TDK

October 2024

MULTILAYER CERAMIC CHIP CAPACITORS

Automotive grade, MEGACAP type (Low resistance, inline type)

CA series

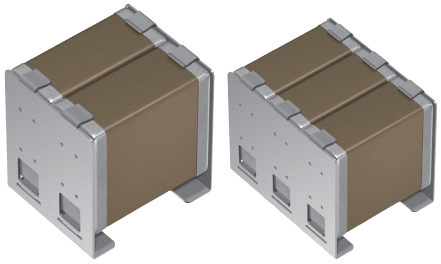
2-line type

CAA572 **[6.0x5.0 mm]**

3-line type

CAA573 **[6.0x7.5 mm]**

* Dimensions are typical values.



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 Law classification Class1,2)
   (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.

Notice: Effective January 2013, TDK will use a new catalog number which adds product thickness and packaging specification detail.
This new catalog number should be referenced on all catalog orders going forward, and is not applicable for OEM part number orders.
Please be aware the last five digits of the catalog number will differ from the item description (internal control number) on the product label.
Contact your local TDK Sales representative for more information.

(Example)

Catalog issued date	Catalog number	Item description (on delivery label)
Prior to January 2013	C1608C0G1E103J(080AA)	C1608C0G1E103JT000N
January 2013 and later	C1608C0G1E103J080AA	C1608C0G1E103JT000N

⚠ 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.

CA series

MEGACAP type (Low resistance, inline type)

Type: CAA572 [6.0x5.0 mm], CAA573 [6.0x7.5 mm]

RoHS REACH Halogen Free Lead Free

SERIES OVERVIEW

CA series is a product with metal frames attached to MLCCs terminal electrodes. Unlike conventional MEGACAP CKG series which MLCCs are stacked vertically, CA series adopts the inline structure which MLCCs are arranged side by side and optimizes the metal-frame materials. As a result, CA series achieves the capacitance increment while suppressing the increase of product height and electrical resistance.

FEATURES

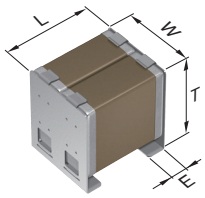
- Unique structure achieves high capacitance, high reliability and low resistance.
- Metal frame relieves mechanical stress and thermal shock.
- Because MLCCs and metal frames are joined with both high-temperature solder and clamps, the risk of MLCC fall during reflow reduces.
- Qualified based on AEC-Q200

APPLICATION

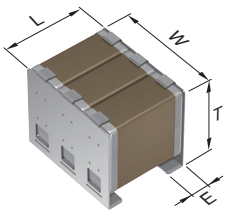
- X7x products: Smoothing and decoupling applications requiring high capacitance
- C0G products: Resonant circuits for wireless power supply, OBC (On Board Charger), etc.

SHAPE & DIMENSIONS

2-line type



3-line type



L	Body length
W	Body width
T	Body height
E	Metal-frame width

Dimensions in mm

Type	L	W	T	E
CAA572	6.00±0.50	5.00±0.50	6.40±0.50	1.20±0.20
CAA573	6.00±0.50	7.50±0.50	6.40±0.50	1.20±0.20

Dimensions are typical values.
Please refer to web page for details (Click the part numbers on page 6 to see the web page).

CATALOG NUMBER CONSTRUCTION

CA	A	57	3	X7R	1V	157	M	670	L	J
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)

(1)Series

(2)Reserved code

(3)Dimensions L x W (mm), (4) Structure

Dimensions code	Structure code	Length	Width	Metal-frame width
57	2	6.00	5.00	1.20
57	3	6.00	7.50	1.20

Dimensions are typical values.

(5)Temperature characteristics

Temperature characteristics	Temperature coefficient or capacitance change	Temperature range
C0G	0±30ppm/ ℃	−55 to +125 ℃
X6T	+22%,-33%	−55 to +105 ℃
X7R	±15%	−55 to +125 ℃
X7S	±22%	−55 to +125 ℃
X7T	+22%,−33%	−55 to +125 ℃

(6)Rated voltage (DC)

Code	Voltage (DC)
1E	25V
1V	35V
1H	50V
2A	100V
2V	350V
2W	450V
2J	630V
3A	1000V

(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 = 0.5pF
101 = 100pF
225 = 2,200,000pF = 2.2μF

(8)Capacitance tolerance

Code	Tolerance
G	± 2%
J	± 5%
M	±20%

(9)Thickness

Code	Thickness
640	6.40mm
670	6.70mm

(10)Packaging style

Code	Style
L	330mm reel, 12mm pitch

(11)Special reserved code

Code	Description
J	MEGACAP (with metal frame)

Capacitance range chart — CAA572 [6.0x5.0 mm], 2-line type

Capacitance		C0G		X6T	X7T		X7S	X7R		
(pF)	Code	3A (1kV)	2J (630V)	2W (450V)	2J (630V)	2V (350V)	2A (100V)	1H (50V)	1V (35V)	1E (25V)
20,000	203									
30,000	303									
44,000	443									
66,000	663									
200,000	204									
1,000,000	105									
2,200,000	225									
33,000,000	336									
47,000,000	476									
100,000,000	107									

Standard thickness 6.40 mm 6.70 mm

■Click the charts for details.

■For details such as the catalog numbers, please refer to the capacitance range table on page 6 and after.

Capacitance range chart — CAA573 [6.0x7.5 mm], 3-line type

Capacitance		C0G		X6T	X7T		X7S	X7R		
(pF)	Code	3A (1kV)	2J (630V)	2W (450V)	2J (630V)	2V (350V)	2A (100V)	1H (50V)	1V (35V)	1E (25V)
99,000	993									
300,000	304									
1,500,000	155									
3,300,000	335									
47,000,000	476									
68,000,000	686									
150,000,000	157									

Standard thickness 6.40 mm 6.70 mm

■Click the charts for details.

■For details such as the catalog numbers, please refer to the capacitance range table on page 6 and after.

Capacitance range table — Temperature characteristic: C0G (-55 to +125 ℃, 0±30ppm/ ℃)

Capacitance	Width (mm)	Thickness (mm)	Capacitance tolerance	Catalog number	
				Rated voltage Edc: 1kV	Rated voltage Edc: 630V
20nF	5.60±0.50	6.40±0.50	±2%	CAA572C0G3A203G640LJ	
			±5%	CAA572C0G3A203J640LJ	
30nF	5.60±0.50	6.40±0.50	±2%	CAA572C0G3A303G640LJ	
			±5%	CAA572C0G3A303J640LJ	
44nF	5.60±0.50	6.40±0.50	±2%	CAA572C0G3A443G640LJ	
			±5%	CAA572C0G3A443J640LJ	
66nF	5.60±0.50	6.40±0.50	±2%	CAA572C0G3A663G640LJ	
			±5%	CAA572C0G3A663J640LJ	
99nF	8.40±0.50	6.40±0.50	±2%	CAA573C0G3A993G640LJ	
			±5%	CAA573C0G3A993J640LJ	
200nF	5.60±0.50	6.40±0.50	±2%		CAA572C0G2J204G640LJ
			±5%		CAA572C0G2J204J640LJ
300nF	8.40±0.50	6.40±0.50	±2%		CAA573C0G2J304G640LJ
			±5%		CAA573C0G2J304J640LJ

Click the part numbers for details.

Capacitance range table — Temperature characteristic: X6T(-55 to +105 ℃, +22, -33%)

Capacitance	Width (mm)	Thickness (mm)	Capacitance tolerance	Catalog number
				Rated voltage Edc: 450V
2.2μF	5.00±0.50	6.40±0.50	±20%	CAA572X6T2W225M640LJ
3.3μF	7.50±0.50	6.40±0.50	±20%	CAA573X6T2W335M640LJ

Click the part numbers for details.

Capacitance range table — Temperature characteristic: X7R (-55 to +125 ℃, ±15%)

Capacitance	Width (mm)	Thickness (mm)	Capacitance tolerance	Catalog number		
				Rated voltage Edc: 50V	Rated voltage Edc: 35V	Rated voltage Edc: 25V
47μF	5.00±0.50	6.70±0.50	±20%	CAA572X7R1H476M670LJ	CAA572X7R1V476M670LJ	
68μF	7.50±0.50	6.70±0.50	±20%	CAA573X7R1H686M670LJ	CAA573X7R1V686M670LJ	
100μF	5.00±0.50	6.70±0.50	±20%		CAA572X7R1V107M670LJ	CAA572X7R1E107M670LJ
150μF	7.50±0.50	6.70±0.50	±20%		CAA573X7R1V157M670LJ	CAA573X7R1E157M670LJ

Click the part numbers for details.

Capacitance range table — Temperature characteristic: X7S (-55 to +125 ℃, ±22%)

Capacitance	Width (mm)	Thickness (mm)	Capacitance tolerance	Catalog number
				Rated voltage Edc: 100V
33μF	5.00±0.50	6.40±0.50	±20%	CAA572X7S2A336M640LJ
47μF	7.50±0.50	6.40±0.50	±20%	CAA573X7S2A476M640LJ

Click the part numbers for details.

Capacitance range table — Temperature characteristic: X7T (-55 to +125 ℃, +22, -33%)

Capacitance	Width (mm)	Thickness (mm)	Capacitance tolerance	Catalog number	
				Rated voltage Edc: 630V	Rated voltage Edc: 350V
1μF	5.00±0.50	6.40±0.50	±20%	CAA572X7T2J105M640LJ	
1.5μF	7.50±0.50	6.40±0.50	±20%	CAA573X7T2J155M640LJ	
2.2μF	5.00±0.50	6.40±0.50	±20%		CAA572X7T2V225M640LJ
3.3μF	7.50±0.50	6.40±0.50	±20%		CAA573X7T2V335M640LJ

Click the part numbers for details.