generation control equipment | (11) Disaster prevention/crime prevention equipment |
| (5) Atomic energy-related equipment | (12) Safety equipment |
| (6) Seabed equipment | (13) Other applications that are not considered |
| (7) Transportation control equipment | general-purpose applications |

When designing your equipment even for general-purpose applications, you are kindly requested to take into consideration securing protection circuit/device or providing backup circuits in your equipment.

2. We may modify products or discontinue production of a product listed in this catalog without prior notification.
3. We provide "Delivery Specification" that explain precautions for the specifications and safety of each product listed in this catalog. We strongly recommend that you exchange these delivery specifications with customers that use one of these products.
4. If you plan to export a product listed in this catalog, keep in mind that it may be a restricted item according to the "Foreign Exchange" and "Foreign Trade Control Law". In such cases, it is necessary to acquire export permission in harmony with this law.
5. Any reproduction or transferring of the contents of this catalog is prohibited without prior permission from our company.
6. We are not responsible for problems that occur related to the intellectual property rights or other rights of our company or a third party when you use a product listed in this catalog. We do not grant license of these rights.
7. This catalog only applies to products purchased through our company or one of our company's official agencies. This catalog does not apply to products that are purchased through other third parties.

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C series

Mid voltage (100 to 630V)

Type C1005[CC0402], C1608[CC0603], C2012[CC0805], C3216[CC1206], C3225[CC1210], C4532[CC1812], C5750[CC2220]



SERIES OVERVIEW

The rated voltage of the medium voltage C series in the commercial grade is from 100 to 630V, and the products are designed for circuits where high voltage is applied. The maximum capacitance value is 22 μ F.

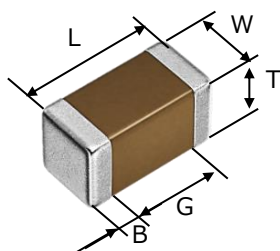
FEATURES

- Voltage rating of 100V, 250V, 350V, 450V and 630V
- COG type having excellent stable temperature and dc bias characteristics is also available.

APPLICATIONS

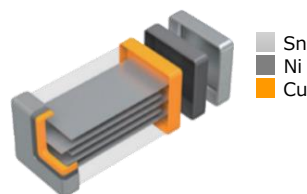
- Decoupling, smoothing, snubber and resonant circuits of high voltage circuits
- Wireless charging units, DC-DC converters, Inverters

SHAPE & DIMENSIONS



L	Product length
W	Product width
T	Product thickness
B	Terminal width
G	Terminal spacing

PRODUCT STRUCTURE



The structure which multilayer dielectrics and inner electrodes are stacked alternately.

The monolithic and simple structure contributes to superior mechanical strength and excellent frequency characteristics.

Dimensions in mm

Type	L	W	T	B	G
C1005	1.00 $\pm$ 0.05	0.50 $\pm$ 0.05	0.50 $\pm$ 0.05	0.10 min.	0.30 min.
C1608	1.60 $\pm$ 0.10	0.80 $\pm$ 0.10	0.80 $\pm$ 0.10		
C2012	2.00 $\pm$ 0.20	1.25 $\pm$ 0.20	1.25 $\pm$ 0.20		0.50 min.
C3216	3.20 $\pm$ 0.20	1.60 $\pm$ 0.20	1.60 $\pm$ 0.20	0.20 min.	1.00 min.
C3225	3.20 $\pm$ 0.40	2.50 $\pm$ 0.30	2.50 $\pm$ 0.30		
C4532	4.50 $\pm$ 0.40	3.20 $\pm$ 0.40	2.50 $\pm$ 0.30		---
C5750	5.70 $\pm$ 0.40	5.00 $\pm$ 0.40	2.50 $\pm$ 0.30		

Dimensional tolerances are typical values. Please check the actual values on the product page of the website.

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MULTILAYER CERAMIC CHIP CAPACITORS



CATALOG NUMBER CONSTRUCTION

C	5750	X7S	2A	226	M	280	K	B
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

(1) Series

(2) Dimensions code

Dimensions code	EIA	Length (mm)	Width (mm)	Terminal width (mm)
1005	CC0402	1.00	0.50	0.10 min.
1608	CC0603	1.60	0.80	
2012	CC0805	2.00	1.25	
3216	CC1206	3.20	1.60	0.20 min.
3225	CC1210	3.20	2.50	
4532	CC1812	4.50	3.20	
5750	CC2220	5.70	5.00	

Dimensions are typical values.

(3) Temperature characteristics

Temperature characteristics	Temperature coefficient or capacitance change	Temperature range
C0G	0±30 ppm/°C	
X7R	±15 %	-55 to +125 °C
X7S	±22 %	
X7T	+22,-33 %	
X5R	±15 %	-55 to +85 °C
X6S	±22 %	-55 to +105 °C

(4) Rated voltage (DC)

Code	Voltage (DC)
2A	100 V
2E	250 V
2V	350 V
2W	450 V
2J	630 V

(5) Nominal capacitance (pF)

The capacitance is expressed in three digit codes and in units of pico Farads (pF). The first and second digits identify the first and second significant figures of the capacitance. The third digit identifies the multiplier. R designates a decimal point.

(Example) 0R5 = 0.5 pF
 101 = 100 pF
 225 = 2,200,000 pF = 2.2 μF

(6) Capacitance tolerance

Code	Tolerance
C	±0.25 pF
D	±0.50 pF
F	±1 %
G	±2 %
J	±5 %
K	±10 %
M	±20 %

(7) Nominal thickness

Code	Nominal thickness
050	0.50 mm
060	0.60 mm
080	0.80 mm
085	0.85 mm
115	1.15 mm
125	1.25 mm
130	1.30 mm
160	1.60 mm
200	2.00 mm
230	2.30 mm
250	2.50 mm
280	2.80 mm
320	3.20 mm

(8) Packaging style

Code	Style
A	178 mm reel, 4 mm pitch
B	178 mm reel, 2 mm pitch
K	178 mm reel, 8 mm pitch

(9) Special reserved code

Code	Description
A,B,C,N	TDK internal code

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Capacitance range chart

C1005 [CC0402]

Capacitance		C0G	X7S
(pF)	Code	2A (100V)	2A (100V)
100	101		
150	151		
220	221		
330	331		
470	471		
680	681		
1,000	102		
1,500	152		
2,200	222		
3,300	332		
4,700	472		
6,800	682		
10,000	103		

Nominal thickness  0.50 mm

- Background gray: NRND (Not Recommended for New Designs)
- Click the charts for details.
- For details such as the catalog numbers, please refer to the capacitance range table on page 12 and after.

MULTILAYER CERAMIC CHIP CAPACITORS



Capacitance range chart

C1608 [CC0603]

Capacitance		C0G		X5R	X7R	X7S
(pF)	Code	2E (250V)	2A (100V)	2A (100V)	2A (100V)	2A (100V)
1	010					
2	020					
3	030					
4	040					
5	050					
6	060					
7	070					
8	080					
9	090					
10	100					
15	150					
22	220					
33	330					
47	470					
68	680					
100	101					
150	151					
220	221					
330	331					
470	471					
680	681					
1,000	102					
1,200	122					
1,500	152					
1,800	182					
2,200	222					
2,700	272					
3,300	332					
3,900	392					
4,700	472					
5,600	562					
6,800	682					
8,200	822					
10,000	103					
15,000	153					
22,000	223					
33,000	333					
47,000	473					
68,000	683					
100,000	104					
1,000,000	105					

Nominal thickness  0.80 mm

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Capacitance range chart

C2012 [CC0805]

Capacitance		C0G			X5R		X7R		X7S	X7T		
(pF)	Code	2W (450V)	2E (250V)	2A (100V)	2E (250V)	2A (100V)	2E (250V)	2A (100V)	2A (100V)	2W (450V)	2V (350V)	2E (250V)
100	101											
150	151											
220	221											
330	331											
470	471											
680	681											
1,000	102											
1,200	122											
1,500	152											
1,800	182											
2,200	222											
2,700	272											
3,300	332											
3,900	392											
4,700	472											
5,600	562											
6,800	682											
8,200	822											
10,000	103											
15,000	153											
22,000	223											
33,000	333											
47,000	473											
68,000	683											
100,000	104											
150,000	154											
220,000	224											
330,000	334											
470,000	474											
680,000	684											
1,000,000	105											
2,200,000	225											
4,700,000	475											

Nominal thickness 0.60 mm 0.85 mm 1.25 mm

•Background gray: NRND (Not Recommended for New Designs)

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Capacitance range chart

C3216 [CC1206]

Capacitance		C0G			
(pF)	Code	2J (630V)	2W (450V)	2E (250V)	2A (100V)
100	101				
150	151				
220	221				
330	331				
470	471				
680	681				
1,000	102				
1,200	122				
1,500	152				
1,800	182				
2,200	222				
2,700	272				
3,300	332				
3,900	392				
4,700	472				
5,600	562				
6,800	682				
8,200	822				
10,000	103				
15,000	153				
22,000	223				
33,000	333				
47,000	473				
68,000	683				
100,000	104				

Capacitance		X5R			X6S	X7R			X7S	X7T			
(pF)	Code	2J (630V)	2E (250V)	2A (100V)	2A (100V)	2J (630V)	2E (250V)	2A (100V)	2A (100V)	2J (630V)	2W (450V)	2V (350V)	2E (250V)
1,000	102												
1,500	152												
2,200	222												
3,300	332												
4,700	472												
6,800	682												
10,000	103												
15,000	153												
22,000	223												
33,000	333												
47,000	473												
68,000	683												
100,000	104												
150,000	154												
220,000	224												
330,000	334												
470,000	474												
680,000	684												
1,000,000	105												
1,500,000	155												
2,200,000	225												
3,300,000	335												
4,700,000	475												
10,000,000	106												

Nominal thickness 0.60 mm 0.85 mm 1.15 mm 1.30 mm 1.60 mm

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Capacitance range chart

C3225 [CC1210]

Capacitance		C0G			
(pF)	Code	2J (630V)	2W (450V)	2E (250V)	2A (100V)
3,900	392				
4,700	472				
5,600	562				
6,800	682				
8,200	822				
10,000	103				
15,000	153				
22,000	223				
33,000	333				
47,000	473				
68,000	683				

Capacitance		X5R			X7R			X7S	X7T		
(pF)	Code	2J (630V)	2E (250V)	2A (100V)	2J (630V)	2E (250V)	2A (100V)	2A (100V)	2J (630V)	2W (450V)	2E (250V)
47,000	473										
68,000	683										
100,000	104										
150,000	154										
220,000	224										
330,000	334										
470,000	474										
680,000	684										
1,000,000	105										
1,500,000	155										
2,200,000	225										
3,300,000	335										
4,700,000	475										
10,000,000	106										

Nominal thickness ■ 1.25 mm ■ 1.60 mm ■ 2.00 mm ■ 2.30 mm ■ 2.50 mm

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MULTILAYER CERAMIC CHIP CAPACITORS



Capacitance range chart

C4532 [CC1812]

Capacitance		C0G			
(pF)	Code	2J (630V)	2W (450V)	2E (250V)	2A (100V)
8,200	822				
10,000	103				
15,000	153				
22,000	223				
33,000	333				
47,000	473				
68,000	683				
100,000	104				

Capacitance		X5R		X7R			X7S	X7T		
(pF)	Code	2J (630V)	2E (250V)	2J (630V)	2E (250V)	2A (100V)	2A (100V)	2J (630V)	2W (450V)	2E (250V)
68,000	683									
100,000	104									
150,000	154									
220,000	224									
300,000	304									
330,000	334									
470,000	474									
680,000	684									
1,000,000	105									
1,500,000	155									
2,200,000	225									
3,300,000	335									
4,700,000	475									

Nominal thickness 1.60 mm 2.00 mm 2.30 mm 2.50 mm 3.20 mm

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Capacitance range chart

C5750 [CC2220]

Capacitance		C0G			
(pF)	Code	2J (630V)	2W (450V)	2E (250V)	2A (100V)
68,000	683				
100,000	104				
150,000	154				

Capacitance		X5R			X6S	X7R			X7S	X7T		
(pF)	Code	2J (630V)	2E (250V)	2A (100V)	2W (450V)	2J (630V)	2E (250V)	2A (100V)	2A (100V)	2J (630V)	2W (450V)	2E (250V)
150,000	154											
220,000	224											
330,000	334											
470,000	474											
680,000	684											
1,000,000	105											
1,500,000	155											
2,200,000	225											
3,300,000	335											
4,700,000	475											
6,800,000	685											
10,000,000	106											
15,000,000	156											
22,000,000	226											

Nominal thickness 1.60 mm 2.00 mm 2.30 mm 2.50 mm 2.80 mm

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Capacitance range table

C0G (-55 to +125°C, 0±30 ppm/°C)

Capaci- tance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers			
				Rated voltage: DC630V	Rated voltage: DC450V	Rated voltage: DC250V	Rated voltage: DC100V
1 pF	1608	0.80±0.10	±0.25pF				C1608C0G2A010C080AA
2 pF	1608	0.80±0.10	±0.25pF				C1608C0G2A020C080AA
3 pF	1608	0.80±0.10	±0.25pF				C1608C0G2A030C080AA
4 pF	1608	0.80±0.10	±0.25pF				C1608C0G2A040C080AA
5 pF	1608	0.80±0.10	±0.25pF				C1608C0G2A050C080AA
6 pF	1608	0.80±0.10	±0.50pF				C1608C0G2A060D080AA
7 pF	1608	0.80±0.10	±0.50pF				C1608C0G2A070D080AA
8 pF	1608	0.80±0.10	±0.50pF				C1608C0G2A080D080AA
9 pF	1608	0.80±0.10	±0.50pF				C1608C0G2A090D080AA
10 pF	1608	0.80±0.10	±0.50pF				C1608C0G2A100D080AA
15 pF	1608	0.80±0.10	±5%				C1608C0G2A150J080AA
22 pF	1608	0.80±0.10	±5%				C1608C0G2A220J080AA
33 pF	1608	0.80±0.10	±5%				C1608C0G2A330J080AA
47 pF	1608	0.80±0.10	±5%				C1608C0G2A470J080AA
68 pF	1608	0.80±0.10	±5%				C1608C0G2A680J080AA
100 pF	1005	0.50±0.05	±5%				C1005C0G2A101J050BA
			±10%			C1005C0G2A101K050BA	
	1608	0.80±0.10	±1%			C1608C0G2A101F080AA	
			±2%			C1608C0G2A101G080AA	
			±5%		C1608C0G2E101J080AA	C1608C0G2A101J080AA	
			±10%		C1608C0G2E101K080AA	C1608C0G2A101K080AA	
	2012	0.60±0.15	±5%		C2012C0G2W101J060AA		
			±10%		C2012C0G2W101K060AA		
	3216	0.60±0.15	±2%	C3216C0G2J101G060AA			
			±5%	C3216C0G2J101J060AA			
±10%	C3216C0G2J101K060AA						
150 pF	1005	0.50±0.05	±5%				C1005C0G2A151J050BA
			±10%			C1005C0G2A151K050BA	
	1608	0.80±0.10	±5%		C1608C0G2E151J080AA	C1608C0G2A151J080AA	
			±10%		C1608C0G2E151K080AA	C1608C0G2A151K080AA	
	2012	0.60±0.15	±5%		C2012C0G2W151J060AA		
			±10%		C2012C0G2W151K060AA		
	3216	0.60±0.15	±2%	C3216C0G2J151G060AA			
			±5%	C3216C0G2J151J060AA			
	±10%	C3216C0G2J151K060AA					
	220 pF	1005	0.50±0.05	±5%			
±10%						C1005C0G2A221K050BA	
1608		0.80±0.10	±5%		C1608C0G2E221J080AA	C1608C0G2A221J080AA	
			±10%		C1608C0G2E221K080AA	C1608C0G2A221K080AA	
2012		0.60±0.15	±5%		C2012C0G2W221J060AA		
			±10%		C2012C0G2W221K060AA		
3216		0.60±0.15	±2%	C3216C0G2J221G060AA			
			±5%	C3216C0G2J221J060AA			
±10%		C3216C0G2J221K060AA					
330 pF		1005	0.50±0.05	±5%			
	±10%					C1005C0G2A331K050BA	
	1608	0.80±0.10	±5%		C1608C0G2E331J080AA	C1608C0G2A331J080AA	
			±10%		C1608C0G2E331K080AA	C1608C0G2A331K080AA	
	2012	0.60±0.15	±5%		C2012C0G2W331J060AA		
			±10%		C2012C0G2W331K060AA		
	3216	0.60±0.15	±2%	C3216C0G2J331G060AA			
			±5%	C3216C0G2J331J060AA			
	±10%	C3216C0G2J331K060AA					
	470 pF	1005	0.50±0.10	±5%			
±10%						C1005C0G2A471K050BA	
1608		0.80±0.10	±5%		C1608C0G2E471J080AA	C1608C0G2A471J080AA	
			±10%		C1608C0G2E471K080AA	C1608C0G2A471K080AA	
2012		0.60±0.15	±5%		C2012C0G2W471J060AA		
			±10%		C2012C0G2W471K060AA		
3216		0.85±0.15	±2%	C3216C0G2J471G085AA			
			±5%	C3216C0G2J471J085AA			
±10%		C3216C0G2J471K085AA					

• Gray: NRND (Not Recommended for New Designs)

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Capacitance range table

C0G (-55 to +125°C, 0±30 ppm/°C)

Capaci- tance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers			
				Rated voltage: DC630V	Rated voltage: DC450V	Rated voltage: DC250V	Rated voltage: DC100V
680 pF	1005	0.50±0.05	±5%				C1005C0G2A681J050BC
			±10%				C1005C0G2A681K050BC
	1608	0.80±0.10	±5%		C1608C0G2E681J080AA	C1608C0G2A681J080AA	
			±10%		C1608C0G2E681K080AA	C1608C0G2A681K080AA	
	2012	0.60±0.15	±5%		C2012C0G2W681J060AA		
			±10%		C2012C0G2W681K060AA		
	3216	0.85±0.15	±2%	C3216C0G2J681G085AA			
			±5%	C3216C0G2J681J085AA			
±10%			C3216C0G2J681K085AA				
1 nF	1005	0.50±0.05	±5%				C1005C0G2A102J050BC
			±10%				C1005C0G2A102K050BC
	1608	0.80±0.10	±1%				C1608C0G2A102F080AA
			±2%				C1608C0G2A102G080AA
			±5%		C1608C0G2E102J080AA	C1608C0G2A102J080AA	
			±10%		C1608C0G2E102K080AA	C1608C0G2A102K080AA	
	2012	0.60±0.15	±5%		C2012C0G2W102J060AA	C2012C0G2A102J060AA	
			±10%		C2012C0G2W102K060AA		
		0.85±0.15	±5%		C2012C0G2E102J085AA		
			±10%		C2012C0G2E102K085AA		
3216	0.85±0.15	±2%	C3216C0G2J102G085AA				
		±5%	C3216C0G2J102J085AA				
		±10%	C3216C0G2J102K085AA				
1.2 nF	1608	0.80±0.10	±5%		C1608C0G2E122J080AA	C1608C0G2A122J080AA	
			±10%		C1608C0G2E122K080AA	C1608C0G2A122K080AA	
	2012	0.60±0.15	±5%		C2012C0G2W122J060AA	C2012C0G2A122J060AA	
			±10%		C2012C0G2W122K060AA		
		0.85±0.15	±5%		C2012C0G2E122J085AA		
			±10%		C2012C0G2E122K085AA		
3216	0.85±0.15	±2%	C3216C0G2J122G085AA				
		±5%	C3216C0G2J122J085AA				
		±10%	C3216C0G2J122K085AA				
1.5 nF	1608	0.80±0.10	±5%		C1608C0G2E152J080AA	C1608C0G2A152J080AA	
			±10%		C1608C0G2E152K080AA	C1608C0G2A152K080AA	
	2012	0.60±0.15	±5%			C2012C0G2A152J060AA	
			±10%			C2012C0G2A152K060AA	
		0.85±0.15	±5%		C2012C0G2W152J085AA	C2012C0G2E152J085AA	
			±10%		C2012C0G2W152K085AA	C2012C0G2E152K085AA	
3216	1.15±0.15	±2%	C3216C0G2J152G115AA				
		±5%	C3216C0G2J152J115AA				
		±10%	C3216C0G2J152K115AA				
1.8 nF	1608	0.80±0.10	±5%		C1608C0G2E182J080AA	C1608C0G2A182J080AA	
			±10%		C1608C0G2E182K080AA	C1608C0G2A182K080AA	
	2012	0.85±0.15	±5%		C2012C0G2W182J085AA	C2012C0G2A182J085AA	
			±10%		C2012C0G2W182K085AA	C2012C0G2A182K085AA	
		1.25±0.20	±5%		C2012C0G2E182J125AA		
			±10%		C2012C0G2E182K125AA		
3216	1.15±0.15	±2%	C3216C0G2J182G115AA				
		±5%	C3216C0G2J182J115AA				
		±10%	C3216C0G2J182K115AA				
2.2 nF	1608	0.80+0.15,-0.10	±5%		C1608C0G2E222J080AA		
			±10%		C1608C0G2E222K080AA		
		0.80±0.10	±5%			C1608C0G2A222J080AA	
			±10%			C1608C0G2A222K080AA	
	2012	0.85±0.15	±5%		C2012C0G2W222J085AA	C2012C0G2A222J085AA	
			±10%		C2012C0G2W222K085AA	C2012C0G2A222K085AA	
		1.25±0.20	±5%		C2012C0G2E222J125AA		
			±10%		C2012C0G2E222K125AA		
3216	1.15±0.15	±2%	C3216C0G2J222G115AA				
		±5%	C3216C0G2J222J115AA				
		±10%	C3216C0G2J222K115AA				

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Capacitance range table

C0G (-55 to +125°C, 0±30 ppm/°C)

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers			
				Rated voltage: DC630V	Rated voltage: DC450V	Rated voltage: DC250V	Rated voltage: DC100V
2.7 nF	1608	0.80±0.15,-0.10	±5%				C1608C0G2A272J080AA
			±10%				C1608C0G2A272K080AA
	2012	1.25±0.20	±5%		C2012C0G2W272J125AA	C2012C0G2E272J125AA	C2012C0G2A272J125AA
			±10%		C2012C0G2W272K125AA	C2012C0G2E272K125AA	C2012C0G2A272K125AA
	3216	1.60±0.20	±2%	C3216C0G2J272G160AA			
			±5%	C3216C0G2J272J160AA			
			±10%	C3216C0G2J272K160AA			
3.3 nF	1608	0.80±0.15,-0.10	±5%				C1608C0G2A332J080AA
			±10%				C1608C0G2A332K080AA
	2012	0.85±0.15	±5%			C2012C0G2E332J085AA	
			±10%			C2012C0G2E332K085AA	
		1.25±0.20	±5%		C2012C0G2W332J125AA		C2012C0G2A332J125AA
			±10%		C2012C0G2W332K125AA		C2012C0G2A332K125AA
	3216	0.85±0.15	±5%			C3216C0G2E332J085AA	
			±10%			C3216C0G2E332K085AA	
		1.60±0.20	±2%	C3216C0G2J332G160AA			
			±5%	C3216C0G2J332J160AA			
3.9 nF	1608	0.80±0.10	±5%				C1608C0G2A392J080AC
			±10%				C1608C0G2A392K080AC
	2012	1.25±0.20	±5%		C2012C0G2W392J125AA	C2012C0G2E392J125AA	C2012C0G2A392J125AA
			±10%		C2012C0G2W392K125AA	C2012C0G2E392K125AA	C2012C0G2A392K125AA
		0.60±0.15	±5%				C3216C0G2A392J060AA
			±10%				C3216C0G2A392K060AA
	3216	0.85±0.15	±2%	C3216C0G2J392G085AA			
			±5%	C3216C0G2J392J085AA			
			±10%	C3216C0G2J392K085AA			
		1.15±0.15	±5%			C3216C0G2E392J115AA	
			±10%			C3216C0G2E392K115AA	
	3225	1.25±0.20	±2%	C3225C0G2J392G125AA			
4.7 nF	1608	0.80±0.10	±5%				C1608C0G2A472J080AC
			±10%				C1608C0G2A472K080AC
	2012	1.25±0.20	±5%		C2012C0G2W472J125AA	C2012C0G2E472J125AA	C2012C0G2A472J125AA
			±10%		C2012C0G2W472K125AA	C2012C0G2E472K125AA	C2012C0G2A472K125AA
		0.85±0.15	±2%	C3216C0G2J472G085AA			
	3216		±5%	C3216C0G2J472J085AA			C3216C0G2A472J085AA
			±10%	C3216C0G2J472K085AA			C3216C0G2A472K085AA
		1.15±0.15	±5%			C3216C0G2E472J115AA	
			±10%			C3216C0G2E472K115AA	
	3225	1.60±0.20	±2%	C3225C0G2J472G160AA			
			±5%	C3225C0G2J472J160AA			
			±10%	C3225C0G2J472K160AA			
5.6 nF	1608	0.80±0.10	±5%				C1608C0G2A562J080AC
			±10%				C1608C0G2A562K080AC
	2012	1.25±0.20	±5%		C2012C0G2W562J125AA	C2012C0G2E562J125AA	C2012C0G2A562J125AA
			±10%		C2012C0G2W562K125AA	C2012C0G2E562K125AA	C2012C0G2A562K125AA
		0.85±0.15	±5%				C3216C0G2A562J085AA
	3216		±10%				C3216C0G2A562K085AA
			±2%	C3216C0G2J562G115AA			
		1.15±0.15	±5%	C3216C0G2J562J115AA		C3216C0G2E562J115AA	
			±10%	C3216C0G2J562K115AA		C3216C0G2E562K115AA	
	3225	1.60±0.20	±2%	C3225C0G2J562G160AA			
			±5%	C3225C0G2J562J160AA			
			±10%	C3225C0G2J562K160AA			

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Capacitance range table

C0G (-55 to +125°C, 0±30 ppm/°C)

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers			
				Rated voltage: DC630V	Rated voltage: DC450V	Rated voltage: DC250V	Rated voltage: DC100V
6.8 nF	1608	0.80±0.10	±5%				C1608C0G2A682J080AC
			±10%				C1608C0G2A682K080AC
	2012	1.25±0.20	±5%			C2012C0G2E682J125AA	C2012C0G2A682J125AA
			±10%			C2012C0G2E682K125AA	C2012C0G2A682K125AA
	3216	1.15±0.15	±2%	C3216C0G2J682G115AA			
			±5%	C3216C0G2J682J115AA	C3216C0G2W682J115AA		C3216C0G2A682J115AA
			±10%	C3216C0G2J682K115AA	C3216C0G2W682K115AA		C3216C0G2A682K115AA
		1.60±0.20	±5%			C3216C0G2E682J160AA	
			±10%			C3216C0G2E682K160AA	
	3225	2.00±0.20	±2%	C3225C0G2J682G200AA			
			±5%	C3225C0G2J682J200AA			
			±10%	C3225C0G2J682K200AA			
8.2 nF	1608	0.80±0.10	±5%				C1608C0G2A822J080AC
			±10%				C1608C0G2A822K080AC
	2012	1.25±0.20	±5%			C2012C0G2E822J125AA	C2012C0G2A822J125AA
			±10%			C2012C0G2E822K125AA	C2012C0G2A822K125AA
	3216	1.15±0.15	±5%		C3216C0G2W822J115AA		C3216C0G2A822J115AA
			±10%		C3216C0G2W822K115AA		C3216C0G2A822K115AA
		1.60±0.20	±2%	C3216C0G2J822G160AA			
			±5%	C3216C0G2J822J160AA		C3216C0G2E822J160AA	
			±10%	C3216C0G2J822K160AA		C3216C0G2E822K160AA	
	3225	1.25±0.20	±2%	C3225C0G2J822G125AA			
			±5%	C3225C0G2J822J125AA			
			±10%	C3225C0G2J822K125AA			
10 nF	4532	1.60±0.20	±5%	C4532C0G2J822J160KA			
			±10%	C4532C0G2J822K160KA			
	1608	0.80±0.10	±5%				C1608C0G2A103J080AC
			±10%				C1608C0G2A103K080AC
	2012	1.25±0.20	±5%			C2012C0G2E103J125AA	C2012C0G2A103J125AA
			±10%			C2012C0G2E103K125AA	C2012C0G2A103K125AA
	3216	1.15±0.15	±5%			C3216C0G2E103J115AA	C3216C0G2A103J115AA
			±10%			C3216C0G2E103K115AA	C3216C0G2A103K115AA
		1.60±0.20	±2%	C3216C0G2J103G160AA			
			±5%	C3216C0G2J103J160AA	C3216C0G2W103J160AA		
			±10%	C3216C0G2J103K160AA	C3216C0G2W103K160AA		
	3225	1.25±0.20	±2%	C3225C0G2J103G125AA			
			±5%	C3225C0G2J103J125AA			
			±10%	C3225C0G2J103K125AA			
15 nF	4532	1.60±0.20	±5%	C4532C0G2J103J160KA			
			±10%	C4532C0G2J103K160KA			
	2012	0.85±0.15	±5%				C2012C0G2A153J085AC
			±10%				C2012C0G2A153K085AC
	3216	1.15±0.15	±5%				C3216C0G2A153J115AA
			±10%				C3216C0G2A153K115AA
		1.60±0.30,-0.10	±5%		C3216C0G2W153J160AA		
			±10%		C3216C0G2W153K160AA		
	3225	1.60±0.20	±5%			C3216C0G2E153J160AA	
			±10%			C3216C0G2E153K160AA	
		1.25±0.20	±5%				C3225C0G2A153J125AA
			±10%				C3225C0G2A153K125AA
	4532	2.50±0.30	±2%	C3225C0G2J153G160AA			
			±5%	C3225C0G2J153J160AA			
			±10%	C3225C0G2J153K160AA			
15 nF	4532	2.50±0.30	±5%			C3225C0G2E153J200AA	
			±10%			C3225C0G2E153K200AA	
	3225	1.60±0.20	±5%				
			±10%				
	2012	1.25±0.20	±5%				
			±10%				
	1608	0.80±0.10	±5%				
			±10%				
	3216	1.15±0.15	±5%				
			±10%				
	4532	2.50±0.30	±5%				
			±10%				

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Capacitance range table

C0G (-55 to +125°C, 0±30 ppm/°C)

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers			
				Rated voltage: DC630V	Rated voltage: DC450V	Rated voltage: DC250V	Rated voltage: DC100V
22 nF	2012	1.25±0.20	±5%				C2012C0G2A223J125AC
			±10%				C2012C0G2A223K125AC
	3216	1.60+0.30,-0.10	±5%			C3216C0G2E223J160AA	
			±10%			C3216C0G2E223K160AA	
		1.60±0.20	±5%				C3216C0G2A223J160AA
			±10%				C3216C0G2A223K160AA
	3225	1.60±0.20	±5%			C3225C0G2E223J160AA	C3225C0G2A223J160AA
			±10%			C3225C0G2E223K160AA	C3225C0G2A223K160AA
		2.30±0.20	±2%	C3225C0G2J223G230AA			
			±5%	C3225C0G2J223J230AA	C3225C0G2W223J230AA		
			±10%	C3225C0G2J223K230AA	C3225C0G2W223K230AA		
	4532	1.60±0.20	±5%			C4532C0G2E223J160KA	
			±10%			C4532C0G2E223K160KA	
33 nF	2012	1.25±0.20	±5%				C2012C0G2A333J125AC
			±10%				C2012C0G2A333K125AC
	3216	1.60+0.30,-0.10	±5%				C3216C0G2A333J160AA
			±10%				C3216C0G2A333K160AA
		2.00±0.20	±5%				C3225C0G2A333J200AA
			±10%				C3225C0G2A333K200AA
	3225	2.30±0.20	±5%			C3225C0G2E333J230AA	
			±10%			C3225C0G2E333K230AA	
		2.50±0.30	±2%	C3225C0G2J333G250AA			
			±5%	C3225C0G2J333J250AA	C3225C0G2W333J250AA		
			±10%	C3225C0G2J333K250AA	C3225C0G2W333K250AA		
	4532	2.00±0.20	±5%	C4532C0G2J333J200KA		C4532C0G2E333J200KA	
			±10%	C4532C0G2J333K200KA		C4532C0G2E333K200KA	
47 nF	3216	1.15±0.15	±5%				C3216C0G2A473J115AC
			±10%				C3216C0G2A473K115AC
		2.30±0.20	±5%				C3225C0G2A473J230AA
			±10%				C3225C0G2A473K230AA
	3225	2.50±0.30	±5%			C3225C0G2E473J250AA	
			±10%			C3225C0G2E473K250AA	
		2.00±0.20	±5%				C4532C0G2A473J200KA
			±10%				C4532C0G2A473K200KA
	4532	2.30±0.20	±5%		C4532C0G2W473J230KA		
			±10%		C4532C0G2W473K230KA		
		3.20±0.30	±5%	C4532C0G2J473J320KA		C4532C0G2E473J320KA	
			±10%	C4532C0G2J473K320KA		C4532C0G2E473K320KA	
68 nF	3216	1.60±0.20	±5%				C3216C0G2A683J160AC
			±10%				C3216C0G2A683K160AC
	3225	2.30±0.20	±5%				C3225C0G2A683J230AA
			±10%				C3225C0G2A683K230AA
		2.30±0.20	±5%			C4532C0G2E683J230KN	
			±10%			C4532C0G2E683K230KN	
	4532	2.50±0.30	±5%				C4532C0G2A683J250KA
			±10%				C4532C0G2A683K250KA
		3.20±0.30	±5%		C4532C0G2W683J320KA		
			±10%		C4532C0G2W683K320KA		
	5750	2.30±0.20	±2%	C5750C0G2J683G230KC			
			±5%	C5750C0G2J683J230KC			
			±10%	C5750C0G2J683K230KC			
100 nF	3216	1.60±0.20	±5%				C3216C0G2A104J160AC
			±10%				C3216C0G2A104K160AC
	4532	3.20±0.30	±5%			C4532C0G2E104J320KN	C4532C0G2A104J320KA
			±10%			C4532C0G2E104K320KN	C4532C0G2A104K320KA
	5750	2.80±0.30	±2%	C5750C0G2J104G280KC			
			±5%	C5750C0G2J104J280KC	C5750C0G2W104J280KA		
150 nF	5750	2.30±0.20	±5%			C5750C0G2E154J230KN	C5750C0G2A154J230KA
			±10%			C5750C0G2E154K230KN	C5750C0G2A154K230KA

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MULTILAYER CERAMIC CHIP CAPACITORS



Capacitance range table

X5R (-55 to +85°C, ±15%)

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers		
				Rated voltage: DC630V	Rated voltage: DC250V	Rated voltage: DC100V
1 nF	1608	0.80±0.10	±10%			C1608X5R2A102K080AA
			±20%			C1608X5R2A102M080AA
	2012	0.85±0.15	±10%		C2012X5R2E102K085AA	
			±20%		C2012X5R2E102M085AA	
	3216	1.15±0.15	±10%	C3216X5R2J102K115AA		
			±20%	C3216X5R2J102M115AA		
1.5 nF	1608	0.80±0.10	±10%			C1608X5R2A152K080AA
			±20%			C1608X5R2A152M080AA
	2012	0.85±0.15	±10%		C2012X5R2E152K085AA	
			±20%		C2012X5R2E152M085AA	
	3216	1.15±0.15	±10%	C3216X5R2J152K115AA		
			±20%	C3216X5R2J152M115AA		
2.2 nF	1608	0.80±0.10	±10%			C1608X5R2A222K080AA
			±20%			C1608X5R2A222M080AA
	2012	0.85±0.15	±10%		C2012X5R2E222K085AA	
			±20%		C2012X5R2E222M085AA	
	3216	1.15±0.15	±10%	C3216X5R2J222K115AA		
			±20%	C3216X5R2J222M115AA		
3.3 nF	1608	0.80±0.10	±10%			C1608X5R2A332K080AA
			±20%			C1608X5R2A332M080AA
	2012	0.85±0.15	±10%		C2012X5R2E332K085AA	
			±20%		C2012X5R2E332M085AA	
	3216	1.15±0.15	±10%	C3216X5R2J332K115AA		
			±20%	C3216X5R2J332M115AA		
4.7 nF	1608	0.80±0.10	±10%			C1608X5R2A472K080AA
			±20%			C1608X5R2A472M080AA
	2012	0.85±0.15	±10%		C2012X5R2E472K085AA	
			±20%		C2012X5R2E472M085AA	
	3216	1.15±0.15	±10%	C3216X5R2J472K115AA		
			±20%	C3216X5R2J472M115AA		
6.8 nF	1608	0.80±0.10	±10%			C1608X5R2A682K080AA
			±20%			C1608X5R2A682M080AA
	2012	1.25±0.20	±10%		C2012X5R2E682K125AA	
			±20%		C2012X5R2E682M125AA	
	3216	1.15±0.15	±10%	C3216X5R2J682K115AA		
			±20%	C3216X5R2J682M115AA		
10 nF	1608	0.80±0.10	±10%			C1608X5R2A103K080AA
			±20%			C1608X5R2A103M080AA
	2012	1.25±0.20	±10%		C2012X5R2E103K125AA	
			±20%		C2012X5R2E103M125AA	
	3216	1.15±0.15	±10%	C3216X5R2J103K115AA		
			±20%	C3216X5R2J103M115AA		
15 nF	1608	0.80±0.10	±10%			C1608X5R2A153K080AA
			±20%			C1608X5R2A153M080AA
	2012	1.25±0.20	±10%		C2012X5R2E153K125AA	
			±20%		C2012X5R2E153M125AA	
	3216	1.30±0.20	±10%	C3216X5R2J153K130AA		
			±20%	C3216X5R2J153M130AA		

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MULTILAYER CERAMIC CHIP CAPACITORS



Capacitance range table

X5R (-55 to +85°C, ±15%)

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers		
				Rated voltage: DC630V	Rated voltage: DC250V	Rated voltage: DC100V
22 nF	1608	0.80±0.10	±10%			C1608X5R2A223K080AA
			±20%			C1608X5R2A223M080AA
	2012	1.25±0.20	±10%		C2012X5R2E223K125AA	
			±20%		C2012X5R2E223M125AA	
	3216	1.30±0.20	±10%	C3216X5R2J223K130AA		
			±20%	C3216X5R2J223M130AA		
33 nF	2012	1.25±0.20	±10%			C2012X5R2A333K125AA
			±20%			C2012X5R2A333M125AA
	3216	1.60±0.20	±10%	C3216X5R2J333K160AA	C3216X5R2E333K160AA	
			±20%	C3216X5R2J333M160AA	C3216X5R2E333M160AA	
47 nF	2012	1.25±0.20	±10%			C2012X5R2A473K125AA
			±20%			C2012X5R2A473M125AA
	3216	1.60±0.20	±10%		C3216X5R2E473K160AA	
			±20%		C3216X5R2E473M160AA	
	3225	2.00±0.20	±10%	C3225X5R2J473K200AA		
			±20%	C3225X5R2J473M200AA		
68 nF	2012	0.85±0.15	±10%			C2012X5R2A683K085AA
			±20%			C2012X5R2A683M085AA
	3216	1.60±0.20	±10%		C3216X5R2E683K160AA	
			±20%		C3216X5R2E683M160AA	
	3225	2.00±0.20	±10%	C3225X5R2J683K200AA		
			±20%	C3225X5R2J683M200AA		
100 nF	2012	1.25±0.20	±10%			C2012X5R2A104K125AA
			±20%			C2012X5R2A104M125AA
	3216	1.60±0.20	±10%		C3216X5R2E104K160AA	
			±20%		C3216X5R2E104M160AA	
	4532	2.30±0.20	±10%	C4532X5R2J104K230KA		
			±20%	C4532X5R2J104M230KA		
150 nF	3216	1.60±0.20	±10%			C3216X5R2A154K160AA
			±20%			C3216X5R2A154M160AA
	3225	2.00±0.20	±10%		C3225X5R2E154K200AA	
			±20%		C3225X5R2E154M200AA	
	5750	1.60±0.20	±10%	C5750X5R2J154K160KA		
			±20%	C5750X5R2J154M160KA		
220 nF	3216	1.15±0.15	±10%			C3216X5R2A224K115AA
			±20%			C3216X5R2A224M115AA
	3225	2.00±0.20	±10%		C3225X5R2E224K200AA	
			±20%		C3225X5R2E224M200AA	
	5750	2.30±0.20	±10%	C5750X5R2J224K230KA		
			±20%	C5750X5R2J224M230KA		
330 nF	3216	1.30±0.20	±10%			C3216X5R2A334K130AA
			±20%			C3216X5R2A334M130AA
	4532	2.30±0.20	±10%		C4532X5R2E334K230KA	
			±20%		C4532X5R2E334M230KA	
470 nF	3216	1.60±0.20	±10%			C3216X5R2A474K160AA
			±20%			C3216X5R2A474M160AA
	4532	2.30±0.20	±10%		C4532X5R2E474K230KA	
			±20%		C4532X5R2E474M230KA	

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MULTILAYER CERAMIC CHIP CAPACITORS



Capacitance range table

X5R (-55 to +85°C, ±15%)

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers	
				Rated voltage: DC250V	Rated voltage: DC100V
680 nF	3216	1.60±0.20	±10%		C3216X5R2A684K160AA
			±20%		C3216X5R2A684M160AA
	5750	2.30±0.20	±10%	C5750X5R2E684K230KA	
			±20%	C5750X5R2E684M230KA	
1 µF	3216	1.60±0.20	±10%		C3216X5R2A105K160AA
			±20%		C3216X5R2A105M160AA
	5750	2.30±0.20	±10%	C5750X5R2E105K230KA	
			±20%	C5750X5R2E105M230KA	
1.5 µF	3225	2.00±0.20	±10%		C3225X5R2A155K200AB
			±20%		C3225X5R2A155M200AB
2.2 µF	3225	2.30±0.20	±10%		C3225X5R2A225K230AB
			±20%		C3225X5R2A225M230AB
3.3 µF	5750	2.30±0.20	±10%		C5750X5R2A335K230KA
			±20%		C5750X5R2A335M230KA
4.7 µF	2012	1.25+0.25,-0.15	±10%		C2012X5R2A475K125AC
	5750	2.30±0.20	±10%		C5750X5R2A475K230KA
			±20%		C5750X5R2A475M230KA

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Capacitance range table

X6S (-55 to +105°C, ±22%)

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers	
				Rated voltage: DC450V	Rated voltage: DC100V
1 µF	5750	2.50±0.30	±10%	C5750X6S2W105K250KA	
			±20%	C5750X6S2W105M250KA	
2.2 µF	5750	2.50±0.30	±10%	C5750X6S2W225K250KA	
			±20%	C5750X6S2W225M250KA	
10 µF	3216	1.60+0.30,-0.10	±10%		C3216X6S2A106K160AC

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MULTILAYER CERAMIC CHIP CAPACITORS



Capacitance range table

X7R (-55 to +125°C, ±15%)

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers		
				Rated voltage: DC630V	Rated voltage: DC250V	Rated voltage: DC100V
1 nF	1608	0.80±0.10	±10%			C1608X7R2A102K080AA
			±20%			C1608X7R2A102M080AA
	2012	0.85±0.15	±10%		C2012X7R2E102K085AA	C2012X7R2A102K085AA
			±20%		C2012X7R2E102M085AA	C2012X7R2A102M085AA
	3216	1.15±0.15	±10%	C3216X7R2J102K115AA		
			±20%	C3216X7R2J102M115AA		
1.5 nF	1608	0.80±0.10	±10%			C1608X7R2A152K080AA
			±20%			C1608X7R2A152M080AA
	2012	0.85±0.15	±10%		C2012X7R2E152K085AA	C2012X7R2A152K085AA
			±20%		C2012X7R2E152M085AA	C2012X7R2A152M085AA
	3216	1.15±0.15	±10%	C3216X7R2J152K115AA		
			±20%	C3216X7R2J152M115AA		
2.2 nF	1608	0.80±0.10	±10%			C1608X7R2A222K080AA
			±20%			C1608X7R2A222M080AA
	2012	0.85±0.15	±10%		C2012X7R2E222K085AA	C2012X7R2A222K085AA
			±20%		C2012X7R2E222M085AA	C2012X7R2A222M085AA
	3216	1.15±0.15	±10%	C3216X7R2J222K115AA		
			±20%	C3216X7R2J222M115AA		
3.3 nF	1608	0.80±0.10	±10%			C1608X7R2A332K080AA
			±20%			C1608X7R2A332M080AA
	2012	0.85±0.15	±10%		C2012X7R2E332K085AA	C2012X7R2A332K085AA
			±20%		C2012X7R2E332M085AA	C2012X7R2A332M085AA
	3216	1.15±0.15	±10%	C3216X7R2J332K115AA		
			±20%	C3216X7R2J332M115AA		
4.7 nF	1608	0.80±0.10	±10%			C1608X7R2A472K080AA
			±20%			C1608X7R2A472M080AA
	2012	0.85±0.15	±10%		C2012X7R2E472K085AA	C2012X7R2A472K085AA
			±20%		C2012X7R2E472M085AA	C2012X7R2A472M085AA
	3216	1.15±0.15	±10%	C3216X7R2J472K115AA		
			±20%	C3216X7R2J472M115AA		
6.8 nF	1608	0.80±0.10	±10%			C1608X7R2A682K080AA
			±20%			C1608X7R2A682M080AA
	2012	0.85±0.15	±10%			C2012X7R2A682K085AA
			±20%			C2012X7R2A682M085AA
		1.25±0.20	±10%		C2012X7R2E682K125AA	
			±20%		C2012X7R2E682M125AA	
10 nF	3216	1.15±0.15	±10%	C3216X7R2J682K115AA		
			±20%	C3216X7R2J682M115AA		
	1608	0.80±0.10	±10%			C1608X7R2A103K080AA
			±20%			C1608X7R2A103M080AA
	2012	0.85±0.15	±10%			C2012X7R2A103K085AA
			±20%			C2012X7R2A103M085AA
		1.25±0.20	±10%		C2012X7R2E103K125AA	
			±20%		C2012X7R2E103M125AA	
10 nF	3216	1.15±0.15	±10%	C3216X7R2J103K115AA		
			±20%	C3216X7R2J103M115AA		

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MULTILAYER CERAMIC CHIP CAPACITORS



Capacitance range table

X7R (-55 to +125°C, ±15%)

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers		
				Rated voltage: DC630V	Rated voltage: DC250V	Rated voltage: DC100V
15 nF	1608	0.80±0.10	±10%			C1608X7R2A153K080AA
			±20%			C1608X7R2A153M080AA
	2012	1.25±0.20	±10%		C2012X7R2E153K125AA	C2012X7R2A153K125AA
			±20%		C2012X7R2E153M125AA	C2012X7R2A153M125AA
	3216	1.15±0.15	±10%		C3216X7R2E153K115AA	
			±20%		C3216X7R2E153M115AA	
		1.30±0.20	±10%	C3216X7R2J153K130AA		
			±20%	C3216X7R2J153M130AA		
22 nF	1608	0.80±0.10	±10%			C1608X7R2A223K080AA
			±20%			C1608X7R2A223M080AA
	2012	1.25±0.20	±10%		C2012X7R2E223K125AA	C2012X7R2A223K125AA
			±20%		C2012X7R2E223M125AA	C2012X7R2A223M125AA
	3216	1.15±0.15	±10%		C3216X7R2E223K115AA	
			±20%		C3216X7R2E223M115AA	
		1.30±0.20	±10%	C3216X7R2J223K130AA		
			±20%	C3216X7R2J223M130AA		
33 nF	2012	1.25±0.20	±10%			C2012X7R2A333K125AA
			±20%			C2012X7R2A333M125AA
	3216	1.15±0.15	±10%			C3216X7R2A333K115AA
			±20%			C3216X7R2A333M115AA
		1.60±0.20	±10%	C3216X7R2J333K160AA	C3216X7R2E333K160AA	
			±20%	C3216X7R2J333M160AA	C3216X7R2E333M160AA	
47 nF	2012	1.25±0.20	±10%			C2012X7R2A473K125AA
			±20%			C2012X7R2A473M125AA
	3216	1.15±0.15	±10%			C3216X7R2A473K115AA
			±20%			C3216X7R2A473M115AA
		1.60±0.20	±10%	C3216X7R2E473K160AA		
			±20%	C3216X7R2E473M160AA		
	3225	2.00±0.20	±10%	C3225X7R2J473K200AA		
			±20%	C3225X7R2J473M200AA		
68 nF	2012	0.85±0.15	±10%			C2012X7R2A683K085AA
			±20%			C2012X7R2A683M085AA
	3216	1.60±0.20	±10%		C3216X7R2E683K160AA	C3216X7R2A683K160AA
			±20%		C3216X7R2E683M160AA	C3216X7R2A683M160AA
	3225	2.00±0.20	±10%	C3225X7R2J683K200AA		
			±20%	C3225X7R2J683M200AA		
	4532	1.60±0.20	±10%	C4532X7R2J683K160KA		
			±20%	C4532X7R2J683M160KA		
100 nF	2012	1.25±0.20	±10%			C2012X7R2A104K125AA
			±20%			C2012X7R2A104M125AA
	3216	1.60±0.20	±10%		C3216X7R2E104K160AA	C3216X7R2A104K160AA
			±20%		C3216X7R2E104M160AA	C3216X7R2A104M160AA
	3225	2.00±0.20	±10%		C3225X7R2E104K200AA	
			±20%		C3225X7R2E104M200AA	
	4532	2.30±0.20	±10%	C4532X7R2J104K230KA		
			±20%	C4532X7R2J104M230KA		

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MULTILAYER CERAMIC CHIP CAPACITORS



Capacitance range table

X7R (-55 to +125°C, ±15%)

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers		
				Rated voltage: DC630V	Rated voltage: DC250V	Rated voltage: DC100V
150 nF	3216	1.60±0.20	±10%			C3216X7R2A154K160AA
			±20%			C3216X7R2A154M160AA
	3225	2.00±0.20	±10%		C3225X7R2E154K200AA	
			±20%		C3225X7R2E154M200AA	
	4532	1.60±0.20	±10%		C4532X7R2E154K160KA	
			±20%		C4532X7R2E154M160KA	
220 nF	3216	1.15±0.15	±10%			C3216X7R2A224K115AA
			±20%			C3216X7R2A224M115AA
	3225	2.00±0.20	±10%		C3225X7R2E224K200AA	
			±20%		C3225X7R2E224M200AA	
	4532	2.30±0.20	±10%		C4532X7R2E224K230KA	
			±20%		C4532X7R2E224M230KA	
330 nF	3216	1.30±0.20	±10%			C3216X7R2A334K130AA
			±20%			C3216X7R2A334M130AA
	3225	2.00±0.20	±10%			C3225X7R2A334K200AA
			±20%			C3225X7R2A334M200AA
	4532	2.30±0.20	±10%		C4532X7R2E334K230KA	
			±20%		C4532X7R2E334M230KA	
470 nF	3216	1.60±0.20	±10%			C3216X7R2A474K160AA
			±20%			C3216X7R2A474M160AA
	3225	2.00±0.20	±10%			C3225X7R2A474K200AA
			±20%			C3225X7R2A474M200AA
	4532	2.30±0.20	±10%		C4532X7R2E474K230KA	
			±20%		C4532X7R2E474M230KA	
680 nF	3216	1.60±0.20	±10%			C3216X7R2A684K160AA
			±20%			C3216X7R2A684M160AA
	3225	1.60±0.20	±10%			C3225X7R2A684K160AA
			±20%			C3225X7R2A684M160AA
	4532	2.30±0.20	±10%			C4532X7R2A684K230KA
			±20%			C4532X7R2A684M230KA
1 µF	5750	1.60±0.20	±10%			C5750X7R2A684K160KA
			±20%			C5750X7R2A684M160KA
	5750	2.30±0.20	±10%		C5750X7R2E684K230KA	
			±20%		C5750X7R2E684M230KA	
	1608	0.80+0.20,-0.10	±10%			C1608X7R2A105K080AC
			±20%			C1608X7R2A105M080AC
1 µF	3216	1.60±0.20	±10%			C3216X7R2A105K160AA
			±20%			C3216X7R2A105M160AA
	3225	2.00±0.20	±10%			C3225X7R2A105K200AA
			±20%			C3225X7R2A105M200AA
	4532	2.30±0.20	±10%			C4532X7R2A105K230KA
			±20%			C4532X7R2A105M230KA
1 µF	5750	2.30±0.20	±10%		C5750X7R2E105K230KA	C5750X7R2A105K230KA
			±20%		C5750X7R2E105M230KA	C5750X7R2A105M230KA

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Capacitance range table

X7R (-55 to +125°C, ±15%)

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers
				Rated voltage: DC100V
1.5 µF	3225	2.00±0.20	±10%	C3225X7R2A155K200AB
			±20%	C3225X7R2A155M200AB
	4532	2.30±0.20	±10%	C4532X7R2A155K230KA
			±20%	C4532X7R2A155M230KA
	5750	2.30±0.20	±10%	C5750X7R2A155K230KA
			±20%	C5750X7R2A155M230KA
2.2 µF	2012	1.25+0.25,-0.15	±10%	C2012X7R2A225K125AC
	3225	2.30±0.20	±10%	C3225X7R2A225K230AB
			±20%	C3225X7R2A225M230AB
	4532	2.30±0.20	±10%	C4532X7R2A225K230KA
			±20%	C4532X7R2A225M230KA
	5750	2.30±0.20	±10%	C5750X7R2A225K230KA
±20%			C5750X7R2A225M230KA	
3.3 µF	5750	2.30±0.20	±10%	C5750X7R2A335K230KA
			±20%	C5750X7R2A335M230KA
4.7 µF	3216	1.60+0.30,-0.10	±10%	C3216X7R2A475K160AC
	5750	2.30±0.20	±10%	C5750X7R2A475K230KA
			±20%	C5750X7R2A475M230KA
10 µF	3225	2.50±0.30	±10%	C3225X7R2A106K250AC

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Capacitance range table

X7S (-55 to +125°C, ±22%)

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers
				Rated voltage: DC100V
1 nF	1005	0.50±0.05	±10%	C1005X7S2A102K050BB
			±20%	C1005X7S2A102M050BB
1.5 nF	1005	0.50±0.05	±10%	C1005X7S2A152K050BB
			±20%	C1005X7S2A152M050BB
2.2 nF	1005	0.50±0.05	±10%	C1005X7S2A222K050BB
			±20%	C1005X7S2A222M050BB
3.3 nF	1005	0.50±0.05	±10%	C1005X7S2A332K050BB
			±20%	C1005X7S2A332M050BB
4.7 nF	1005	0.50±0.05	±10%	C1005X7S2A472K050BB
			±20%	C1005X7S2A472M050BB
6.8 nF	1005	0.50±0.05	±10%	C1005X7S2A682K050BB
			±20%	C1005X7S2A682M050BB
10 nF	1005	0.50±0.05	±10%	C1005X7S2A103K050BB
			±20%	C1005X7S2A103M050BB
33 nF	1608	0.80±0.10	±10%	C1608X7S2A333K080AB
			±20%	C1608X7S2A333M080AB
47 nF	1608	0.80±0.10	±10%	C1608X7S2A473K080AB
			±20%	C1608X7S2A473M080AB
68 nF	1608	0.80±0.10	±10%	C1608X7S2A683K080AB
			±20%	C1608X7S2A683M080AB
100 nF	1608	0.80±0.10	±10%	C1608X7S2A104K080AB
			±20%	C1608X7S2A104M080AB
150 nF	2012	0.85±0.15	±10%	C2012X7S2A154K085AB
			±20%	C2012X7S2A154M085AB
220 nF	2012	0.85±0.15	±10%	C2012X7S2A224K085AB
			±20%	C2012X7S2A224M085AB
330 nF	2012	1.25±0.20	±10%	C2012X7S2A334K125AB
			±20%	C2012X7S2A334M125AB
470 nF	2012	1.25±0.20	±10%	C2012X7S2A474K125AB
			±20%	C2012X7S2A474M125AB
680 nF	2012	1.25±0.20	±10%	C2012X7S2A684K125AB
			±20%	C2012X7S2A684M125AB
1 µF	2012	1.25±0.20	±10%	C2012X7S2A105K125AB
			±20%	C2012X7S2A105M125AB
1.5 µF	3216	1.60±0.20	±10%	C3216X7S2A155K160AB
			±20%	C3216X7S2A155M160AB
2.2 µF	3216	1.60±0.20	±10%	C3216X7S2A225K160AB
			±20%	C3216X7S2A225M160AB
	3216	1.60+0.30,-0.10	±10%	C3216X7S2A335K160AB
			±20%	C3216X7S2A335M160AB
3.3 µF	3225	2.00±0.20	±10%	C3225X7S2A335K200AB
			±20%	C3225X7S2A335M200AB
	4532	2.00±0.20	±10%	C4532X7S2A335K200KB
			±20%	C4532X7S2A335M200KB
4.7 µF	3225	2.00±0.20	±10%	C3225X7S2A475K200AB
			±20%	C3225X7S2A475M200AB
	4532	2.30±0.20	±10%	C4532X7S2A475K230KB
			±20%	C4532X7S2A475M230KB
6.8 µF	5750	2.00±0.20	±10%	C5750X7S2A685K200KB
			±20%	C5750X7S2A685M200KB
10 µF	5750	2.30±0.20	±10%	C5750X7S2A106K230KB
			±20%	C5750X7S2A106M230KB
15 µF	5750	2.50±0.30	±20%	C5750X7S2A156M250KB
22 µF	5750	2.80±0.30	±20%	C5750X7S2A226M280KB

•Gray: NRND (Not Recommended for New Designs)

•Click the catalog numbers for details.

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Capacitance range table

X7T (-55 to +125°C, +22,-33%)

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers			
				Rated voltage: DC630V	Rated voltage: DC450V	Rated voltage: DC350V	Rated voltage: DC250V
10 nF	2012	0.85±0.15	±10%		C2012X7T2W103K085AA	C2012X7T2V103K085AA	
			±20%		C2012X7T2W103M085AA	C2012X7T2V103M085AA	
	3216	0.85±0.15	±10%	C3216X7T2J103K085AC			
			±20%	C3216X7T2J103M085AC			
15 nF	2012	0.85±0.15	±10%		C2012X7T2W153K085AA	C2012X7T2V153K085AA	
			±20%		C2012X7T2W153M085AA	C2012X7T2V153M085AA	
	3216	0.85±0.15	±10%	C3216X7T2J153K085AC			
			±20%	C3216X7T2J153M085AC			
22 nF	2012	1.25±0.20	±10%		C2012X7T2W223K125AA	C2012X7T2V223K125AA	
			±20%		C2012X7T2W223M125AA	C2012X7T2V223M125AA	
	3216	1.15±0.15	±10%	C3216X7T2J223K115AC			
			±20%	C3216X7T2J223M115AC			
33 nF	2012	1.25±0.20	±10%		C2012X7T2W333K125AA	C2012X7T2V333K125AA	C2012X7T2E333K125AA
			±20%		C2012X7T2W333M125AA	C2012X7T2V333M125AA	C2012X7T2E333M125AA
	3216	1.15±0.15	±10%	C3216X7T2J333K115AC			
			±20%	C3216X7T2J333M115AC			
47 nF	2012	1.25±0.20	±10%		C2012X7T2W473K125AA	C2012X7T2V473K125AA	C2012X7T2E473K125AA
			±20%		C2012X7T2W473M125AA	C2012X7T2V473M125AA	C2012X7T2E473M125AA
	3216	1.60±0.20	±10%	C3216X7T2J473K160AC			
			±20%	C3216X7T2J473M160AC			
68 nF	2012	1.25±0.20	±10%				C2012X7T2E683K125AA
			±20%				C2012X7T2E683M125AA
	3216	1.30±0.20	±10%		C3216X7T2W683K130AA	C3216X7T2V683K130AA	
			±20%		C3216X7T2W683M130AA	C3216X7T2V683M130AA	
100 nF	2012	1.25±0.20	±10%				C2012X7T2E104K125AA
			±20%				C2012X7T2E104M125AA
	3216	1.60±0.20	±10%		C3216X7T2W104K160AA	C3216X7T2V104K160AA	
			±20%		C3216X7T2W104M160AA	C3216X7T2V104M160AA	
	3225	1.60±0.20	±10%	C3225X7T2J104K160AC			
			±20%	C3225X7T2J104M160AC			
150 nF	3216	1.30±0.20	±10%				C3216X7T2E154K130AA
			±20%				C3216X7T2E154M130AA
	3225	2.00±0.20	±10%	C3225X7T2J154K200AC			
			±20%	C3225X7T2J154M200AC			
	4532	1.60±0.20	±10%	C4532X7T2J154K160KC			
			±20%	C4532X7T2J154M160KC			
220 nF	3216	1.60±0.20	±10%				C3216X7T2E224K160AA
			±20%				C3216X7T2E224M160AA
	3225	2.00±0.20	±10%		C3225X7T2W224K200AA		
			±20%		C3225X7T2W224M200AA		
300 nF	4532	2.50±0.30	±10%	C4532X7T2J224K200KC			
			±20%	C4532X7T2J224M200KC			
	3225	2.00±0.20	±10%	C4532X7T2J304K250KA			
			±20%	C4532X7T2J304M250KA			
330 nF	3225	2.00±0.20	±10%				C3225X7T2E334K200AA
			±20%				C3225X7T2E334M200AA
	4532	1.60±0.20	±10%		C4532X7T2W334K160KA		
			±20%		C4532X7T2W334M160KA		
470 nF	5750	2.00±0.20	±10%	C5750X7T2J334K200KC			
			±20%	C5750X7T2J334M200KC			
	4532	2.30±0.20	±10%		C4532X7T2W474K230KA		
			±20%		C4532X7T2W474M230KA		
680 nF	5750	2.50±0.30	±10%	C5750X7T2J474K250KC			
			±20%	C5750X7T2J474M250KC			
	4532	1.60±0.20	±10%				C4532X7T2E684K160KA
			±20%				C4532X7T2E684M160KA
1 µF	5750	2.00±0.20	±10%		C5750X7T2W684K200KA		
			±20%		C5750X7T2W684M200KA		
	4532	2.50±0.30	±10%				C4532X7T2E105K250KA
			±20%				C4532X7T2E105M250KA
1.5 µF	5750	2.50±0.30	±10%		C5750X7T2W105K250KA		
			±20%		C5750X7T2W105M250KA		
2.2 µF	5750	2.50±0.30	±10%				C5750X7T2E155K200KA
			±20%				C5750X7T2E155M200KA
	5750	2.50±0.30	±10%				C5750X7T2E225K250KA
			±20%				C5750X7T2E225M250KA

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