TDK

September 2026

MULTILAYER CERAMIC CHIP CAPACITORS

Automotive grade, soft termination

CGA series

CGA2	**1005 [CC0402]**
CGA3	**1608 [CC0603]**
CGA4	**2012 [CC0805]**
CGA5	**3216 [CC1206]**
CGA6	**3225 [CC1210]**
CGA7	**4520 [CC1808]**
CGA8	**4532 [CC1812]**
CGA9	**5750 [CC2220]**
CGAD	**7563 [CC3025]**

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 in this specification are intended for use in automotive applications under normal operation and usage conditions. The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality requires a more stringent level of safety or reliability, or whose failure, malfunction or defect could cause serious damage to society, person or property.
Please understand that we are not responsible for any damage or liability caused by use of the products in any of the applications below or for any other use exceeding the range or conditions set forth in this specification sheet. 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 this specification, please contact us.

(1) Aerospace/aviation equipment
(2) Transportation equipment (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.

In addition, although the products listed in this specification are intended for use in automotive applications as described above, they are not prohibited to use in general electronic equipment, whose performance and/or quality doesn't require a more stringent level of safety or reliability, or whose failure, malfunction or defect could not cause serious damage to society, person or property. Therefore, the description of this caution will be applied, when the products are used in general electronic equipment under a normal operation and usage conditions.

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.

CGA series

Soft termination

Type CGA2:1005[CC0402], CGA3:1608[CC0603], CGA4:2012[CC0805], CGA5:3216[CC1206], CGA6:3225[CC1210], CGA7:4520[CC1808], CGA8:4532[CC1812], CGA9:5750[CC2220], CGAD:7563[CC3025]

■ SERIES OVERVIEW

Automotive grade Soft termination CGA series is a product incorporating a conductive resin layer into the terminal electrodes. The resin layer protects the ceramic body from cracks by relieving stress caused by thermal shock and board flexure.

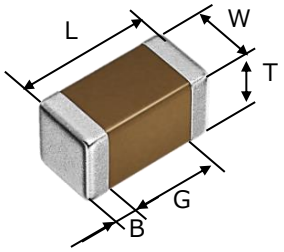
■ FEATURES

・High resistance to mechanical stress and thermal shock by resin layers
・X8R and X8L type whose maximum temperature are up to 150°C are available.
・C0G type having excellent stable temperature and DCbias characteristics is also available.
・Qualified based on AEC-Q200
・Qualified based on VW80808-2 (Qualification of MLCCs with Soft Termination) *Rated voltage is 100V or less

■ APPLICATIONS

・Fail-safe design for battery line
・Prevention of ceramic element crack by board bending
・Prevention of solder crack by thermal shock
・Equipment such as mobile devices and smart keys having a high possibility of drop

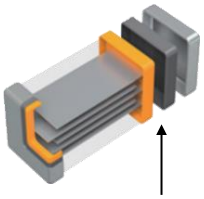
■ SHAPE & DIMENSIONS



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

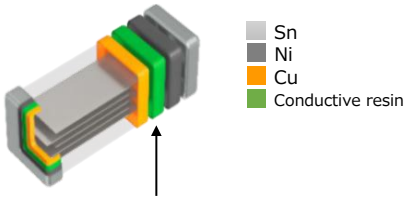
■ TERMINAL ELECTRODE STRUCTURES

General type



3-layer structure of Cu, Ni and Sn

Soft termination



4-layer structure including conductive resin layer

Dimensions in mm

Type	L	W	T	B	G
CGA2	1.00+0.15,-0.05	0.50+0.10,-0.05	0.50+0.10,-0.05	0.10 min.	0.30 min.
CGA3	1.60+0.20,-0.10	0.80+0.15,-0.10	0.80+0.15,-0.10		
CGA4	2.00+0.45,-0.20	1.25+0.25,-0.20	1.25+0.25,-0.20		0.50 min.
CGA5	3.20+0.40,-0.20	1.60+0.30,-0.20	1.60+0.30,-0.20		1.00 min.
CGA6	3.20+0.50,-0.40	2.50±0.30	2.50±0.30	0.20 min.	
CGA7	4.50+0.50,-0.40	2.00+0.30,-0.20	1.30±0.20		
CGA8	4.50+0.50,-0.40	3.20±0.40	2.50±0.30		---
CGA9	5.70+0.50,-0.40	5.00±0.40	2.50±0.30		
CGAD	7.50±0.50	6.30±0.50	2.50 max.	0.30 min.	

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

・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.

CATALOG NUMBER CONSTRUCTION

CGA	6	P	3	X7R	1E	226	M	250	A	E
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)

(1) Series

(2) Dimensions code

Dimensions code	EIA	Length (mm)	Width (mm)	Terminal width (mm)
2	CC0402	1.00	0.50	0.10 min.
3	CC0603	1.60	0.80	0.20 min.
4	CC0805	2.00	1.25	
5	CC1206	3.20	1.60	
6	CC1210	3.20	2.50	
7	CC1808	4.50	2.00	
8	CC1812	4.50	3.20	
9	CC2220	5.70	5.00	
D	CC3025	7.50	6.30	0.30 min.

Dimensions are typical values.

(3) Thickness code

Code	Nominal thickness
B	0.50 mm
C	0.60 mm
E	0.80 mm
F	0.85 mm
H	1.15 mm
J	1.25 mm
K	1.30 mm
L	1.60 mm
M	2.00 mm
N	2.30 mm
P	2.50 mm

(4) Voltage condition for life test

Code	Condition
1	1 x R.V.
2	2 x R.V.
3	1.5 x R.V.
4	1.2 x R.V.

(5) Temperature characteristics

Temperature characteristics	Temperature coefficient or capacitance change	Temperature range
C0G	0±30 ppm/℃	-55 to +125 ℃
X7R	±15 %	
X7S	±22 %	
X7T	+22,-33 %	
X8R	±15 %	-55 to +150 ℃
X8L	+15,-40 %	

(6) Rated voltage (DC)

Code	Voltage (DC)
0J	6.3 V
1A	10 V
1C	16 V
1E	25 V
1V	35 V
1H	50 V
1N	75 V
2A	100 V
2E	250 V
2W	450 V
2J	630 V
3A	1,000 V
3D	2,000 V
3F	3,000 V

(7) 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

(8) Capacitance tolerance

Code	Tolerance
G	±2 %
J	±5 %
K	±10 %
M	±20 %

(9) 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

(10) 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
L	330 mm reel, 12 mm pitch

(11) Special reserved code

Code	Description
E	Soft termination

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Capacitance range chart

CGA2: 1005 [CC0402]

Capacitance		C0G		X7R				X7S		X8R			
(pF)	Code	2A (100V)	1H (50V)	1H (50V)	1V (35V)	1E (25V)	1C (16V)	1C (16V)	1A (10V)	2A (100V)	1H (50V)	1E (25V)	1C (16V)
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			■							■	■	
15,000	153											■	
22,000	223			■								■	
33,000	333											■	■
47,000	473			■								■	■
100,000	104			■									
220,000	224				■	■	■						
470,000	474							■	■				

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 11 and after.

Capacitance range chart

CGA3: 1608 [CC0603]

Capacitance		C0G			X7R				X7S			X8R			
(pF)	Code	2E (250V)	2A (100V)	1H (50V)	2A (100V)	1H (50V)	1V (35V)	1E (25V)	2A (100V)	1C (16V)	1A (10V)	2A (100V)	1H (50V)	1E (25V)	1C (16V)
100	101			■											
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					■	■	■							■
1,000,000	105						■	■							
2,200,000	225									■	■				

Nominal thickness ■ 0.80 mm

・Background gray: NRND (Not Recommended for New Designs)
・Click the charts for details.
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Capacitance range chart

CGA4: 2012 [CC0805]

Capacitance		C0G				X7R						
(pF)	Code	2W (450V)	2E (250V)	2A (100V)	1H (50V)	2E (250V)	2A (100V)	1H (50V)	1V (35V)	1E (25V)	1C (16V)	0J (6.3V)
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											
10,000	103											
15,000	153											
22,000	223											
33,000	333											
47,000	473											
100,000	104											
220,000	224											
470,000	474											
1,000,000	105											
2,200,000	225											
4,700,000	475											
10,000,000	106											

Capacitance		X7S					X7T		X8R				X8L			
(pF)	Code	2A (100V)	1N (75V)	1E (25V)	1C (16V)	1A (10V)	2W (450V)	2E (250V)	2A (100V)	1H (50V)	1E (25V)	1C (16V)	1H (50V)	1V (35V)	1E (25V)	1A (10V)
10,000	103															
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															
10,000,000	106															

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

CGA5: 3216 [CC1206]

Capacitance		C0G					X7R						
(pF)	Code	2J (630V)	2W (450V)	2E (250V)	2A (100V)	1H (50V)	2J (630V)	2E (250V)	2A (100V)	1H (50V)	1V (35V)	1E (25V)	0J (6.3V)
1,000	102												
2,200	222												
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												
220,000	224												
470,000	474												
1,000,000	105												
2,200,000	225												
4,700,000	475												
10,000,000	106												
22,000,000	226												

Capacitance		X7S		X7T			X8R				X8L
(pF)	Code	2A (100V)	1N (75V)	2J (630V)	2W (450V)	2E (250V)	2A (100V)	1H (50V)	1E (25V)	1C (16V)	1E (25V)
47,000	473										
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 0.85 mm 1.15 mm 1.30 mm 1.60 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 11 and after.

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Capacitance range chart

CGA6: 3225 [CC1210]

Capacitance		C0G					X7R				
(pF)	Code	3A (1,000V)	2J (630V)	2W (450V)	2E (250V)	2A (100V)	2J (630V)	2E (250V)	2A (100V)	1H (50V)	1E (25V)
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										
15,000	153										
22,000	223										
33,000	333										
47,000	473										
68,000	683										
100,000	104										
220,000	224										
470,000	474										
1,000,000	105										
2,200,000	225										
4,700,000	475										
22,000,000	226										

Capacitance		X7S			X7T			X8R		
(pF)	Code	2A (100V)	1N (75V)	1H (50V)	2J (630V)	2W (450V)	2E (250V)	2A (100V)	1E (25V)	1C (16V)
100,000	104									
150,000	154									
220,000	224									
330,000	334									
470,000	474									
680,000	684									
3,300,000	335									
4,700,000	475									
10,000,000	106									

Nominal thickness 1.60 mm 2.00 mm 2.30 mm 2.50 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 11 and after.

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Capacitance range chart — CGA7: 4520 [CC1808]

Capacitance		X7R
(pF)	Code	3D (2,000V)
1,000	102	

Nominal thickness 1.30 mm

・Click the charts for details.
・For details such as the catalog numbers, please refer to the capacitance range table on page 11 and after.

Capacitance range chart — CGA8: 4532 [CC1812]

Capacitance		C0G		X7R			X7T		
(pF)	Code	3F (3,000V)	2J (630V)	3D (2,000V)	2J (630V)	2E (250V)	2J (630V)	2W (450V)	2E (250V)
330	331								
2,200	222								
33,000	333								
100,000	104								
220,000	224								
470,000	474								
1,000,000	105								

Nominal thickness 1.30 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 11 and after.

Capacitance range chart — CGA9: 5750 [CC2220]

Capacitance		C0G			X7R		X7S	X7T		
(pF)	Code	2J (630V)	2E (250V)	2A (100V)	2J (630V)	2E (250V)	2A (100V)	2J (630V)	2W (450V)	2E (250V)
68,000	683									
150,000	154									
220,000	224									
470,000	474									
1,000,000	105									
2,200,000	225									
10,000,000	106									

Nominal thickness 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 11 and after.

Capacitance range chart — CGAD: 7563 [CC3025]

Capacitance		X7R
(pF)	Code	1E (25V)
47,000,000	476	

Nominal thickness 2.30 mm

・Click the charts for details.
・For details such as the catalog numbers, please refer to the capacitance range table on page 11 and after.

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: DC1000V	Rated voltage: DC630V	Rated voltage: DC450V
100 pF	2012	0.60±0.15	±5%				CGA4C4C0G2W101J060AE
150 pF	2012	0.60±0.15	±5%				CGA4C4C0G2W151J060AE
220 pF	2012	0.60±0.15	±5%				CGA4C4C0G2W221J060AE
330 pF	2012	0.60±0.15	±5%				CGA4C4C0G2W331J060AE
	4532	2.50±0.30	±10%	CGA8P1C0G3F331K250KE			
470 pF	2012	0.60±0.15	±5%				CGA4C4C0G2W471J060AE
680 pF	2012	0.60±0.15	±5%				CGA4C4C0G2W681J060AE
1 nF	2012	0.60±0.15	±5%				CGA4C4C0G2W102J060AE
	3225	2.00+0.30,-0.20	±2%		CGA6M1C0G3A102G200AE		
			±5%		CGA6M1C0G3A102J200AE		
1.2 nF	2012	0.60±0.15	±5%				CGA4C4C0G2W122J060AE
	3225	2.00+0.30,-0.20	±2%		CGA6M1C0G3A122G200AE		
			±5%		CGA6M1C0G3A122J200AE		
1.5 nF	2012	0.85±0.15	±5%				CGA4F4C0G2W152J085AE
	3225	2.00+0.30,-0.20	±2%		CGA6M1C0G3A152G200AE		
			±5%		CGA6M1C0G3A152J200AE		
1.8 nF	2012	0.85±0.15	±5%				CGA4F4C0G2W182J085AE
	3225	2.00+0.30,-0.20	±2%		CGA6M1C0G3A182G200AE		
			±5%		CGA6M1C0G3A182J200AE		
2.2 nF	2012	0.85±0.15	±5%				CGA4F4C0G2W222J085AE
	3225	2.00+0.30,-0.20	±2%		CGA6M1C0G3A222G200AE		
			±5%		CGA6M1C0G3A222J200AE		
2.7 nF	2012	1.25+0.25,-0.20	±5%				CGA4J4C0G2W272J125AE
	3225	2.00+0.30,-0.20	±2%		CGA6M1C0G3A272G200AE		
			±5%		CGA6M1C0G3A272J200AE		
3.3 nF	2012	1.25+0.25,-0.20	±5%				CGA4J4C0G2W332J125AE
	3225	2.00+0.30,-0.20	±2%		CGA6M1C0G3A332G200AE		
			±5%		CGA6M1C0G3A332J200AE		
3.9 nF	2012	1.25+0.25,-0.20	±5%				CGA4J4C0G2W392J125AE
	3216	0.85±0.15	±2%			CGA5F4C0G2J392G085AE	
			±5%			CGA5F4C0G2J392J085AE	
	3225	2.00+0.30,-0.20	±2%		CGA6M1C0G3A392G200AE		
			±5%		CGA6M1C0G3A392J200AE		
4.7 nF	3225	2.00+0.30,-0.20	±2%		CGA6M1C0G3A472G200AE		
			±5%		CGA6M1C0G3A472J200AE		
5.6 nF	3216	1.15±0.15	±2%			CGA5H4C0G2J562G115AE	
			±5%			CGA5H4C0G2J562J115AE	
	3225	2.00+0.30,-0.20	±2%		CGA6M1C0G3A562G200AE		
			±5%		CGA6M1C0G3A562J200AE		
6.8 nF	3216	1.15±0.15	±2%			CGA5H4C0G2J682G115AE	
			±5%			CGA5H4C0G2J682J115AE	CGA5H4C0G2W682J115AE
	3225	2.00+0.30,-0.20	±2%		CGA6M1C0G3A682G200AE		
			±5%		CGA6M1C0G3A682J200AE		
8.2 nF	3216	1.15±0.15	±5%				CGA5H4C0G2W822J115AE
		1.60+0.30,-0.20	±2%			CGA5L4C0G2J822G160AE	
			±5%			CGA5L4C0G2J822J160AE	
	3225	2.30+0.30,-0.20	±2%		CGA6N1C0G3A822G230AE		
			±5%		CGA6N1C0G3A822J230AE		
10 nF	3216	1.60+0.30,-0.20	±2%			CGA5L4C0G2J103G160AE	
			±5%			CGA5L4C0G2J103J160AE	CGA5L4C0G2W103J160AE
15 nF	3225	1.60+0.30,-0.20	±2%			CGA6L4C0G2J153G160AE	
			±5%			CGA6L4C0G2J153J160AE	
33 nF	3225	2.50±0.30	±2%			CGA6P4C0G2J333G250AE	
			±5%			CGA6P4C0G2J333J250AE	CGA6P4C0G2W333J250AE
	4532	2.00+0.30,-0.20	±5%			CGA8M4C0G2J333J200KE	
68 nF	5750	2.30+0.30,-0.20	±2%			CGA9N1C0G2J683G230KE	
			±5%			CGA9N1C0G2J683J230KE	

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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: DC250V	Rated voltage: DC100V	Rated voltage: DC50V
100 pF	1005	0.50+0.10,-0.05	±5%		CGA2B2C0G2A101J050BE	CGA2B2C0G1H101J050BE
	1608	0.80+0.15,-0.10	±5%			CGA3E2C0G1H101J080AE
150 pF	1005	0.50+0.10,-0.05	±5%		CGA2B2C0G2A151J050BE	CGA2B2C0G1H151J050BE
220 pF	1005	0.50+0.10,-0.05	±5%		CGA2B2C0G2A221J050BE	CGA2B2C0G1H221J050BE
330 pF	1005	0.50+0.10,-0.05	±5%		CGA2B2C0G2A331J050BE	CGA2B2C0G1H331J050BE
	1608	0.80+0.15,-0.10	±5%		CGA3E2C0G2A331J080AE	CGA3E2C0G1H331J080AE
470 pF	1005	0.50+0.10,-0.05	±5%		CGA2B1C0G2A471J050BE	CGA2B2C0G1H471J050BE
	1608	0.80+0.15,-0.10	±5%		CGA3E2C0G2A471J080AE	CGA3E2C0G1H471J080AE
680 pF	1005	0.50+0.10,-0.05	±5%		CGA2B1C0G2A681J050BE	CGA2B2C0G1H681J050BE
	1608	0.80+0.15,-0.10	±5%		CGA3E2C0G2A681J080AE	CGA3E2C0G1H681J080AE
1 nF	1005	0.50+0.10,-0.05	±5%		CGA2B1C0G2A102J050BE	CGA2B2C0G1H102J050BE
	1608	0.80+0.15,-0.10	±5%	CGA3E3C0G2E102J080AE	CGA3E2C0G2A102J080AE	CGA3E2C0G1H102J080AE
1.2 nF	1608	0.80+0.15,-0.10	±5%	CGA3E3C0G2E122J080AE	CGA3E2C0G2A122J080AE	CGA3E2C0G1H122J080AE
1.5 nF	1608	0.80+0.15,-0.10	±5%	CGA3E3C0G2E152J080AE	CGA3E2C0G2A152J080AE	CGA3E2C0G1H152J080AE
1.8 nF	1608	0.80+0.15,-0.10	±5%	CGA3E3C0G2E182J080AE	CGA3E2C0G2A182J080AE	CGA3E2C0G1H182J080AE
2.2 nF	1608	0.80+0.15,-0.10	±5%		CGA3E2C0G2A222J080AE	CGA3E2C0G1H222J080AE
2.7 nF	1608	0.80+0.15,-0.10	±5%		CGA3E1C0G2A272J080AE	CGA3E2C0G1H272J080AE
3.3 nF	1608	0.80+0.15,-0.10	±5%		CGA3E1C0G2A332J080AE	CGA3E2C0G1H332J080AE
	2012	0.85±0.15	±5%	CGA4F3C0G2E332J085AE		
3.9 nF	1608	0.80+0.15,-0.10	±5%		CGA3E1C0G2A392J080AE	CGA3E2C0G1H392J080AE
	2012	1.25+0.25,-0.20	±5%	CGA4J3C0G2E392J125AE		
4.7 nF	1608	0.80+0.15,-0.10	±5%		CGA3E1C0G2A472J080AE	CGA3E2C0G1H472J080AE
	2012	1.25+0.25,-0.20	±5%	CGA4J3C0G2E472J125AE		
5.6 nF	1608	0.80+0.15,-0.10	±5%		CGA3E1C0G2A562J080AE	CGA3E2C0G1H562J080AE
	2012	1.25+0.25,-0.20	±5%	CGA4J3C0G2E562J125AE		
6.8 nF	1608	0.80+0.15,-0.10	±5%		CGA3E1C0G2A682J080AE	CGA3E2C0G1H682J080AE
	2012	1.25+0.25,-0.20	±5%	CGA4J3C0G2E682J125AE		
8.2 nF	1608	0.80+0.15,-0.10	±5%		CGA3E1C0G2A822J080AE	CGA3E2C0G1H822J080AE
10 nF	1608	0.80+0.15,-0.10	±5%		CGA3E1C0G2A103J080AE	CGA3E2C0G1H103J080AE
	3216	1.15±0.15	±5%	CGA5H3C0G2E103J115AE		
15 nF	2012	0.85±0.15	±5%		CGA4F1C0G2A153J085AE	CGA4F2C0G1H153J085AE
	3216	1.60+0.30,-0.20	±5%	CGA5L3C0G2E153J160AE		
22 nF	2012	1.25+0.25,-0.20	±5%		CGA4J1C0G2A223J125AE	CGA4J2C0G1H223J125AE
	3225	1.60+0.30,-0.20	±5%	CGA6L3C0G2E223J160AE		
33 nF	2012	1.25+0.25,-0.20	±5%		CGA4J1C0G2A333J125AE	CGA4J2C0G1H333J125AE
47 nF	3216	1.15±0.15	±5%		CGA5H1C0G2A473J115AE	CGA5H2C0G1H473J115AE
68 nF	3216	1.60+0.30,-0.20	±5%		CGA5L1C0G2A683J160AE	CGA5L2C0G1H683J160AE
	3225	2.30+0.30,-0.20	±5%		CGA6N2C0G2A683J230AE	
100 nF	3216	1.60+0.30,-0.20	±5%		CGA5L1C0G2A104J160AE	CGA5L2C0G1H104J160AE
150 nF	5750	2.30+0.30,-0.20	±5%	CGA9N4C0G2E154J230KE	CGA9N2C0G2A154J230KE	

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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: DC630V	Rated voltage: DC250V
1 nF	2012	0.85±0.15	±10%			CGA4F3X7R2E102K085AE
			±20%			CGA4F3X7R2E102M085AE
	3216	1.15±0.15	±10%		CGA5H4X7R2J102K115AE	
			±20%		CGA5H4X7R2J102M115AE	
	4520	1.30±0.20	±10%	CGA7K1X7R3D102K130KE		
			±20%	CGA7K1X7R3D102M130KE		
2.2 nF	2012	0.85±0.15	±10%			CGA4F3X7R2E222K085AE
			±20%			CGA4F3X7R2E222M085AE
	3216	1.15±0.15	±10%		CGA5H4X7R2J222K115AE	
			±20%		CGA5H4X7R2J222M115AE	
	4532	1.30±0.20	±10%	CGA8K1X7R3D222K130KE		
			±20%	CGA8K1X7R3D222M130KE		
3.3 nF	3216	1.15±0.15	±10%		CGA5H4X7R2J332K115AE	
			±20%		CGA5H4X7R2J332M115AE	
4.7 nF	2012	0.85±0.15	±10%			CGA4F3X7R2E472K085AE
			±20%			CGA4F3X7R2E472M085AE
	3216	1.15±0.15	±10%		CGA5H4X7R2J472K115AE	
			±20%		CGA5H4X7R2J472M115AE	
10 nF	2012	1.25+0.25,-0.20	±10%			CGA4J3X7R2E103K125AE
			±20%			CGA4J3X7R2E103M125AE
	3216	1.15±0.15	±10%		CGA5H4X7R2J103K115AE	
			±20%		CGA5H4X7R2J103M115AE	
22 nF	2012	1.25+0.25,-0.20	±10%			CGA4J3X7R2E223K125AE
			±20%			CGA4J3X7R2E223M125AE
	3216	1.15±0.15	±10%			CGA5H3X7R2E223K115AE
			±20%			CGA5H3X7R2E223M115AE
		1.30±0.20	±10%		CGA5K4X7R2J223K130AE	
			±20%		CGA5K4X7R2J223M130AE	
33 nF	3216	1.60+0.30,-0.20	±10%		CGA5L4X7R2J333K160AE	
			±20%		CGA5L4X7R2J333M160AE	
47 nF	3216	1.60+0.30,-0.20	±10%			CGA5L3X7R2E473K160AE
			±20%			CGA5L3X7R2E473M160AE
	3225	2.00+0.30,-0.20	±10%		CGA6M4X7R2J473K200AE	
			±20%		CGA6M4X7R2J473M200AE	
68 nF	3225	2.00+0.30,-0.20	±10%		CGA6M4X7R2J683K200AE	
			±20%		CGA6M4X7R2J683M200AE	
100 nF	3216	1.60+0.30,-0.20	±10%			CGA5L3X7R2E104K160AE
			±20%			CGA5L3X7R2E104M160AE
	3225	2.00+0.30,-0.20	±10%			CGA6M3X7R2E104K200AE
			±20%			CGA6M3X7R2E104M200AE
	4532	2.30+0.30,-0.20	±10%		CGA8N4X7R2J104K230KE	
			±20%		CGA8N4X7R2J104M230KE	
220 nF	3225	2.00+0.30,-0.20	±10%			CGA6M3X7R2E224K200AE
			±20%			CGA6M3X7R2E224M200AE
	5750	2.30+0.30,-0.20	±10%		CGA9N4X7R2J224K230KE	
			±20%		CGA9N4X7R2J224M230KE	
470 nF	4532	2.30+0.30,-0.20	±10%			CGA8N3X7R2E474K230KE
			±20%			CGA8N3X7R2E474M230KE
1 µF	5750	2.30+0.30,-0.20	±10%			CGA9N3X7R2E105K230KE
			±20%			CGA9N3X7R2E105M230KE

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

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers	
				Rated voltage: DC100V	Rated voltage: DC50V
1 nF	1005	0.50+0.10,-0.05	±10%		CGA2B2X7R1H102K050BE
			±20%		CGA2B2X7R1H102M050BE
	1608	0.80+0.15,-0.10	±10%	CGA3E2X7R2A102K080AE	CGA3E2X7R1H102K080AE
			±20%	CGA3E2X7R2A102M080AE	CGA3E2X7R1H102M080AE
	2012	0.85±0.15	±10%	CGA4F2X7R2A102K085AE	
			±20%	CGA4F2X7R2A102M085AE	
2.2 nF	1005	0.50+0.10,-0.05	±10%		CGA2B2X7R1H222K050BE
			±20%		CGA2B2X7R1H222M050BE
	1608	0.80+0.15,-0.10	±10%	CGA3E2X7R2A222K080AE	CGA3E2X7R1H222K080AE
			±20%	CGA3E2X7R2A222M080AE	CGA3E2X7R1H222M080AE
	2012	0.85±0.15	±10%	CGA4F2X7R2A222K085AE	
			±20%	CGA4F2X7R2A222M085AE	
4.7 nF	1005	0.50+0.10,-0.05	±10%		CGA2B2X7R1H472K050BE
			±20%		CGA2B2X7R1H472M050BE
	1608	0.80+0.15,-0.10	±10%	CGA3E2X7R2A472K080AE	CGA3E2X7R1H472K080AE
			±20%	CGA3E2X7R2A472M080AE	CGA3E2X7R1H472M080AE
	2012	0.85±0.15	±10%	CGA4F2X7R2A472K085AE	
			±20%	CGA4F2X7R2A472M085AE	
10 nF	1005	0.50+0.10,-0.05	±10%		CGA2B3X7R1H103K050BE
			±20%		CGA2B3X7R1H103M050BE
	1608	0.80+0.15,-0.10	±10%	CGA3E2X7R2A103K080AE	CGA3E2X7R1H103K080AE
			±20%	CGA3E2X7R2A103M080AE	CGA3E2X7R1H103M080AE
	2012	0.85±0.15	±10%	CGA4F2X7R2A103K085AE	
			±20%	CGA4F2X7R2A103M085AE	
22 nF	1005	0.50+0.10,-0.05	±10%		CGA2B3X7R1H223K050BE
			±20%		CGA2B3X7R1H223M050BE
	1608	0.80+0.15,-0.10	±10%	CGA3E2X7R2A223K080AE	CGA3E2X7R1H223K080AE
			±20%	CGA3E2X7R2A223M080AE	CGA3E2X7R1H223M080AE
	2012	1.25+0.25,-0.20	±10%	CGA4J2X7R2A223K125AE	
			±20%	CGA4J2X7R2A223M125AE	
47 nF	1005	0.50+0.10,-0.05	±10%		CGA2B3X7R1H473K050BE
			±20%		CGA2B3X7R1H473M050BE
	1608	0.80+0.15,-0.10	±10%		CGA3E2X7R1H473K080AE
			±20%		CGA3E2X7R1H473M080AE
	2012	1.25+0.25,-0.20	±10%	CGA4J2X7R2A473K125AE	
			±20%	CGA4J2X7R2A473M125AE	
100 nF	1005	0.50+0.10,-0.05	±10%		CGA2B3X7R1H104K050BE
			±20%		CGA2B3X7R1H104M050BE
	1608	0.80+0.15,-0.10	±10%		CGA3E2X7R1H104K080AE
			±20%		CGA3E2X7R1H104M080AE
	2012	1.25+0.25,-0.20	±10%	CGA4J2X7R2A104K125AE	CGA4J2X7R1H104K125AE
			±20%	CGA4J2X7R2A104M125AE	CGA4J2X7R1H104M125AE
	3216	1.60+0.30,-0.20	±10%	CGA5L2X7R2A104K160AE	
			±20%	CGA5L2X7R2A104M160AE	

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

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers		
				Rated voltage: DC100V	Rated voltage: DC50V	Rated voltage: DC35V
220 nF	1005	0.50+0.10,-0.05	±10%			CGA2B1X7R1V224K050BE
			±20%			CGA2B1X7R1V224M050BE
	1608	0.80+0.15,-0.10	±10%		CGA3E3X7R1H224K080AE	CGA3E3X7R1V224K080AE
			±20%		CGA3E3X7R1H224M080AE	CGA3E3X7R1V224M080AE
	2012	1.25+0.25,-0.20	±10%		CGA4J2X7R1H224K125AE	
			±20%		CGA4J2X7R1H224M125AE	
	3216	1.15±0.15	±10%	CGA5H2X7R2A224K115AE		
			±20%	CGA5H2X7R2A224M115AE		
470 nF	1608	0.80+0.15,-0.10	±10%		CGA3E3X7R1H474K080AE	CGA3E1X7R1V474K080AE
			±20%		CGA3E3X7R1H474M080AE	CGA3E1X7R1V474M080AE
	2012	1.25+0.25,-0.20	±10%		CGA4J3X7R1H474K125AE	
			±20%		CGA4J3X7R1H474M125AE	
	3216	1.60+0.30,-0.20	±10%	CGA5L2X7R2A474K160AE		
			±20%	CGA5L2X7R2A474M160AE		
	3225	2.00+0.30,-0.20	±10%	CGA6M2X7R2A474K200AE		
			±20%	CGA6M2X7R2A474M200AE		
1 µF	1608	0.80+0.15,-0.10	±10%			CGA3E1X7R1V105K080AE
			±20%			CGA3E1X7R1V105M080AE
	2012	1.25+0.25,-0.20	±10%		CGA4J3X7R1H105K125AE	CGA4J3X7R1V105K125AE
			±20%		CGA4J3X7R1H105M125AE	CGA4J3X7R1V105M125AE
	3216	1.60+0.30,-0.20	±10%	CGA5L2X7R2A105K160AE	CGA5L3X7R1H105K160AE	
			±20%	CGA5L2X7R2A105M160AE	CGA5L3X7R1H105M160AE	
	3225	1.60+0.30,-0.20	±10%		CGA6L2X7R1H105K160AE	
			±20%		CGA6L2X7R1H105M160AE	
		2.00+0.30,-0.20	±10%	CGA6M2X7R2A105K200AE		
			±20%	CGA6M2X7R2A105M200AE		
2.2 µF	2012	1.25+0.25,-0.20	±10%		CGA4J3X7R1H225K125AE	CGA4J1X7R1V225K125AE
			±20%		CGA4J3X7R1H225M125AE	CGA4J1X7R1V225M125AE
	3216	1.60+0.30,-0.20	±10%		CGA5L3X7R1H225K160AE	CGA5L3X7R1V225K160AE
			±20%		CGA5L3X7R1H225M160AE	CGA5L3X7R1V225M160AE
	3225	2.00+0.30,-0.20	±10%		CGA6M3X7R1H225K200AE	
			±20%		CGA6M3X7R1H225M200AE	
		2.30+0.30,-0.20	±10%	CGA6N3X7R2A225K230AE		
			±20%	CGA6N3X7R2A225M230AE		
4.7 µF	2012	1.25+0.25,-0.20	±10%		CGA4J1X7R1H475K125AE	CGA4J1X7R1V475K125AE
			±20%			CGA4J1X7R1V475M125AE
	3216	1.60+0.30,-0.20	±10%		CGA5L3X7R1H475K160AE	CGA5L1X7R1V475K160AE
			±20%		CGA5L3X7R1H475M160AE	CGA5L1X7R1V475M160AE
	3225	2.50±0.30	±10%		CGA6P3X7R1H475K250AE	
10 µF	3216	1.60+0.30,-0.20	±10%		CGA5L1X7R1H106K160AE	CGA5L1X7R1V106K160AE
			±20%			CGA5L1X7R1V106M160AE

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

Capaci-tance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers		
				Rated voltage: DC25V	Rated voltage: DC16V	Rated voltage: DC6.3V
220 nF	1005	0.50+0.10,-0.05	±10%	CGA2B3X7R1E224K050BE	CGA2B2X7R1C224K050BE	
			±20%	CGA2B3X7R1E224M050BE	CGA2B2X7R1C224M050BE	
470 nF	1608	0.80+0.15,-0.10	±10%	CGA3E3X7R1E474K080AE		
			±20%	CGA3E3X7R1E474M080AE		
1 µF	1608	0.80+0.15,-0.10	±10%	CGA3E1X7R1E105K080AE		
			±20%	CGA3E1X7R1E105M080AE		
2.2 µF	2012	1.25+0.25,-0.20	±10%	CGA4J3X7R1E225K125AE		
			±20%	CGA4J3X7R1E225M125AE		
	3216	1.60+0.30,-0.20	±10%	CGA5L2X7R1E225K160AE		
			±20%	CGA5L2X7R1E225M160AE		
4.7 µF	2012	1.25+0.25,-0.20	±10%	CGA4J1X7R1E475K125AE	CGA4J3X7R1C475K125AE	
			±20%	CGA4J1X7R1E475M125AE	CGA4J3X7R1C475M125AE	
10 µF	2012	1.25+0.25,-0.20	±10%			CGA4J1X7R0J106K125AE
	3216	1.60+0.30,-0.20	±10%	CGA5L1X7R1E106K160AE		
			±20%	CGA5L1X7R1E106M160AE		
22 µF	3216	1.60+0.30,-0.20	±20%			CGA5L1X7R0J226M160AE
	3225	2.50±0.30	±20%	CGA6P3X7R1E226M250AE		
47 µF	7563	2.50 max.	±20%	CGADN3X7R1E476M230LE		

・Click the catalog numbers for details.

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

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers Rated voltage: DC100V	Catalog numbers Rated voltage: DC75V	Catalog numbers Rated voltage: DC50V
47 nF	1608	0.80+0.15,-0.10	±10%	CGA3E3X7S2A473K080AE		
			±20%	CGA3E3X7S2A473M080AE		
100 nF	1608	0.80+0.15,-0.10	±10%	CGA3E3X7S2A104K080AE		
			±20%	CGA3E3X7S2A104M080AE		
220 nF	2012	0.85±0.15	±10%	CGA4F3X7S2A224K085AE		
			±20%	CGA4F3X7S2A224M085AE		
470 nF	2012	1.25+0.25,-0.20	±10%	CGA4J3X7S2A474K125AE		
			±20%	CGA4J3X7S2A474M125AE		
1 µF	2012	1.25+0.25,-0.20	±10%	CGA4J3X7S2A105K125AE	CGA4J1X7S1N105K125AE	
			±20%	CGA4J3X7S2A105M125AE		
2.2 µF	3216	1.60+0.30,-0.20	±10%	CGA5L3X7S2A225K160AE	CGA5L1X7S1N225K160AE	
			±20%	CGA5L3X7S2A225M160AE		
3.3 µF	3225	2.00+0.30,-0.20	±10%	CGA6M3X7S2A335K200AE		
			±20%	CGA6M3X7S2A335M200AE		
4.7 µF	3225	2.00+0.30,-0.20	±10%	CGA6M3X7S2A475K200AE		
			±20%	CGA6M3X7S2A475M200AE		
		2.30+0.30,-0.20	±10%			CGA6N3X7S1H475K230AE
			±20%			CGA6N3X7S1H475M230AE
		2.50±0.30	±10%		CGA6P1X7S1N475K250AE	
10 µF	3225	2.50±0.30	±10%		CGA6P1X7S1N106K250AE	CGA6P3X7S1H106K250AE
			±20%			CGA6P3X7S1H106M250AE
	5750	2.30+0.30,-0.20	±10%	CGA9N3X7S2A106K230KE		
			±20%	CGA9N3X7S2A106M230KE		

・Gray: NRND (Not Recommended for New Designs)

・Click the catalog numbers for details.

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

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers Rated voltage: DC25V	Catalog numbers Rated voltage: DC16V	Catalog numbers Rated voltage: DC10V
470 nF	1005	0.50+0.10,-0.05	±10%		CGA2B1X7S1C474K050BE	CGA2B3X7S1A474K050BE
			±20%		CGA2B1X7S1C474M050BE	CGA2B3X7S1A474M050BE
2.2 µF	1608	0.80+0.15,-0.10	±10%		CGA3E1X7S1C225K080AE	CGA3E3X7S1A225K080AE
			±20%		CGA3E1X7S1C225M080AE	CGA3E3X7S1A225M080AE
10 µF	2012	1.25+0.25,-0.20	±10%	CGA4J1X7S1E106K125AE	CGA4J1X7S1C106K125AE	CGA4J3X7S1A106K125AE
			±20%		CGA4J1X7S1C106M125AE	CGA4J3X7S1A106M125AE

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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: DC250V
10 nF	2012	0.85±0.15	±10%		CGA4F4X7T2W103K085AE	
			±20%		CGA4F4X7T2W103M085AE	
22 nF	2012	1.25+0.25,-0.20	±10%		CGA4J4X7T2W223K125AE	
			±20%		CGA4J4X7T2W223M125AE	
47 nF	2012	1.25+0.25,-0.20	±10%		CGA4J4X7T2W473K125AE	CGA4J3X7T2E473K125AE
			±20%		CGA4J4X7T2W473M125AE	CGA4J3X7T2E473M125AE
	3216	1.60+0.30,-0.20	±10%	CGA5L1X7T2J473K160AE		
			±20%	CGA5L1X7T2J473M160AE		
100 nF	2012	1.25+0.25,-0.20	±10%			CGA4J3X7T2E104K125AE
			±20%			CGA4J3X7T2E104M125AE
	3216	1.60+0.30,-0.20	±10%		CGA5L4X7T2W104K160AE	
			±20%		CGA5L4X7T2W104M160AE	
	3225	1.60+0.30,-0.20	±10%	CGA6L1X7T2J104K160AE		
			±20%	CGA6L1X7T2J104M160AE		
150 nF	3225	2.00+0.30,-0.20	±10%	CGA6M1X7T2J154K200AE		
			±20%	CGA6M1X7T2J154M200AE		
220 nF	3216	1.60+0.30,-0.20	±10%			CGA5L3X7T2E224K160AE
			±20%			CGA5L3X7T2E224M160AE
	3225	2.00+0.30,-0.20	±10%		CGA6M4X7T2W224K200AE	
			±20%		CGA6M4X7T2W224M200AE	
	4532	2.00+0.30,-0.20	±10%	CGA8M1X7T2J224K200KE		
			±20%	CGA8M1X7T2J224M200KE		
330 nF	3225	2.00+0.30,-0.20	±10%			CGA6M3X7T2E334K200AE
			±20%			CGA6M3X7T2E334M200AE
470 nF	4532	2.30+0.30,-0.20	±10%		CGA8N4X7T2W474K230KE	
			±20%		CGA8N4X7T2W474M230KE	
	5750	2.50±0.30	±10%	CGA9P1X7T2J474K250KE		
			±20%	CGA9P1X7T2J474M250KE		
1 µF	4532	2.50±0.30	±10%			CGA8P3X7T2E105K250KE
			±20%			CGA8P3X7T2E105M250KE
	5750	2.50±0.30	±10%		CGA9P4X7T2W105K250KE	
			±20%		CGA9P4X7T2W105M250KE	
2.2 µF	5750	2.50±0.30	±10%			CGA9P3X7T2E225K250KE
			±20%			CGA9P3X7T2E225M250KE

・Click the catalog numbers for details.

Capacitance range table

X8R (-55 to +150°C, ±15%)

Capaci-tance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers			
				Rated voltage: DC100V	Rated voltage: DC50V	Rated voltage: DC25V	Rated voltage: DC16V
150 pF	1005	0.50+0.10,-0.05	±10%	CGA2B2X8R2A151K050BE	CGA2B2X8R1H151K050BE		
			±20%	CGA2B2X8R2A151M050BE	CGA2B2X8R1H151M050BE		
220 pF	1005	0.50+0.10,-0.05	±10%	CGA2B2X8R2A221K050BE	CGA2B2X8R1H221K050BE		
			±20%	CGA2B2X8R2A221M050BE	CGA2B2X8R1H221M050BE		
330 pF	1005	0.50+0.10,-0.05	±10%	CGA2B2X8R2A331K050BE	CGA2B2X8R1H331K050BE		
			±20%	CGA2B2X8R2A331M050BE	CGA2B2X8R1H331M050BE		
470 pF	1005	0.50+0.10,-0.05	±10%	CGA2B2X8R2A471K050BE	CGA2B2X8R1H471K050BE		
			±20%	CGA2B2X8R2A471M050BE	CGA2B2X8R1H471M050BE		
680 pF	1005	0.50+0.10,-0.05	±10%	CGA2B2X8R2A681K050BE	CGA2B2X8R1H681K050BE		
			±20%	CGA2B2X8R2A681M050BE	CGA2B2X8R1H681M050BE		
1 nF	1005	0.50+0.10,-0.05	±10%	CGA2B2X8R2A102K050BE	CGA2B2X8R1H102K050BE		
			±20%	CGA2B2X8R2A102M050BE	CGA2B2X8R1H102M050BE		
	1608	0.80+0.15,-0.10	±10%	CGA3E2X8R2A102K080AE	CGA3E2X8R1H102K080AE		
			±20%	CGA3E2X8R2A102M080AE	CGA3E2X8R1H102M080AE		
1.5 nF	1005	0.50+0.10,-0.05	±10%	CGA2B2X8R2A152K050BE	CGA2B2X8R1H152K050BE		
			±20%	CGA2B2X8R2A152M050BE	CGA2B2X8R1H152M050BE		
	1608	0.80+0.15,-0.10	±10%	CGA3E2X8R2A152K080AE	CGA3E2X8R1H152K080AE		
			±20%	CGA3E2X8R2A152M080AE	CGA3E2X8R1H152M080AE		
2.2 nF	1005	0.50+0.10,-0.05	±10%	CGA2B2X8R2A222K050BE	CGA2B2X8R1H222K050BE		
			±20%	CGA2B2X8R2A222M050BE	CGA2B2X8R1H222M050BE		
	1608	0.80+0.15,-0.10	±10%	CGA3E2X8R2A222K080AE	CGA3E2X8R1H222K080AE		
			±20%	CGA3E2X8R2A222M080AE	CGA3E2X8R1H222M080AE		
3.3 nF	1005	0.50+0.10,-0.05	±10%	CGA2B3X8R2A332K050BE	CGA2B2X8R1H332K050BE		
			±20%	CGA2B3X8R2A332M050BE	CGA2B2X8R1H332M050BE		
	1608	0.80+0.15,-0.10	±10%	CGA3E2X8R2A332K080AE	CGA3E2X8R1H332K080AE		
			±20%	CGA3E2X8R2A332M080AE	CGA3E2X8R1H332M080AE		
4.7 nF	1005	0.50+0.10,-0.05	±10%		CGA2B2X8R1H472K050BE		
			±20%		CGA2B2X8R1H472M050BE		
	1608	0.80+0.15,-0.10	±10%	CGA3E2X8R2A472K080AE	CGA3E2X8R1H472K080AE		
			±20%	CGA3E2X8R2A472M080AE	CGA3E2X8R1H472M080AE		
6.8 nF	1005	0.50+0.10,-0.05	±10%		CGA2B3X8R1H682K050BE	CGA2B2X8R1E682K050BE	
			±20%		CGA2B3X8R1H682M050BE	CGA2B2X8R1E682M050BE	
	1608	0.80+0.15,-0.10	±10%	CGA3E2X8R2A682K080AE	CGA3E2X8R1H682K080AE		
			±20%	CGA3E2X8R2A682M080AE	CGA3E2X8R1H682M080AE		
10 nF	1005	0.50+0.10,-0.05	±10%		CGA2B3X8R1H103K050BE	CGA2B2X8R1E103K050BE	
			±20%		CGA2B3X8R1H103M050BE	CGA2B2X8R1E103M050BE	
	1608	0.80+0.15,-0.10	±10%	CGA3E2X8R2A103K080AE	CGA3E2X8R1H103K080AE		
			±20%	CGA3E2X8R2A103M080AE	CGA3E2X8R1H103M080AE		
15 nF	1005	0.50+0.10,-0.05	±10%			CGA2B3X8R1E153K050BE	
			±20%			CGA2B3X8R1E153M050BE	
	1608	0.80+0.15,-0.10	±10%	CGA3E2X8R2A153K080AE	CGA3E2X8R1H153K080AE		
			±20%	CGA3E2X8R2A153M080AE	CGA3E2X8R1H153M080AE		
22 nF	1005	0.50+0.10,-0.05	±10%			CGA2B3X8R1E223K050BE	
			±20%			CGA2B3X8R1E223M050BE	
	1608	0.80+0.15,-0.10	±10%	CGA3E3X8R2A223K080AE	CGA3E2X8R1H223K080AE		
			±20%	CGA3E3X8R2A223M080AE	CGA3E2X8R1H223M080AE		
	2012	1.25+0.25,-0.20	±10%	CGA4J2X8R2A223K125AE			
			±20%	CGA4J2X8R2A223M125AE			
33 nF	1005	0.50+0.10,-0.05	±10%			CGA2B1X8R1E333K050BE	CGA2B3X8R1C333K050BE
			±20%			CGA2B1X8R1E333M050BE	CGA2B3X8R1C333M050BE
	1608	0.80+0.15,-0.10	±10%		CGA3E2X8R1H333K080AE		
			±20%		CGA3E2X8R1H333M080AE		
	2012	1.25+0.25,-0.20	±10%	CGA4J3X8R2A333K125AE			
			±20%	CGA4J3X8R2A333M125AE			
47 nF	1005	0.50+0.10,-0.05	±10%			CGA2B1X8R1E473K050BE	CGA2B3X8R1C473K050BE
			±20%			CGA2B1X8R1E473M050BE	CGA2B3X8R1C473M050BE
	1608	0.80+0.15,-0.10	±10%		CGA3E2X8R1H473K080AE		
			±20%		CGA3E2X8R1H473M080AE		
	2012	1.25+0.25,-0.20	±10%	CGA4J3X8R2A473K125AE			
			±20%	CGA4J3X8R2A473M125AE			

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Capacitance range table

X8R (-55 to +150°C, ±15%)

Capacitance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers			
				Rated voltage: DC100V	Rated voltage: DC50V	Rated voltage: DC25V	Rated voltage: DC16V
68 nF	1608	0.80+0.15,-0.10	±10%		CGA3E3X8R1H683K080AE	CGA3E2X8R1E683K080AE	
			±20%		CGA3E3X8R1H683M080AE	CGA3E2X8R1E683M080AE	
	2012	1.25+0.25,-0.20	±10%	CGA4J3X8R2A683K125AE	CGA4J2X8R1H683K125AE		
			±20%	CGA4J3X8R2A683M125AE	CGA4J2X8R1H683M125AE		
100 nF	1608	0.80+0.15,-0.10	±10%		CGA3E3X8R1H104K080AE	CGA3E2X8R1E104K080AE	
			±20%		CGA3E3X8R1H104M080AE	CGA3E2X8R1E104M080AE	
	2012	1.25+0.25,-0.20	±10%		CGA4J2X8R1H104K125AE		
			±20%		CGA4J2X8R1H104M125AE		
	3216	1.15±0.15	±10%	CGA5H2X8R2A104K115AE			
			±20%	CGA5H2X8R2A104M115AE			
150 nF	1608	0.80+0.15,-0.10	±10%			CGA3E3X8R1E154K080AE	
			±20%			CGA3E3X8R1E154M080AE	
	2012	0.85±0.15	±10%			CGA4F2X8R1E154K085AE	
			±20%			CGA4F2X8R1E154M085AE	
		1.25+0.25,-0.20	±10%		CGA4J3X8R1H154K125AE		
			±20%		CGA4J3X8R1H154M125AE		
	3216	1.60+0.30,-0.20	±10%	CGA5L2X8R2A154K160AE			
			±20%	CGA5L2X8R2A154M160AE			
220 nF	1608	0.80+0.15,-0.10	±10%			CGA3E3X8R1E224K080AE	
			±20%			CGA3E3X8R1E224M080AE	
	2012	1.25+0.25,-0.20	±10%		CGA4J3X8R1H224K125AE	CGA4J2X8R1E224K125AE	
			±20%		CGA4J3X8R1H224M125AE	CGA4J2X8R1E224M125AE	
	3216	1.60+0.30,-0.20	±10%	CGA5L3X8R2A224K160AE			
			±20%	CGA5L3X8R2A224M160AE			
330 nF	1608	0.80+0.15,-0.10	±10%			CGA3E1X8R1E334K080AE	CGA3E3X8R1C334K080AE
			±20%			CGA3E1X8R1E334M080AE	CGA3E3X8R1C334M080AE
	2012	1.25+0.25,-0.20	±10%			CGA4J2X8R1E334K125AE	
			±20%			CGA4J2X8R1E334M125AE	
	3216	1.60+0.30,-0.20	±10%	CGA5L3X8R2A334K160AE	CGA5L2X8R1H334K160AE		
			±20%	CGA5L3X8R2A334M160AE	CGA5L2X8R1H334M160AE		
470 nF	1608	0.80+0.15,-0.10	±10%				CGA3E3X8R1C474K080AE
			±20%				CGA3E3X8R1C474M080AE
	2012	1.25+0.25,-0.20	±10%			CGA4J3X8R1E474K125AE	
			±20%			CGA4J3X8R1E474M125AE	
	3216	1.60+0.30,-0.20	±10%		CGA5L2X8R1H474K160AE		
			±20%		CGA5L2X8R1H474M160AE		
	3225	2.00+0.30,-0.20	±10%	CGA6M3X8R2A474K200AE			
			±20%	CGA6M3X8R2A474M200AE			
680 nF	2012	1.25+0.25,-0.20	±10%			CGA4J1X8R1E684K125AE	CGA4J3X8R1C684K125AE
			±20%			CGA4J1X8R1E684M125AE	CGA4J3X8R1C684M125AE
	3216	1.60+0.30,-0.20	±10%		CGA5L3X8R1H684K160AE		
			±20%		CGA5L3X8R1H684M160AE		
	3225	2.50±0.30	±10%	CGA6P3X8R2A684K250AE			
			±20%	CGA6P3X8R2A684M250AE			
1 µF	2012	1.25+0.25,-0.20	±10%			CGA4J1X8R1E105K125AE	CGA4J3X8R1C105K125AE
			±20%			CGA4J1X8R1E105M125AE	CGA4J3X8R1C105M125AE
	3216	1.60+0.30,-0.20	±10%		CGA5L3X8R1H105K160AE	CGA5L2X8R1E105K160AE	
			±20%		CGA5L3X8R1H105M160AE	CGA5L2X8R1E105M160AE	
1.5 µF	3216	1.60+0.30,-0.20	±10%			CGA5L3X8R1E155K160AE	
			±20%			CGA5L3X8R1E155M160AE	
2.2 µF	3216	1.60+0.30,-0.20	±10%			CGA5L3X8R1E225K160AE	
			±20%			CGA5L3X8R1E225M160AE	
3.3 µF	3216	1.60+0.30,-0.20	±10%			CGA5L1X8R1E335K160AE	CGA5L3X8R1C335K160AE
			±20%			CGA5L1X8R1E335M160AE	CGA5L3X8R1C335M160AE
	3225	2.50±0.30	±10%			CGA6P2X8R1E335K250AE	
			±20%			CGA6P2X8R1E335M250AE	
4.7 µF	3216	1.60+0.30,-0.20	±10%			CGA5L1X8R1E475K160AE	CGA5L3X8R1C475K160AE
			±20%			CGA5L1X8R1E475M160AE	CGA5L3X8R1C475M160AE
	3225	2.50±0.30	±10%			CGA6P3X8R1E475K250AE	
			±20%			CGA6P3X8R1E475M250AE	
10 µF	3225	2.50±0.30	±10%			CGA6P1X8R1E106K250AE	CGA6P3X8R1C106K250AE
			±20%			CGA6P1X8R1E106M250AE	CGA6P3X8R1C106M250AE

・Gray: NRND (Not Recommended for New Designs)

・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.

Capacitance range table

X8L (-55 to +150°C, +15,-40%)

Capaci-tance	Size	Thickness (mm)	Cap Tolerance	Catalog numbers			
				Rated voltage: DC50V	Rated voltage: DC35V	Rated voltage: DC25V	Rated voltage: DC10V
470 nF	2012	1.25+0.25,-0.20	±10%	CGA4J1X8L1H474K125AE			
1 µF	2012	1.25+0.25,-0.20	±10%	CGA4J1X8L1H105K125AE			
2.2 µF	2012	1.25+0.25,-0.20	±10%		CGA4J1X8L1V225K125AE		
4.7 µF	2012	1.25+0.25,-0.20	±10%			CGA4J1X8L1E475K125AE	
10 µF	2012	1.25+0.25,-0.20	±10%				CGA4J1X8L1A106K125AE
	3216	1.60+0.30,-0.20	±10%			CGA5L1X8L1E106K160AE	

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