

MULTILAYER CERAMIC CHIP CAPACITORS

Commercial grade, MEGACAP type

CKG series

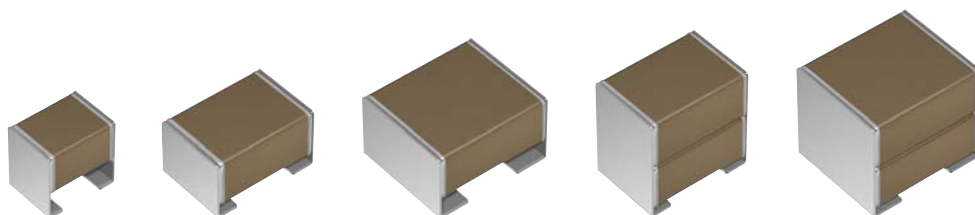
Single type

| | |
|--------|------------------|
| CKG32K | 3225 [1210 inch] |
| CKG45K | 4532 [1812 inch] |
| CKG57K | 5750 [2220 inch] |

Stacked type

| | |
|--------|------------------|
| CKG45N | 4532 [1812 inch] |
| CKG57N | 5750 [2220 inch] |

* 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 Law classification Class1,2) | (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 general-purpose applications |
| (7) Transportation control equipment | |

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.

- We may modify products or discontinue production of a product listed in this catalog without prior notification.
- 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.
- 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.
- Any reproduction or transferring of the contents of this catalog is prohibited without prior permission from our company.
- 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.
- 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 |

CKG series

MEGACAP type



Type: CKG32K/3225[1210 inch], CKG45K/4532[1812 inch], CKG57K/5750[2220 inch],
CKG45N/4532[1812 inch], CKG57N/5750[2220 inch]

SERIES OVERVIEW

CKG series, commercial grade of TDK's multilayer ceramic chip capacitor, is a product which metal frames are attached to terminal electrodes of MLCC, and it is also called MEGACAP. It has excellent resistance to mechanical stress because the flexible metal frame relieves stress by thermal shock and board bending. In addition, the stacked type is effective in mounting area reduction because twice capacitance functions by the stacked structure.

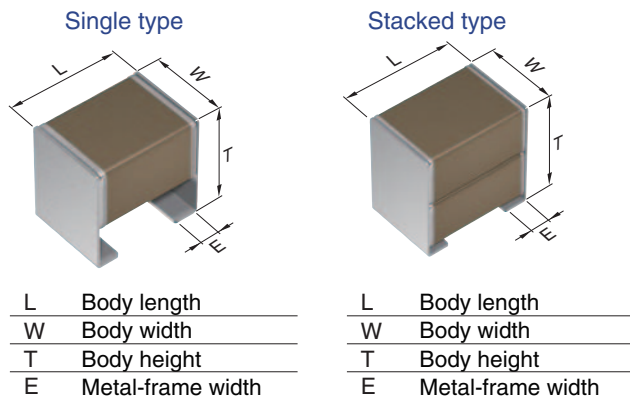
FEATURES

- Excellent resistance to mechanical stress and thermal shock by metal frame
- Twice capacitance functions by stacked structure
- C0G type having excellent stable temperature and DC-bias characteristics is also available
- Mounting on aluminum board is applicable

APPLICATIONS

- Smoothing and decoupling applications requiring high capacitance
- Resonant circuit of wireless power transfer, etc.: C0G type

SHAPE & DIMENSIONS



| Type | Dimensions in mm | | | |
|--------|------------------|-----------|-----------|-----------|
| | L | W | T | E |
| CKG32K | 3.60±0.30 | 2.60±0.30 | 3.35±0.10 | 0.80±0.15 |
| CKG45K | 5.00±0.50 | 3.50±0.50 | 2.90±0.10 | 1.10±0.30 |
| CKG57K | 6.00±0.50 | 5.00±0.50 | 3.35±0.15 | 1.60±0.30 |
| CKG45N | 5.00±0.50 | 3.50±0.50 | 5.00±0.50 | 1.10±0.30 |
| CKG57N | 6.00±0.50 | 5.00±0.50 | 5.00±0.50 | 1.60±0.30 |

* Dimensional tolerances are typical values.

MULTILAYER CERAMIC CHIP CAPACITORS



CATALOG NUMBER CONSTRUCTION

| | | | | | | | | | |
|------------|-----------|----------|------------|-----------|------------|----------|------------|----------|----------|
| CKG | 57 | N | X7R | 1E | 107 | M | 500 | J | H |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |

(1) Series

(2) Dimensions L x W (mm)

| Code | EIA | Length | Width | Metal frame width |
|------|--------|--------|-------|-------------------|
| 32 | CC1210 | 3.60 | 2.60 | 0.80 |
| 45 | CC1812 | 5.00 | 3.50 | 1.10 |
| 57 | CC2220 | 6.00 | 5.00 | 1.60 |

(3) Structure

| Code | Description |
|------|--------------|
| K | Single type |
| N | Stacked type |

(4) Temperature characteristics

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

(5) Rated voltage (DC)

| Code | Voltage (DC) |
|------|--------------|
| 1C | 16V |
| 1E | 25V |
| 1H | 50V |
| 2A | 100V |
| 2E | 250V |
| 2W | 450V |
| 2J | 630V |
| 3A | 1000V |

(6) 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

(7) Capacitance tolerance

| Code | Tolerance |
|------|-----------|
| J | ± 5% |
| K | ± 10% |
| M | ± 20% |

(8) Thickness

| Code | Thickness |
|------|-----------|
| 290 | 2.90 mm |
| 335 | 3.35 mm |
| 500 | 5.00 mm |

(9) Packaging style

| Code | Style |
|------|-----------------------|
| A | 178mm reel, 4mm pitch |
| J | 330mm reel, 8mm pitch |

(10) Special reserved code

| Code | Description |
|------|----------------------------|
| H | MEGACAP (with metal frame) |

MULTILAYER CERAMIC CHIP CAPACITORS TDK

Capacitance range chart

CKG32K/3225[1210 inch], Single type

| Capacitance | | C0G | | | | | X7R | | | | | X7S | | X7T | | |
|-------------|------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|----------|-----------|----------|-----------|-----------|-----------|
| (pF) | Code | 3A (1kV) | 2J (630V) | 2W (450V) | 2E (250V) | 2A (100V) | 2J (630V) | 2E (250V) | 2A (100V) | 1H (50V) | 1E (25V) | 2A (100V) | 1H (50V) | 2J (630V) | 2W (450V) | 2E (250V) |
| 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 | | | | | | | | | | | | | | | |
| 3,300,000 | 335 | | | | | | | | | | █ | █ | | | | |
| 4,700,000 | 475 | | | | | | | | | | | █ | █ | | | |
| 6,800,000 | 685 | | | | | | | | | | | | █ | █ | | |
| 10,000,000 | 106 | | | | | | | | | | | | | █ | █ | |

Standard thickness 3.35 mm

Background gray: These products are not recommended for new designs.

█ For details such as the catalog numbers, please refer to the capacitance range table on page 9 and after.

Capacitance range chart

CKG45K/4532[1812 inch], Single type

| Capacitance | | C0G | | | X7R | | | | | | X7S | | | X7T | | |
|-------------|------|-----------|-----------|-----------|-----------|-----------|-----------|----------|----------|----------|-----------|----------|----------|-----------|-----------|-----------|
| (pF) | Code | 2J (630V) | 2W (450V) | 2E (250V) | 2J (630V) | 2E (250V) | 2A (100V) | 1H (50V) | 1E (25V) | 1C (16V) | 2A (100V) | 1H (50V) | 1C (16V) | 2J (630V) | 2W (450V) | 2E (250V) |
| 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 | | | | | | | | | | | | | | | █ |
| 22,000,000 | 226 | | | | | | | | | | | | | | | █ |

Standard thickness 2.90 mm

Background gray: These products are not recommended for new designs.


█ For details such as the catalog numbers, please refer to the capacitance range table on page 9 and after.

⚠ 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 chart

CKG57K/5750[2220 inch], Single type

| Capacitance | | C0G | | X7R | | | | | | X7S | | | X7T | | |
|-------------|------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|--------------|-------------|-------------|--------------|--------------|--------------|
| (pF) | Code | 2J (630V) | 2E (250V) | 2J (630V) | 2E (250V) | 2A (100V) | 1H (50V) | 1E (25V) | 1C (16V) | 2A (100V) | 1H (50V) | 1C (16V) | 2J (630V) | 2W (450V) | 2E (250V) |
| 68,000 | 683 | ■ | | | | | | | | | | | | | |
| 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 | | | | | | ■ | ■ | | | | | | | |
| 47,000,000 | 476 | | | | | | | | | | | ■ | | | |

Standard thickness  3.35 mm

■ For details such as the catalog numbers, please refer to the capacitance range table on page 9 and after.

Capacitance range chart

CKG45N/4532[1812 inch], Stacked type

| Capacitance | | C0G | | | X5R | | X7R | | | | | |
|-------------|------|--------------|--------------|--------------|-------------|-------------|--------------|--------------|--------------|-------------|-------------|-------------|
| (pF) | Code | 2J (630V) | 2W (450V) | 2E (250V) | 1H (50V) | 1C (16V) | 2J (630V) | 2E (250V) | 2A (100V) | 1H (50V) | 1E (25V) | 1C (16V) |
| 66,000 | 663 | ■ | | | | | | | | | | |
| 94,000 | 943 | | ■ | | | | | | | | | |
| 140,000 | 144 | | | ■ | | | | | | | | |
| 220,000 | 224 | | | | | | ■ | | | | | |
| 470,000 | 474 | | | | | | | ■ | | | | |
| 1,000,000 | 105 | | | | | | | | ■ | | | |
| 2,200,000 | 225 | | | | | | | | | ■ | | |
| 3,300,000 | 335 | | | | | | | | | | ■ | |
| 4,700,000 | 475 | | | | | | | | | | | ■ |
| 6,800,000 | 685 | | | | | | | | | | | ■ |
| 10,000,000 | 106 | | | | ■ | | | | | | | ■ |
| 22,000,000 | 226 | | | | | | | | | | | ■ |
| 47,000,000 | 476 | | | | | ■ | | | | | | |

| Capacitance | | X7S | | | X7T | | |
|-------------|------|--------------|-------------|-------------|--------------|--------------|--------------|
| (pF) | Code | 2A (100V) | 1H (50V) | 1C (16V) | 2J (630V) | 2W (450V) | 2E (250V) |
| 330,000 | 334 | | | | ■ | | |
| 470,000 | 474 | | | | | ■ | |
| 680,000 | 684 | | | | | | ■ |
| 1,000,000 | 105 | | | | | | |
| 1,500,000 | 155 | | | | | | ■ |
| 2,200,000 | 225 | | | | | | |
| 6,800,000 | 685 | ■ | | | | | |
| 10,000,000 | 106 | | ■ | | | | |
| 47,000,000 | 476 | | | ■ | | | |

Standard thickness

■ 5.00 mm

■ Background gray: These products are not recommended for new designs.

■ For details such as the catalog numbers, please refer to the capacitance range table on page 9 and after.

Capacitance range chart


CKG57N/5750[2220 inch], Stacked type


| Capacitance | | C0G | | | | X5R | | | X7R | | | | |
|-------------|------|--------------|--------------|--------------|-------------|-------------|-------------|--------------|--------------|--------------|-------------|-------------|-------------|
| (pF) | Code | 2J (630V) | 2E (250V) | 2A (100V) | 1H (50V) | 1E (25V) | 1C (16V) | 2J (630V) | 2E (250V) | 2A (100V) | 1H (50V) | 1E (25V) | 1C (16V) |
| 140,000 | 144 | ■ | | | | | | | | | | | |
| 300,000 | 304 | | ■ | | | | | | | | | | |
| 470,000 | 474 | | | | | | | ■ | | | | | |
| 1,000,000 | 105 | | | | | | | | ■ | | | | |
| 2,200,000 | 225 | | | | | | | | ■ | ■ | | | |
| 4,700,000 | 475 | | | | | | | | | ■ | | | |
| 10,000,000 | 106 | | | ■ | | | | | | ■ | ■ | | |
| 22,000,000 | 226 | | | | ■ | | | | | | | ■ | |
| 33,000,000 | 336 | | | | | | | | | | | | ■ |
| 47,000,000 | 476 | | | | | ■ | | | | | ■ | | |
| 100,000,000 | 107 | | | | | | ■ | | | | | ■ | |

| Capacitance | | X7S | | | | X7T | | |
|-------------|------|--------------|-------------|-------------|-------------|--------------|--------------|--------------|
| (pF) | Code | 2A (100V) | 1H (50V) | 1E (25V) | 1C (16V) | 2J (630V) | 2W (450V) | 2E (250V) |
| 680,000 | 684 | | | | | ■ | | |
| 1,000,000 | 105 | | | | | ■ | | |
| 1,500,000 | 155 | | | | | | ■ | |
| 2,200,000 | 225 | | | | | | ■ | |
| 3,300,000 | 335 | | | | | | | ■ |
| 22,000,000 | 226 | ■ | ■ | | | | | |
| 47,000,000 | 476 | | | ■ | | | | |
| 100,000,000 | 107 | | | | ■ | | | |

Standard thickness

 5.00 mm

 Background gray: These products are not recommended for new designs.

 For details such as the catalog numbers, please refer to the capacitance range table on page 9 and after.

MULTILAYER CERAMIC CHIP CAPACITORS



Capacitance range table

Temperature characteristic: C0G (–55 to +125°C, 0±30ppm/°C)

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number | | | | |
|-------------|------------|----------------|-----------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| | | | | Rated voltage Edc: 1kV | Rated voltage Edc: 630V | Rated voltage Edc: 450V | Rated voltage Edc: 250V | Rated voltage Edc: 100V |
| 1nF | 3225 | 3.35±0.10 | ±5% | CKG32KC0G3A102J335AH | | | | |
| 1.2nF | 3225 | 3.35±0.10 | ±5% | CKG32KC0G3A122J335AH | | | | |
| 1.5nF | 3225 | 3.35±0.10 | ±5% | CKG32KC0G3A152J335AH | | | | |
| 1.8nF | 3225 | 3.35±0.10 | ±5% | CKG32KC0G3A182J335AH | | | | |
| 2.2nF | 3225 | 3.35±0.10 | ±5% | CKG32KC0G3A222J335AH | | | | |
| 2.7nF | 3225 | 3.35±0.10 | ±5% | CKG32KC0G3A272J335AH | | | | |
| 3.3nF | 3225 | 3.35±0.10 | ±5% | CKG32KC0G3A332J335AH | | | | |
| 3.9nF | 3225 | 3.35±0.10 | ±5% | CKG32KC0G3A392J335AH | | | | |
| 4.7nF | 3225 | 3.35±0.10 | ±5% | CKG32KC0G3A472J335AH | | | | |
| 5.6nF | 3225 | 3.35±0.10 | ±5% | CKG32KC0G3A562J335AH | | | | |
| 6.8nF | 3225 | 3.35±0.10 | ±5% | CKG32KC0G3A682J335AH | | | | |
| 8.2nF | 3225 | 3.35±0.10 | ±5% | CKG32KC0G3A822J335AH | | | | |
| 10nF | 3225 | 3.35±0.10 | ±5% | CKG32KC0G3A103J335AH | | | | |
| 15nF | 3225 | 3.35±0.10 | ±5% | CKG32KC0G3A153J335AH | | | | |
| 22nF | 3225 | 3.35±0.10 | ±5% | CKG32KC0G3A223J335AH | CKG32KC0G2J223J335AH | CKG32KC0G2W223J335AH | | |
| 33nF | 3225 | 3.35±0.10 | ±5% | | CKG32KC0G2J333J335AH | CKG32KC0G2W333J335AH | CKG32KC0G2E333J335AH | |
| | 4532 | 2.90±0.10 | ±5% | | CKG45KC0G2J333J290JH | | | |
| 47nF | 3225 | 3.35±0.10 | ±5% | | | | CKG32KC0G2E473J335AH | |
| | 4532 | 2.90±0.10 | ±5% | | | CKG45KC0G2W473J290JH | | |
| 66nF | 4532 | 5.00±0.50 | ±5% | | CKG45NC0G2J663J500JH | | | |
| 68nF | 3225 | 3.35±0.10 | ±5% | | | | | CKG32KC0G2A683J335AH |
| | 4532 | 2.90±0.10 | ±5% | | | | CKG45KC0G2E683J290JH | |
| 94nF | 5750 | 3.35±0.15 | ±5% | | CKG57KC0G2J683J335JH | | | |
| | 4532 | 5.00±0.50 | ±5% | | | CKG45NC0G2W943J500JH | | |
| 140nF | 4532 | 5.00±0.50 | ±10% | | | | CKG45NC0G2E144K500JH | |
| | 5750 | 5.00±0.50 | ±10% | | CKG57NC0G2J144K500JH | | | |
| 150nF | 5750 | 3.35±0.15 | ±5% | | | | CKG57KC0G2E154J335JH | |
| 300nF | 5750 | 5.00±0.50 | ±5% | | | | CKG57NC0G2E304J500JH | |

■ Gray items: These products are not recommended for new designs.
Click the part numbers for details.

Capacitance range table

Temperature characteristic: X5R (–55 to +85°C, ±15%)

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number | | | |
|-------------|------------|----------------|-----------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| | | | | Rated voltage Edc: 100V | Rated voltage Edc: 50V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 10µF | 4532 | 5.00±0.50 | ±20% | | CKG45NX5R1H106M500JH | | |
| | 5750 | 5.00±0.50 | ±20% | CKG57NX5R2A106M500JH | | | |
| 22µF | 5750 | 5.00±0.50 | ±20% | | CKG57NX5R1H226M500JH | | |
| 47µF | 4532 | 5.00±0.50 | ±20% | | | | CKG45NX5R1C476M500JH |
| | 5750 | 5.00±0.50 | ±20% | | | CKG57NX5R1E476M500JH | |
| 100µF | 5750 | 5.00±0.50 | ±20% | | | | CKG57NX5R1C107M500JH |

■ Gray items: These products are not recommended for new designs.
Click the part numbers for details.

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MULTILAYER CERAMIC CHIP CAPACITORS



Capacitance range table

Temperature characteristic: X7R (-55 to +125°C, ±15%)

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number | | | |
|-------------|------------|----------------|-----------------------|-------------------------|-------------------------|-------------------------|------------------------|
| | | | | Rated voltage Edc: 630V | Rated voltage Edc: 250V | Rated voltage Edc: 100V | Rated voltage Edc: 50V |
| 47nF | 3225 | 3.35±0.10 | ±10% | CKG32KX7R2J473K335AH | | | |
| | | | ±20% | CKG32KX7R2J473M335AH | | | |
| 100nF | 3225 | 3.35±0.10 | ±10% | | CKG32KX7R2E104K335AH | | |
| | | | ±20% | | CKG32KX7R2E104M335AH | | |
| | 4532 | 2.90±0.10 | ±10% | CKG45KX7R2J104K290JH | | | |
| | | | ±20% | CKG45KX7R2J104M290JH | | | |
| 220nF | 3225 | 3.35±0.10 | ±10% | | CKG32KX7R2E224K335AH | | |
| | | | ±20% | | CKG32KX7R2E224M335AH | | |
| | 4532 | 2.90±0.10 | ±10% | | CKG45KX7R2E224K290JH | | |
| | | | ±20% | | CKG45KX7R2E224M290JH | | |
| | 5750 | 3.35±0.15 | ±10% | CKG57KX7R2J224K335JH | | | |
| | | | ±20% | CKG57KX7R2J224M335JH | | | |
| 470nF | 3225 | 3.35±0.10 | ±10% | | | CKG32KX7R2A474K335AH | |
| | | | ±20% | | | CKG32KX7R2A474M335AH | |
| | 4532 | 2.90±0.10 | ±10% | | CKG45KX7R2E474K290JH | | |
| | | | ±20% | | CKG45KX7R2E474M290JH | | |
| | 5750 | 3.35±0.15 | ±10% | | CKG45NX7R2E474M500JH | | |
| | | | ±20% | | CKG57KX7R2E474K335JH | | |
| | | 5.00±0.50 | ±10% | | CKG57KX7R2E474M335JH | | |
| | | | ±20% | CKG57NX7R2J474M500JH | | | |
| 1µF | 3225 | 3.35±0.10 | ±10% | | | CKG32KX7R2A105K335AH | CKG32KX7R1H105K335AH |
| | | | ±20% | | | CKG32KX7R2A105M335AH | CKG32KX7R1H105M335AH |
| | 4532 | 2.90±0.10 | ±10% | | | CKG45KX7R2A105K290JH | |
| | | | ±20% | | | CKG45KX7R2A105M290JH | |
| | 5750 | 3.35±0.15 | ±10% | | CKG45NX7R2E105M500JH | | |
| | | | ±20% | | CKG57KX7R2A105K335JH | CKG57KX7R2A105K335JH | |
| | | 5.00±0.50 | ±10% | | CKG57KX7R2E105M335JH | CKG57KX7R2A105M335JH | |
| | | | ±20% | | CKG57NX7R2E105M500JH | | |
| 1.5µF | 4532 | 2.90±0.10 | ±10% | | | | CKG45KX7R1H155K290JH |
| | | | ±20% | | | | CKG45KX7R1H155M290JH |
| 2.2µF | 3225 | 3.35±0.10 | ±10% | | | CKG32KX7R2A225K335AH | |
| | | | ±20% | | | CKG32KX7R2A225M335AH | |
| | 4532 | 2.90±0.10 | ±10% | | | CKG45KX7R2A225K290JH | |
| | | | ±20% | | | CKG45KX7R2A225M290JH | |
| | 5750 | 3.35±0.15 | ±10% | | CKG45NX7R2A225M500JH | | |
| | | | ±20% | | CKG57KX7R2A225K335JH | CKG57KX7R2A225M335JH | |
| | | 5.00±0.50 | ±10% | | CKG57KX7R2E225M500JH | CKG57NX7R2A225M500JH | |
| | | | ±20% | | CKG57NX7R2E225M500JH | CKG57NX7R2A225M500JH | |

■ Gray items: These products are not recommended for new designs.
Click the part numbers for details.

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MULTILAYER CERAMIC CHIP CAPACITORS



Capacitance range table

Temperature characteristic: X7R (-55 to +125°C, ±15%)

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number | | | |
|-------------|------------|----------------------|-----------------------|-------------------------|------------------------|------------------------|------------------------|
| | | | | Rated voltage Edc: 100V | Rated voltage Edc: 50V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 3.3µF | 4532 | 2.90±0.10 | ±10% | | CKG45KX7R1H335K290JH | | |
| | | | ±20% | | CKG45KX7R1H335M290JH | | |
| | 5.00±0.50 | ±20% | | CKG45NX7R1H335M500JH | | | |
| | | ±10% | CKG57KX7R2A335K335JH | | | | |
| 5750 | 3.35±0.15 | ±20% | CKG57KX7R2A335M335JH | | | | |
| | | ±10% | | | | CKG32KX7R1E475K335AH | |
| 4.7µF | 3225 | 3.35±0.10 | ±20% | | | CKG32KX7R1E475M335AH | |
| | | | ±10% | | | CKG45KX7R1E475K290JH | |
| | 4532 | 2.90±0.10 | ±20% | | | CKG45KX7R1E475M290JH | |
| | | | ±10% | CKG45NX7R2A475M500JH | | | |
| 5.00±0.50 | ±20% | CKG57KX7R2A475K335JH | CKG57KX7R1H475K335JH | | | | |
| | ±10% | CKG57KX7R2A475M335JH | CKG57KX7R1H475M335JH | | | | |
| 5750 | 3.35±0.15 | ±20% | CKG57NX7R2A475M500JH | | | | |
| | | ±10% | | | | | |
| 6.8µF | 4532 | 5.00±0.50 | ±20% | | CKG45NX7R1H685M500JH | | |
| | | | ±10% | | | | CKG32KX7R1E106K335AH |
| 3225 | 3.35±0.10 | ±20% | | | | CKG32KX7R1E106M335AH | |
| | | ±10% | | | | CKG45KX7R1C106K290JH | |
| 10µF | 4532 | 2.90±0.10 | ±20% | | | | CKG45KX7R1C106M290JH |
| | | | ±10% | | | | CKG45NX7R1E106M500JH |
| | 5.00±0.50 | ±20% | | | | | CKG57KX7R1E106K335JH |
| | | ±10% | CKG57KX7R1E106M335JH | | | | |
| 5750 | 3.35±0.15 | ±20% | CKG57NX7R2A106M500JH | CKG57NX7R1H106M500JH | | | |
| | | ±10% | | | | | |
| 15µF | 5750 | 3.35±0.15 | ±20% | | | | CKG57KX7R1C156M335JH |
| | | | ±10% | | | | CKG45KX7R1C226M290JH |
| 22µF | 4532 | 2.90±0.10 | ±20% | | | | CKG45NX7R1C226M500JH |
| | | | ±10% | | | | |
| 5.00±0.50 | 5750 | 3.35±0.15 | ±20% | | CKG57KX7R1H226M335JH | CKG57KX7R1E226M335JH | |
| | | | ±10% | | | CKG57NX7R1E226M500JH | |
| 33µF | 5750 | 5.00±0.50 | ±20% | | | | CKG57NX7R1C336M500JH |
| | | | ±10% | | | | CKG57KX7R1E476M335JH |
| 47µF | 5750 | 3.35±0.15 | ±20% | | | | CKG57NX7R1H476M500JH |
| | | | ±10% | | | | CKG57NX7R1E107M500JH |
| 100µF | 5750 | 5.00±0.50 | ±20% | | | | |
| | | | ±10% | | | | |

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Click the part numbers for details.

Capacitance range table

Temperature characteristic: X7S (-55 to +125°C, ±22%)

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number | | | |
|-------------|------------|----------------|-----------------------|-------------------------|------------------------|------------------------|------------------------|
| | | | | Rated voltage Edc: 100V | Rated voltage Edc: 50V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 3.3µF | 3225 | 3.35±0.10 | ±10% | CKG32KX7S2A335K335AH | | | |
| | | | ±20% | CKG32KX7S2A335M335AH | | | |
| | 4532 | 2.90±0.10 | ±10% | CKG45KX7S2A335K290JH | | | |
| | | | ±20% | CKG45KX7S2A335M290JH | | | |
| 4.7µF | 3225 | 3.35±0.10 | ±10% | CKG32KX7S2A475K335AH | CKG32KX7S1H475K335AH | | |
| | | | ±20% | CKG32KX7S2A475M335AH | CKG32KX7S1H475M335AH | | |
| | 4532 | 2.90±0.10 | ±10% | CKG45KX7S2A475K290JH | CKG45KX7S1H475K290JH | | |
| | | | ±20% | CKG45KX7S2A475M290JH | CKG45KX7S1H475M290JH | | |
| 6.8µF | 3225 | 3.35±0.10 | ±10% | | | CKG32KX7S1H685K335AH | |
| | | | ±20% | | | CKG32KX7S1H685M335AH | |
| | 4532 | 5.00±0.50 | ±20% | CKG45NX7S2A685M500JH | | | |
| | | | ±10% | CKG57KX7S2A685K335JH | | | |
| 5750 | 3.35±0.15 | ±20% | CKG57KX7S2A685M335JH | | | | |
| | | ±10% | | | | | |
| 10µF | 3225 | 3.35±0.10 | ±10% | | CKG32KX7S1H106K335AH | | |
| | | | ±20% | | CKG32KX7S1H106M335AH | | |
| | 4532 | 5.00±0.50 | ±20% | CKG45NX7S2A106M500JH | CKG45NX7S1H106M500JH | | |
| | | | ±10% | CKG57KX7S2A106K335JH | CKG57KX7S1H106K335JH | | |
| 5750 | 3.35±0.15 | ±20% | CKG57KX7S2A106M335JH | CKG57KX7S1H106M335JH | | | |
| | | ±10% | | | | | |
| 15µF | 5750 | 3.35±0.15 | ±20% | CKG57KX7S2A156M335JH | | | |
| | | | ±10% | | | | |
| 22µF | 4532 | 2.90±0.10 | ±20% | | | | CKG45KX7S1C226M290JH |
| | | | ±10% | | | | |
| 5.00±0.50 | 5750 | 5.00±0.50 | ±20% | CKG57NX7S2A226M500JH | CKG57NX7S1H226M500JH | | |
| | | | ±10% | | | | |
| 47µF | 4532 | 5.00±0.50 | ±20% | | | | CKG45NX7S1C476M500JH |
| | | | ±10% | | | | CKG57KX7S1C476M335JH |
| 5750 | 3.35±0.15 | ±20% | | | | | |
| | | ±10% | | | | | |
| 5.00±0.50 | 5750 | 5.00±0.50 | ±20% | | | CKG57NX7S1E476M500JH | |
| | | | ±10% | | | | |
| 100µF | 5750 | 5.00±0.50 | ±20% | | | | CKG57NX7S1C107M500JH |
| | | | ±10% | | | | |

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Capacitance range table

Temperature characteristic: X7T (-55 to +125°C, +22,-33%)

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number | | |
|-------------|------------|----------------|-----------------------|-------------------------|-------------------------|-------------------------|
| | | | | Rated voltage Edc: 630V | Rated voltage Edc: 450V | Rated voltage Edc: 250V |
| 100nF | 3225 | 3.35±0.10 | ±10% | CKG32KX7T2J104K335AH | | |
| | | | ±20% | CKG32KX7T2J104M335AH | | |
| 150nF | 3225 | 3.35±0.10 | ±10% | CKG32KX7T2J154K335AH | | |
| | | | ±20% | CKG32KX7T2J154M335AH | | |
| | 4532 | 2.90±0.10 | ±10% | CKG45KX7T2J154K290JH | | |
| | | | ±20% | CKG45KX7T2J154M290JH | | |
| 220nF | 3225 | 3.35±0.10 | ±10% | | CKG32KX7T2W224K335AH | |
| | | | ±20% | | CKG32KX7T2W224M335AH | |
| | 4532 | 2.90±0.10 | ±10% | CKG45KX7T2J224K290JH | | |
| | | | ±20% | CKG45KX7T2J224M290JH | | |
| 330nF | 3225 | 3.35±0.10 | ±10% | | | CKG32KX7T2E334K335AH |
| | | | ±20% | | | CKG32KX7T2E334M335AH |
| | 4532 | 2.90±0.10 | ±10% | | CKG45KX7T2W334K290JH | |
| | | | ±20% | | CKG45KX7T2W334M290JH | |
| | | 5.00±0.50 | ±20% | CKG45NX7T2J334M500JH | | |
| | 5750 | 3.35±0.15 | ±10% | CKG57KX7T2J334K335JH | | |
| ±20% | | | CKG57KX7T2J334M335JH | | | |
| 470nF | 4532 | 2.90±0.10 | ±10% | | CKG45KX7T2W474K290JH | |
| | | | ±20% | | CKG45KX7T2W474M290JH | |
| | | 5.00±0.50 | ±20% | CKG45NX7T2J474M500JH | | |
| | 5750 | 3.35±0.15 | ±10% | CKG57KX7T2J474K335JH | | |
| ±20% | | | CKG57KX7T2J474M335JH | | | |
| 680nF | 4532 | 2.90±0.10 | ±10% | | | CKG45KX7T2E684K290JH |
| | | | ±20% | | | CKG45KX7T2E684M290JH |
| | | 5.00±0.50 | ±20% | | CKG45NX7T2W684M500JH | |
| | 5750 | 3.35±0.15 | ±10% | CKG57KX7T2W684K335JH | | |
| ±20% | | | CKG57KX7T2W684M335JH | | | |
| | 5.00±0.50 | ±20% | CKG57NX7T2J684M500JH | | | |
| 1µF | 4532 | 2.90±0.10 | ±10% | | | CKG45KX7T2E105K290JH |
| | | | ±20% | | | CKG45KX7T2E105M290JH |
| | | 5.00±0.50 | ±20% | | CKG45NX7T2W105M500JH | |
| | 5750 | 3.35±0.15 | ±10% | CKG57KX7T2W105K335JH | | |
| ±20% | | | CKG57KX7T2W105M335JH | | | |
| | 5.00±0.50 | ±20% | CKG57NX7T2J105M500JH | | | |
| 1.5µF | 4532 | 5.00±0.50 | ±20% | | | CKG45NX7T2E155M500JH |
| | | | | | | CKG57KX7T2E155K335JH |
| | 5750 | 3.35±0.15 | ±10% | | | CKG57KX7T2E155M335JH |
| | | | ±20% | | CKG57NX7T2W155M500JH | |
| | 5.00±0.50 | ±20% | | | CKG45NX7T2E225M500JH | |
| 2.2µF | 5750 | 3.35±0.15 | ±10% | | | CKG57KX7T2E225K335JH |
| | | | ±20% | | | CKG57KX7T2E225M335JH |
| | | 5.00±0.50 | ±20% | | CKG57NX7T2W225M500JH | |
| | | 5.00±0.50 | ±20% | | | CKG57NX7T2E335M500JH |

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Click the part numbers for details.