TDK

September 2026

MULTILAYER CERAMIC CHIP CAPACITORS

Commercial grade, high voltage (1,000V and over)

C series

C3216	**3216 [CC1206]**
C3225	**3225 [CC1210]**
C4520	**4520 [CC1808]**
C4532	**4532 [CC1812]**
C5750	**5750 [CC2220]**

Dimensions code: JIS [EIA]



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

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C series

High voltage (1,000V and over)

Type C3216[CC1206], C3225[CC1210], C4520[CC1808], C4532[CC1812], C5750[CC2220]

■ SERIES OVERVIEW

High voltage C series, commercial grade of TDK's multilayer ceramic chip capacitor, is a product having a high withstanding voltage characteristic. The lineup is voltage rating of 1,000V to 3,000V with capacitance range up to 47nF.

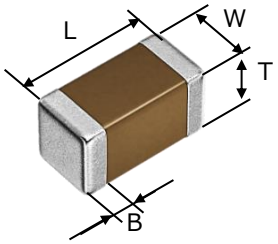
■ FEATURES

・Voltage rating: 1,000V, 1,250V, 2,000V, 3,000V
・Operating temperature range: -55 to +125℃
・C0G type having excellent stable temperature and DC bias characteristics is also available.

■ APPLICATIONS

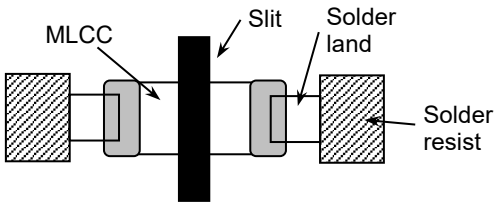
・Decoupling, snubber and resonant circuits of high voltage circuits
・Wireless charging units, DC-DC converters, Inverters

■ SHAPE & DIMENSIONS



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

■ RECOMMENDED CONDITIONS



・It is recommended to provide a slit (about 1mm width) in the board under the components to improve washing flux. And please make sure to dry detergent up completely before.
・It is recommended to use low activated flux (Chlorine content: less than 0.1wt%) such rosin due to high voltage usage.
・When mounting on an aluminum substrate, capacitors are more likely to be affected by heat stress from the substrate. Please inquire separate specification when mounted on the substrate.

Dimensions in mm

Type	L	W	T	B
C3216	3.20±0.20	1.60±0.20	1.60±0.20	0.20 min.
C3225	3.20±0.40	2.50±0.30	2.50±0.30	
C4520	4.50±0.40	2.00±0.20	2.00±0.20	
C4532	4.50±0.40	3.20±0.40	2.50±0.30	
C5750	5.70±0.40	5.00±0.40	2.80±0.30	

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

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CATALOG NUMBER CONSTRUCTION

C	5750	C0G	3B	333	G	280	K	C
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

(1) Series

(2) Dimensions code

Dimensions code	EIA	Length (mm)	Width (mm)	Terminal width (mm)
3216	CC1206	3.20	1.60	
3225	CC1210	3.20	2.50	
4520	CC1808	4.50	2.00	0.20 min.
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/℃	
X7R	±15%	-55 to +125 ℃
X7S	±22%	

(4) Rated voltage (DC)

Code	Voltage (DC)
3A	1,000 V
3B	1,250 V
3D	2,000 V
3F	3,000 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
F	±1 %
G	±2 %
J	±5 %
K	±10 %
M	±20 %

(7) Nominal thickness

Code	Nominal thickness
085	0.85 mm
110	1.10 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

(8) Packaging style

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

(9) Special reserved code

Code	Description
A, C	TDK internal code

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Capacitance range chart — C3216 [CC1206]

Capacitance		X7S	
(pF)	Code	3D (2,000V)	3A (1,000V)
100	101	0.85 mm	
220	221	0.85 mm	
470	471	1.30 mm	
1,000	102		0.85 mm
2,200	222		1.30 mm

Nominal thickness 0.85 mm 1.30 mm

・Click the charts for details.
・For details such as the catalog numbers, please refer to the capacitance range table on page 7 and after.

Capacitance range chart — C3225 [CC1210]

Capacitance		C0G		X7S	
(pF)	Code	3B (1,250V)	3A (1,000V)	3D (2,000V)	3A (1,000V)
1,000	102	2.00 mm	2.00 mm	2.00 mm	
1,200	122	2.00 mm	2.00 mm		
1,500	152	2.00 mm	2.00 mm		
1,800	182	2.00 mm	2.00 mm		
2,200	222	2.00 mm	2.00 mm	2.50 mm	
2,700	272	2.00 mm	2.00 mm		
3,300	332	2.00 mm	2.00 mm		
3,900	392	2.00 mm	2.00 mm		
4,700	472	2.00 mm	2.00 mm		1.60 mm
5,600	562	2.00 mm	2.00 mm		
6,800	682	2.30 mm	2.00 mm		
8,200	822	2.50 mm	2.30 mm		
10,000	103	2.50 mm	2.50 mm		
12,000	123		2.50 mm		
15,000	153		2.50 mm		
18,000	183		2.50 mm		
22,000	223	2.50 mm	2.50 mm		
33,000	333		2.50 mm		

Nominal thickness 1.60 mm 2.00 mm 2.30 mm 2.50 mm

・Click the charts for details.
・For details such as the catalog numbers, please refer to the capacitance range table on page 7 and after.

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Capacitance range chart — C4520 [CC1808]

Capacitance		C0G	X7R	
(pF)	Code	3F (3,000V)	3D (2,000V)	3A (1,000V)
10	100			
15	150			
22	220			
33	330			
47	470			
68	680			
100	101			
470	471			
1,000	102			

Nominal thickness 0.85 mm 1.10 mm 1.30 mm 1.60 mm 2.00 mm

・Click the charts for details.
・For details such as the catalog numbers, please refer to the capacitance range table on page 7 and after.

Capacitance range chart — C4532 [CC1812]

Capacitance		C0G	X7R	
(pF)	Code	3F (3,000V)	3D (2,000V)	3A (1,000V)
100	101			
150	151			
220	221			
330	331			
2,200	222			
4,700	472			
10,000	103			

Nominal thickness 1.30 mm 1.60 mm 2.00 mm 2.50 mm

・Click the charts for details.
・For details such as the catalog numbers, please refer to the capacitance range table on page 7 and after.

Capacitance range chart — C5750 [CC2220]

Capacitance		C0G		X7S	
(pF)	Code	3B (1,250V)	3A (1,000V)	3D (2,000V)	3A (1,000V)
4,700	472				
10,000	103				
15,000	153				
22,000	223				
33,000	333				
47,000	473				

Nominal thickness 1.60 mm 2.00 mm 2.50 mm 2.80 mm

・Click the charts for details.
・For details such as the catalog numbers, please refer to the capacitance range table on page 7 and after.

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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: DC3000V	Rated voltage: DC1250V	Rated voltage: DC1000V
10 pF	4520	0.85±0.15	±1%	C4520C0G3F100F085KA		
15 pF	4520	1.10±0.20	±10%	C4520C0G3F150K110KA		
22 pF	4520	1.10±0.20	±10%	C4520C0G3F220K110KA		
33 pF	4520	1.60±0.20	±10%	C4520C0G3F330K160KA		
47 pF	4520	1.60±0.20	±10%	C4520C0G3F470K160KA		
68 pF	4520	2.00±0.20	±10%	C4520C0G3F680K200KA		
100 pF	4520	2.00±0.20	±10%	C4520C0G3F101K200KA		
	4532	1.60±0.20	±10%	C4532C0G3F101K160KA		
150 pF	4532	1.60±0.20	±10%	C4532C0G3F151K160KA		
220 pF	4532	2.00±0.20	±10%	C4532C0G3F221K200KA		
330 pF	4532	2.50±0.30	±10%	C4532C0G3F331K250KA		
1 nF	3225	2.00±0.20	±2%		C3225C0G3B102G200AC	C3225C0G3A102G200AC
			±5%		C3225C0G3B102J200AC	C3225C0G3A102J200AC
1.2 nF	3225	2.00±0.20	±2%		C3225C0G3B122G200AC	C3225C0G3A122G200AC
			±5%		C3225C0G3B122J200AC	C3225C0G3A122J200AC
1.5 nF	3225	2.00±0.20	±2%		C3225C0G3B152G200AC	C3225C0G3A152G200AC
			±5%		C3225C0G3B152J200AC	C3225C0G3A152J200AC
1.8 nF	3225	2.00±0.20	±2%		C3225C0G3B182G200AC	C3225C0G3A182G200AC
			±5%		C3225C0G3B182J200AC	C3225C0G3A182J200AC
2.2 nF	3225	2.00±0.20	±2%		C3225C0G3B222G200AC	C3225C0G3A222G200AC
			±5%		C3225C0G3B222J200AC	C3225C0G3A222J200AC
2.7 nF	3225	2.00±0.20	±2%		C3225C0G3B272G200AC	C3225C0G3A272G200AC
			±5%		C3225C0G3B272J200AC	C3225C0G3A272J200AC
3.3 nF	3225	2.00±0.20	±2%		C3225C0G3B332G200AC	C3225C0G3A332G200AC
			±5%		C3225C0G3B332J200AC	C3225C0G3A332J200AC
3.9 nF	3225	2.00±0.20	±2%		C3225C0G3B392G200AC	C3225C0G3A392G200AC
			±5%		C3225C0G3B392J200AC	C3225C0G3A392J200AC
4.7 nF	3225	2.00±0.20	±2%		C3225C0G3B472G200AC	C3225C0G3A472G200AC
			±5%		C3225C0G3B472J200AC	C3225C0G3A472J200AC
5.6 nF	3225	2.00±0.20	±2%		C3225C0G3B562G200AC	C3225C0G3A562G200AC
			±5%		C3225C0G3B562J200AC	C3225C0G3A562J200AC
6.8 nF	3225	2.00±0.20	±2%			C3225C0G3A682G200AC
			±5%			C3225C0G3A682J200AC
		2.30±0.20	±2%		C3225C0G3B682G230AC	
			±5%		C3225C0G3B682J230AC	
8.2 nF	3225	2.30±0.20	±2%			C3225C0G3A822G230AC
			±5%			C3225C0G3A822J230AC
		2.50±0.30	±2%		C3225C0G3B822G250AC	
			±5%		C3225C0G3B822J250AC	
10 nF	3225	2.50±0.30	±2%		C3225C0G3B103G250AC	C3225C0G3A103G250AC
			±5%		C3225C0G3B103J250AC	C3225C0G3A103J250AC
	5750	2.80±0.30	±2%		C5750C0G3B103G280KC	C5750C0G3A103G280KC
			±5%		C5750C0G3B103J280KC	C5750C0G3A103J280KC
12 nF	3225	2.50±0.30	±2%			C3225C0G3A123G250AC
			±5%			C3225C0G3A123J250AC
15 nF	3225	2.50±0.30	±2%			C3225C0G3A153G250AC
			±5%			C3225C0G3A153J250AC
	5750	2.80±0.30	±2%		C5750C0G3B153G280KC	C5750C0G3A153G280KC
			±5%		C5750C0G3B153J280KC	C5750C0G3A153J280KC
18 nF	3225	2.50±0.30	±2%			C3225C0G3A183G250AC
			±5%			C3225C0G3A183J250AC
22 nF	3225	2.50±0.30	±2%		C3225C0G3B223G250AC	C3225C0G3A223G250AC
			±5%		C3225C0G3B223J250AC	C3225C0G3A223J250AC
	5750	2.80±0.30	±2%		C5750C0G3B223G280KC	C5750C0G3A223G280KC
			±5%		C5750C0G3B223J280KC	C5750C0G3A223J280KC
33 nF	3225	2.50±0.30	±2%			C3225C0G3A333G250AC
			±5%			C3225C0G3A333J250AC
	5750	2.80±0.30	±2%		C5750C0G3B333G280KC	C5750C0G3A333G280KC
			±5%		C5750C0G3B333J280KC	C5750C0G3A333J280KC

・Click the catalog numbers for details.

・Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use.
・Please note that the contents may change without any prior notice due to reasons such as upgrading.

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Capacitance range table — X7R (-55 to +125°C, ±15%)

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers	
				Rated voltage: DC2000V	Rated voltage: DC1000V
470 pF	4520	1.30±0.20	±10%	C4520X7R3D471K130KA	C4520X7R3A471K130KA
			±20%	C4520X7R3D471M130KA	C4520X7R3A471M130KA
1 nF	4520	1.30±0.20	±10%	C4520X7R3D102K130KA	C4520X7R3A102K130KA
			±20%	C4520X7R3D102M130KA	C4520X7R3A102M130KA
2.2 nF	4532	1.30±0.20	±10%	C4532X7R3D222K130KA	
			±20%	C4532X7R3D222M130KA	
4.7 nF	4532	1.60±0.20	±10%		C4532X7R3A472K160KA
			±20%		C4532X7R3A472M160KA
10 nF	4532	2.00±0.20	±10%		C4532X7R3A103K200KA
			±20%		C4532X7R3A103M200KA

Capacitance range table — X7S (-55 to +125°C, ±22%)

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers	
				Rated voltage: DC2000V	Rated voltage: DC1000V
100 pF	3216	0.85±0.15	±10%	C3216X7S3D101K085AA	
220 pF	3216	0.85±0.15	±10%	C3216X7S3D221K085AA	
470 pF	3216	1.30±0.20	±10%	C3216X7S3D471K130AA	
1 nF	3216	0.85±0.15	±10%		C3216X7S3A102K085AA
	3225	2.00±0.20	±10%	C3225X7S3D102K200AA	
2.2 nF	3216	1.30±0.20	±10%		C3216X7S3A222K130AA
	3225	2.50±0.30	±10%	C3225X7S3D222K250AA	
4.7 nF	3225	1.60±0.20	±10%		C3225X7S3A472K160AA
	5750	2.00±0.20	±10%	C5750X7S3D472K200KA	
10 nF	5750	2.50±0.30	±10%	C5750X7S3D103K250KA	
22 nF	5750	1.60±0.20	±10%		C5750X7S3A223K160KA
47 nF	5750	2.50±0.30	±10%		C5750X7S3A473K250KA

・Gray: NRND (Not Recommended for New Designs)

・Click the catalog numbers for details.

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