

MULTILAYER CERAMIC CHIP CAPACITORS

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

CA series

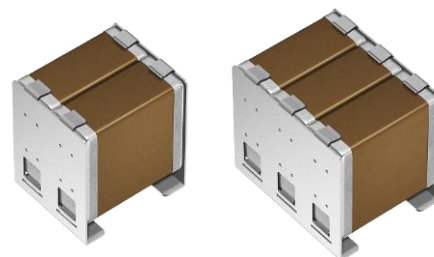
2-line type

CAA572 6.0 x 5.0 mm

3-line type

CAA572 6.0 x 7.5 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 | (8) Public information-processing equipment |
| (2) Transportation equipment (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.

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.

- 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 [6.0 x 5.0 mm], CAA573 [6.0 x 7.5 mm]

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

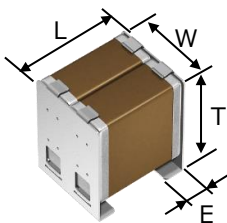
- Unique structure achieves high capacitance, high reliability and low resistance.
- Metal frame relieves mechanical stress and thermal shock.
- Because MLCCs and metal frames are joined with both high-temperature solder and clamps, the risk of MLCC fall during reflow reduces.
- Qualified based on AEC-Q200

APPLICATIONS

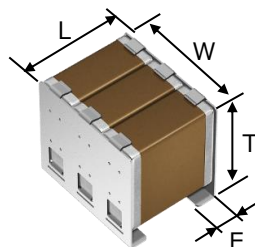
- Smoothing and decoupling applications requiring large capacitance
- Resonant circuits for wireless power supply, OBC (On Board Charger), etc.
- Snubber circuits for inverters

SHAPE & DIMENSIONS

2-line type



3-line type



L	Product length
W	Product width
T	Product thickness
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
	6.00±0.50	5.60±0.50	6.40±0.50	
	6.25±0.50	5.00±0.50	6.70±0.50	
CAA573	6.00±0.50	7.50±0.50	6.40±0.50	1.20±0.20
	6.00±0.50	8.40±0.50	6.40±0.50	
	6.25±0.50	7.50±0.50	6.70±0.50	

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

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 code, (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±30 ppm/°C	
X7R	±15%	-55 to +125 °C
X7S	±22%	
X7T	+22,-33%	
X6T	+22,-33%	-55 to +105 °C

(6) Rated voltage (DC)

Code	Voltage (DC)
1E	25 V
1V	35 V
1H	50 V
2A	100 V
2V	350 V
2W	450 V
2J	630 V
3A	1,000 V
3B	1,250 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%
M	±20%

(9) Nominal thickness

Code	Nominal thickness
640	6.40 mm
670	6.70 mm

(10) Packaging style

Code	Style
L	330 mm reel, 12 mm pitch

(11) Special reserved code

Code	Description
J	MEGACAP (with metal frame)

Capacitance range chart

2-line type: CAA572 [6.0 x 5.0 mm]

Capacitance		C0G			X6T	X7T		X7S	X7R		
(pF)	Code	3B (1,250V)	3A (1,000V)	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										

Nominal 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.

Capacitance range chart

3-line type: CAA573 [6.0 x 7.5 mm]

Capacitance		C0G			X6T	X7T		X7S	X7R		
(pF)	Code	3B (1,250V)	3A (1,000V)	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										

Nominal 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.

• 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

C0G (-55 to +125°C, 0±30 ppm/°C)

Capacitance	type	Thickness (mm)	Cap Tolerance	Catalog numbers		
				Rated voltage: DC1250V	Rated voltage: DC1000V	Rated voltage: DC630V
20 nF	2-line	6.40±0.50	±2%	CAA572C0G3B203G640LJ	CAA572C0G3A203G640LJ	
			±5%	CAA572C0G3B203J640LJ	CAA572C0G3A203J640LJ	
30 nF	2-line	6.40±0.50	±2%	CAA572C0G3B303G640LJ	CAA572C0G3A303G640LJ	
			±5%	CAA572C0G3B303J640LJ	CAA572C0G3A303J640LJ	
44 nF	2-line	6.40±0.50	±2%	CAA572C0G3B443G640LJ	CAA572C0G3A443G640LJ	
			±5%	CAA572C0G3B443J640LJ	CAA572C0G3A443J640LJ	
66 nF	2-line	6.40±0.50	±2%	CAA572C0G3B663G640LJ	CAA572C0G3A663G640LJ	
			±5%	CAA572C0G3B663J640LJ	CAA572C0G3A663J640LJ	
99 nF	3-line	6.40±0.50	±2%	CAA573C0G3B993G640LJ	CAA573C0G3A993G640LJ	
			±5%	CAA573C0G3B993J640LJ	CAA573C0G3A993J640LJ	
200 nF	2-line	6.40±0.50	±2%			CAA572C0G2J204G640LJ
			±5%			CAA572C0G2J204J640LJ
300 nF	3-line	6.40±0.50	±2%			CAA573C0G2J304G640LJ
			±5%			CAA573C0G2J304J640LJ

•Click the catalog numbers for details.

Capacitance range table

X6T (-55 to +105°C, +22,-33%)

Capacitance	type	Thickness (mm)	Cap Tolerance	Catalog numbers
				Rated voltage: DC450V
2.2 µF	2-line	6.40±0.50	±20%	CAA572X6T2W225M640LJ
3.3 µF	3-line	6.40±0.50	±20%	CAA573X6T2W335M640LJ

•Click the catalog numbers for details.

Capacitance range table

X7R (-55 to +125°C, ±15%)

Capacitance	type	Thickness (mm)	Cap Tolerance	Catalog numbers		
				Rated voltage: DC50V	Rated voltage: DC35V	Rated voltage: DC25V
47 µF	2-line	6.70±0.50	±20%	CAA572X7R1H476M670LJ	CAA572X7R1V476M670LJ	
68 µF	3-line	6.70±0.50	±20%	CAA573X7R1H686M670LJ	CAA573X7R1V686M670LJ	
100 µF	2-line	6.70±0.50	±20%		CAA572X7R1V107M670LJ	CAA572X7R1E107M670LJ
150 µF	3-line	6.70±0.50	±20%		CAA573X7R1V157M670LJ	CAA573X7R1E157M670LJ

•Click the catalog numbers for details.

Capacitance range table

X7S (-55 to +125°C, ±22%)

Capacitance	type	Thickness (mm)	Cap Tolerance	Catalog numbers
				Rated voltage: DC100V
33 µF	2-line	6.40±0.50	±20%	CAA572X7S2A336M640LJ
47 µF	3-line	6.40±0.50	±20%	CAA573X7S2A476M640LJ

•Click the catalog numbers for details.

Capacitance range table

X7T (-55 to +125°C, +22,-33%)

Capacitance	type	Thickness (mm)	Cap Tolerance	Catalog numbers	
				Rated voltage: DC630V	Rated voltage: DC350V
1 µF	2-line	6.40±0.50	±20%	CAA572X7T2J105M640LJ	
1.5 µF	3-line	6.40±0.50	±20%	CAA573X7T2J155M640LJ	
2.2 µF	2-line	6.40±0.50	±20%		CAA572X7T2V225M640LJ
3.3 µF	3-line	6.40±0.50	±20%		CAA573X7T2V335M640LJ

•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.