

# MULTILAYER CERAMIC CHIP CAPACITORS

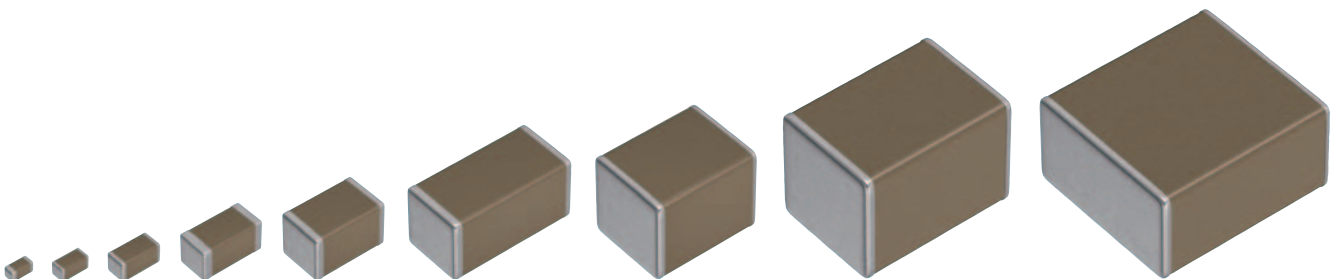
Commercial grade, general (Up to 75V)

## C series

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|              |                     |
|--------------|---------------------|
| <b>C0402</b> | <b>[01005 inch]</b> |
| <b>C0603</b> | <b>[0201 inch]</b>  |
| <b>C1005</b> | <b>[0402 inch]</b>  |
| <b>C1608</b> | <b>[0603 inch]</b>  |
| <b>C2012</b> | <b>[0805 inch]</b>  |
| <b>C3216</b> | <b>[1206 inch]</b>  |
| <b>C3225</b> | <b>[1210 inch]</b>  |
| <b>C4532</b> | <b>[1812 inch]</b>  |
| <b>C5750</b> | <b>[2220 inch]</b>  |

\* 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                  |

# C series

## General (Up to 75V)



Type: C0402 [01005 inch], C0603 [0201 inch], C1005 [0402 inch], C1608 [0603 inch], C2012 [0805 inch], C3216 [1206 inch], C3225 [1210 inch], C4532 [1812 inch], C5750 [2220 inch]

### SERIES OVERVIEW

General type C series, commercial grade of TDK's multilayer ceramic chip capacitor, is a surface-mounted component, which multilayer dielectrics and inner electrodes are stacked alternately. The monolithic structure ensures superior mechanical strength and high reliability. Also, outstanding frequency characteristics such as low ESR and low ESL are provided owing to the simpler structure than other capacitors. The capacitance range is up to 100 $\mu$ F and the lineup has been expanding to a range of the film capacitor and electrolytic capacitor.

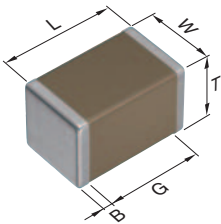
### FEATURES

- Superior mechanical strength and high reliability due to the monolithic structure
- Outstanding frequency characteristics such as low ESR and low ESL by the simple structure
- Low self-heating value and high resistance to ripple on account of the low ESR
- No polarity

### APPLICATIONS

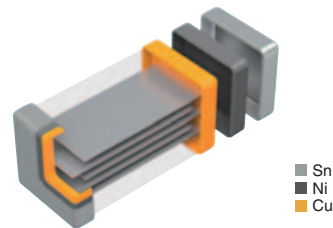
- General electronic equipment
- Mobile devices
- Servers, PCs, tablets
- Power supply circuit

### SHAPE & DIMENSIONS



|   |                  |
|---|------------------|
| L | Body length      |
| W | Body width       |
| T | Body height      |
| B | Terminal width   |
| G | Terminal spacing |

### PRODUCT STRUCTURE



The structure which multilayer dielectrics and inner electrodes are stacked alternately. The monolithic and simple structure contributes to superior mechanical strength and excellent frequency characteristics.

Dimensions in mm

| Type  | L         | W         | T         | B         | G         |
|-------|-----------|-----------|-----------|-----------|-----------|
| C0402 | 0.40±0.02 | 0.20±0.02 | 0.20±0.02 | 0.07 min. | 0.14 min. |
| C0603 | 0.60±0.03 | 0.30±0.03 | 0.30±0.03 | 0.10 min. | 0.20 min. |
| C1005 | 1.00±0.05 | 0.50±0.05 | 0.50±0.05 | 0.10 min. | 0.30 min. |
| C1608 | 1.60±0.10 | 0.80±0.10 | 0.80±0.10 | 0.20 min. | 0.30 min. |
| C2012 | 2.00±0.20 | 1.25±0.20 | 1.25±0.20 | 0.20 min. | 0.50 min. |
| C3216 | 3.20±0.20 | 1.60±0.20 | 1.60±0.20 | 0.20 min. | 1.00 min. |
| C3225 | 3.20±0.40 | 2.50±0.30 | 2.50±0.30 | 0.20 min. | —         |
| C4532 | 4.50±0.40 | 3.20±0.40 | 3.20±0.40 | 0.20 min. | —         |
| C5750 | 5.70±0.40 | 5.00±0.40 | 2.80±0.30 | 0.20 min. | —         |

\*Dimensional tolerances are typical values.

**CATALOG NUMBER CONSTRUCTION**

|          |             |            |           |            |          |            |          |          |
|----------|-------------|------------|-----------|------------|----------|------------|----------|----------|
| <b>C</b> | <b>3216</b> | <b>X5R</b> | <b>1A</b> | <b>107</b> | <b>M</b> | <b>160</b> | <b>A</b> | <b>C</b> |
| (1)      | (2)         | (3)        | (4)       | (5)        | (6)      | (7)        | (8)      | (9)      |

## (1) Series

## (2) Dimensions L x W (mm)

| Code | EIA     | Length | Width | Terminal width |
|------|---------|--------|-------|----------------|
| 0402 | CC01005 | 0.40   | 0.20  | 0.07           |
| 0603 | CC0201  | 0.60   | 0.30  | 0.10           |
| 1005 | CC0402  | 1.00   | 0.50  | 0.10           |
| 1608 | CC0603  | 1.60   | 0.80  | 0.20           |
| 2012 | CC0805  | 2.00   | 1.25  | 0.20           |
| 3216 | CC1206  | 3.20   | 1.60  | 0.20           |
| 3225 | CC1210  | 3.20   | 2.50  | 0.20           |
| 4532 | CC1812  | 4.50   | 3.20  | 0.20           |
| 5750 | CC2220  | 5.70   | 5.00  | 0.20           |

## (3) Temperature characteristics

| Temperature characteristics | Temperature coefficient or capacitance change | Temperature range |
|-----------------------------|---|-------------------|
| CH                          | 0±60 ppm/°C                                   | -25 to +85°C      |
| C0G                         | 0±30 ppm/°C                                   | -55 to +125°C     |
| JB                          | ±10%  | -25 to +85°C      |
| X5R                         | ±15%  | -55 to +85°C      |
| X6S                         | ±22%  | -55 to +105°C     |
| X7R                         | ±15%  | -55 to +125°C     |
| X7S                         | ±22%  | -55 to +125°C     |
| X7T                         | +22,-33%                                      | -55 to +125°C     |

## (4) Rated voltage (DC)

| Code | Voltage (DC) |
|------|--------------|
| 0G   | 4V           |
| 0J   | 6.3V         |
| 1A   | 10V          |
| 1C   | 16V          |
| 1E   | 25V          |
| 1V   | 35V          |
| 1H   | 50V          |
| 1N   | 75V          |

## (5) Nominal capacitance (pF)

The capacitance is expressed in three digit codes and in units of pico Farads (pF). The first and second digits identify the first and second significant figures of the capacitance. The third digit identifies the multiplier. R designates a decimal point.

(Example)0R5 = 0.5pF  
 101 = 100pF  
 225 = 2,200,000pF = 2.2μF

## (6) Capacitance tolerance

| Code | Tolerance |
|------|-----------|
| B    | ±0.10pF   |
| C    | ±0.25pF   |
| D    | ±0.50pF   |
| F    | ±1%       |
| G    | ±2%       |
| J    | ±5%       |
| K    | ±10%      |
| M    | ±20%      |

## (7) Thickness

| Code | Thickness |
|------|-----------|
| 020  | 0.20 mm   |
| 030  | 0.30 mm   |
| 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   |
| 280  | 2.80 mm   |
| 320  | 3.20 mm   |

## (8) Packaging style

| Code | Style                 |
|------|-----------------------|
| A    | 178mm reel, 4mm pitch |
| B    | 178mm reel, 2mm pitch |
| K    | 178mm reel, 8mm pitch |

## (9) Special reserved code

| Code    | Description       |
|---------|-------------------|
| A, B, C | TDK internal code |

## Capacitance range chart

C0402 [01005 inch]

| Capacitance |      | C0G | CH | JB          |             |             |             |
|-------------|------|-----|----|-------------|-------------|-------------|-------------|
| (pF)        | Code |     |    | 1C<br>(16V) | 1C<br>(16V) | 1C<br>(16V) | 1A<br>(10V) |
| 0.5         | 0R5  |     |    |             |             |             |             |
| 0.75        | R75  |     |    |             |             |             |             |
| 1           | 010  |     |    |             |             |             |             |
| 1.5         | 1R5  |     |    |             |             |             |             |
| 2           | 020  |     |    |             |             |             |             |
| 2.2         | 2R2  |     |    |             |             |             |             |
| 3           | 030  |     |    |             |             |             |             |
| 3.3         | 3R3  |     |    |             |             |             |             |
| 4           | 040  |     |    |             |             |             |             |
| 4.7         | 4R7  |     |    |             |             |             |             |
| 5           | 050  |     |    |             |             |             |             |
| 6           | 060  |     |    |             |             |             |             |
| 6.8         | 6R8  |     |    |             |             |             |             |
| 7           | 070  |     |    |             |             |             |             |
| 8           | 080  |     |    |             |             |             |             |
| 9           | 090  |     |    |             |             |             |             |
| 10          | 100  |     |    |             |             |             |             |
| 12          | 120  |     |    |             |             |             |             |
| 15          | 150  |     |    |             |             |             |             |
| 18          | 180  |     |    |             |             |             |             |
| 22          | 220  |     |    |             |             |             |             |
| 27          | 270  |     |    |             |             |             |             |
| 33          | 330  |     |    |             |             |             |             |
| 39          | 390  |     |    |             |             |             |             |
| 47          | 470  |     |    |             |             |             |             |
| 56          | 560  |     |    |             |             |             |             |
| 68          | 680  |     |    |             |             |             |             |
| 82          | 820  |     |    |             |             |             |             |
| 100         | 101  |     |    |             |             |             |             |
| 150         | 151  |     |    |             |             |             |             |
| 220         | 221  |     |    |             |             |             |             |
| 330         | 331  |     |    |             |             |             |             |
| 470         | 471  |     |    |             |             |             |             |
| 680         | 681  |     |    |             |             |             |             |
| 1,000       | 102  |     |    |             |             |             |             |
| 1,500       | 152  |     |    |             |             |             |             |
| 2,200       | 222  |     |    |             |             |             |             |

Standard thickness

0.20 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 24 and after.

## Capacitance range chart

C0402 [01005 inch]

| Capacitance |      | X5R         |             |              |            | X6S         |              |            | X7R         |              |            |
|-------------|------|-------------|-------------|--------------|------------|-------------|--------------|------------|-------------|--------------|------------|
| (pF)        | Code | 1C<br>(16V) | 1A<br>(10V) | 0J<br>(6.3V) | 0G<br>(4V) | 1A<br>(10V) | 0J<br>(6.3V) | 0G<br>(4V) | 1A<br>(10V) | 0J<br>(6.3V) | 0G<br>(4V) |
| 100         | 101  | █           |             |              |            | █           | █            | █          | █           | █            | █          |
| 150         | 151  | █           |             |              |            | █           | █            | █          | █           | █            | █          |
| 220         | 221  | █           |             |              |            | █           | █            | █          | █           | █            | █          |
| 330         | 331  | █           |             |              |            | █           | █            | █          | █           | █            | █          |
| 470         | 471  | █           |             |              |            | █           | █            | █          | █           | █            | █          |
| 680         | 681  | █           |             |              |            | █           | █            | █          | █           | █            | █          |
| 1,000       | 102  |             | █           | █            | █          |             |              |            | █           |              |            |
| 1,500       | 152  |             | █           | █            | █          |             |              |            | █           |              |            |
| 2,200       | 222  |             | █           | █            | █          |             |              |            | █           |              |            |

Standard thickness  
 0.20 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 24 and after.

## Capacitance range chart

C0603 [0201 inch]



| Capacitance |      | C0G         |             | CH          |             | JB          |             |             |              | X5R         |             |             |              |            |
|-------------|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|--------------|------------|
| (pF)        | Code | 1H<br>(50V) | 1E<br>(25V) | 1H<br>(50V) | 1E<br>(25V) | 1E<br>(25V) | 1C<br>(16V) | 1A<br>(10V) | 0J<br>(6.3V) | 1E<br>(25V) | 1C<br>(16V) | 1A<br>(10V) | 0J<br>(6.3V) | 0G<br>(4V) |
| 0.5         | 0R5  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 0.75        | R75  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 1           | 010  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 1.5         | 1R5  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 2           | 020  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 2.2         | 2R2  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 3           | 030  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 3.3         | 3R3  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 4           | 040  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 4.7         | 4R7  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 5           | 050  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 6           | 060  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 6.8         | 6R8  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 7           | 070  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 8           | 080  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 9           | 090  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 10          | 100  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 12          | 120  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 15          | 150  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 18          | 180  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 22          | 220  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 27          | 270  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 33          | 330  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 39          | 390  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 47          | 470  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 56          | 560  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 68          | 680  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 82          | 820  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 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  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 47,000      | 473  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 100,000     | 104  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 150,000     | 154  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 220,000     | 224  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 330,000     | 334  |             |             |             |             |             |             |             |              |             |             |             |              |            |
| 470,000     | 474  |             |             |             |             |             |             |             |              |             |             |             |              |            |

Standard thickness  0.30 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 24 and after.

## Capacitance range chart

C0603 [0201 inch]

| Capacitance |      | X6S         |             |             |              |            | X7R         |             |             |              | X7S         |              |            |
|-------------|------|-------------|-------------|-------------|--------------|------------|-------------|-------------|-------------|--------------|-------------|--------------|------------|
| (pF)        | Code | 1E<br>(25V) | 1C<br>(16V) | 1A<br>(10V) | 0J<br>(6.3V) | 0G<br>(4V) | 1E<br>(25V) | 1C<br>(16V) | 1A<br>(10V) | 0J<br>(6.3V) | 1A<br>(10V) | 0J<br>(6.3V) | 0G<br>(4V) |
| 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  |             | ■           | ■           | ■            |            | ■           | ■           | ■           | ■            |             |              |            |
| 10,000      | 103  |             | ■           | ■           | ■            |            | ■           | ■           | ■           | ■            |             |              |            |
| 22,000      | 223  |             | ■           | ■           | ■            |            | ■           | ■           | ■           | ■            | ■           | ■            |            |
| 47,000      | 473  |             | ■           | ■           | ■            |            | ■           | ■           | ■           | ■            | ■           | ■            | ■          |
| 100,000     | 104  |             | ■           | ■           | ■            |            | ■           | ■           | ■           | ■            | ■           | ■            | ■          |
| 150,000     | 154  |             | ■           | ■           | ■            |            | ■           | ■           | ■           | ■            | ■           | ■            | ■          |
| 220,000     | 224  |             | ■           | ■           | ■            |            | ■           | ■           | ■           | ■            | ■           | ■            | ■          |
| 330,000     | 334  |             | ■           | ■           | ■            |            | ■           | ■           | ■           | ■            | ■           | ■            | ■          |
| 470,000     | 474  |             | ■           | ■           | ■            |            | ■           | ■           | ■           | ■            | ■           | ■            | ■          |

Standard thickness  0.30 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 24 and after.



## Capacitance range chart


C1005 [0402 inch]

| Capacitance |      | COG         |             | CH          |
|-------------|------|-------------|-------------|-------------|
| (pF)        | Code | 1H<br>(50V) | 1E<br>(25V) | 1H<br>(50V) |
| 0.5         | 0R5  |             |             |             |
| 0.75        | R75  |             |             |             |
| 1           | 010  |             |             |             |
| 1.5         | 1R5  |             |             |             |
| 2           | 020  |             |             |             |
| 3           | 030  |             |             |             |
| 4           | 040  |             |             |             |
| 5           | 050  |             |             |             |
| 6           | 060  |             |             |             |
| 7           | 070  |             |             |             |
| 8           | 080  |             |             |             |
| 9           | 090  |             |             |             |
| 10          | 100  |             |             |             |
| 12          | 120  |             |             |             |
| 15          | 150  |             |             |             |
| 18          | 180  |             |             |             |
| 22          | 220  |             |             |             |
| 27          | 270  |             |             |             |
| 33          | 330  |             |             |             |
| 39          | 390  |             |             |             |
| 47          | 470  |             |             |             |
| 56          | 560  |             |             |             |
| 68          | 680  |             |             |             |
| 82          | 820  |             |             |             |
| 100         | 101  |             |             |             |
| 120         | 121  |             |             |             |
| 150         | 151  |             |             |             |
| 180         | 181  |             |             |             |
| 220         | 221  |             |             |             |
| 270         | 271  |             |             |             |
| 330         | 331  |             |             |             |
| 390         | 391  |             |             |             |
| 470         | 471  |             |             |             |
| 560         | 561  |             |             |             |
| 680         | 681  |             |             |             |
| 820         | 821  |             |             |             |
| 1,000       | 102  |             |             |             |

Standard thickness

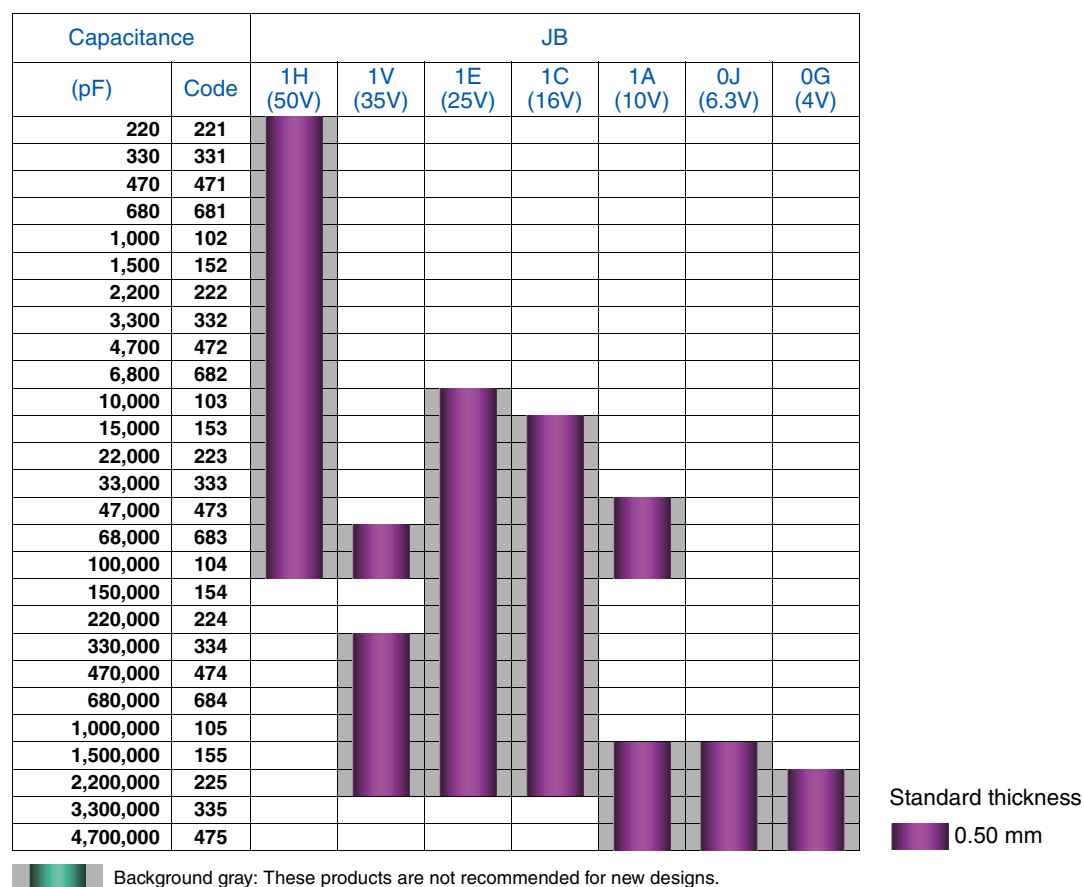
 0.50 mm

 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 24 and after.

## Capacitance range chart

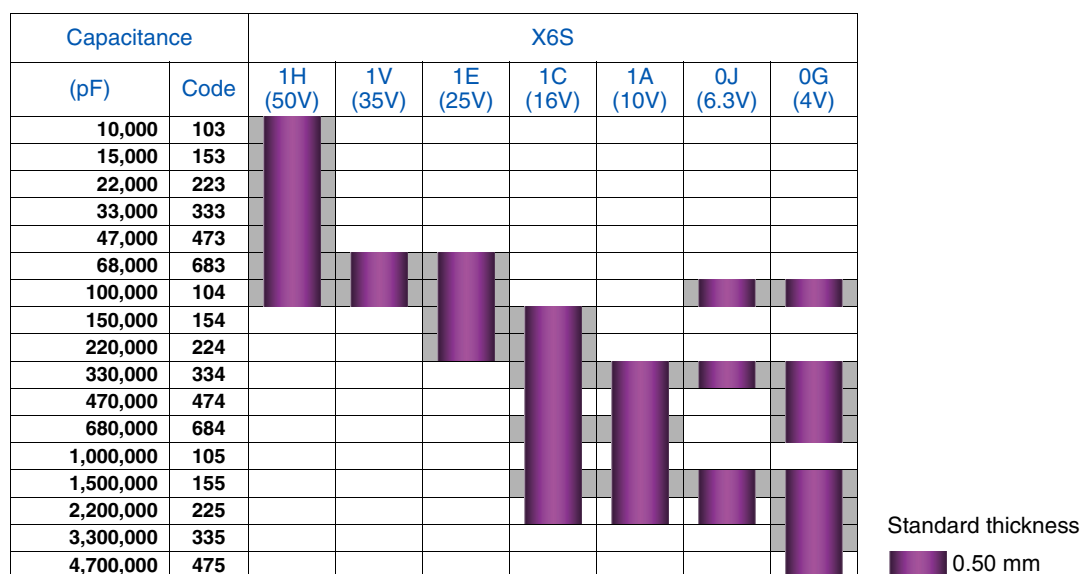
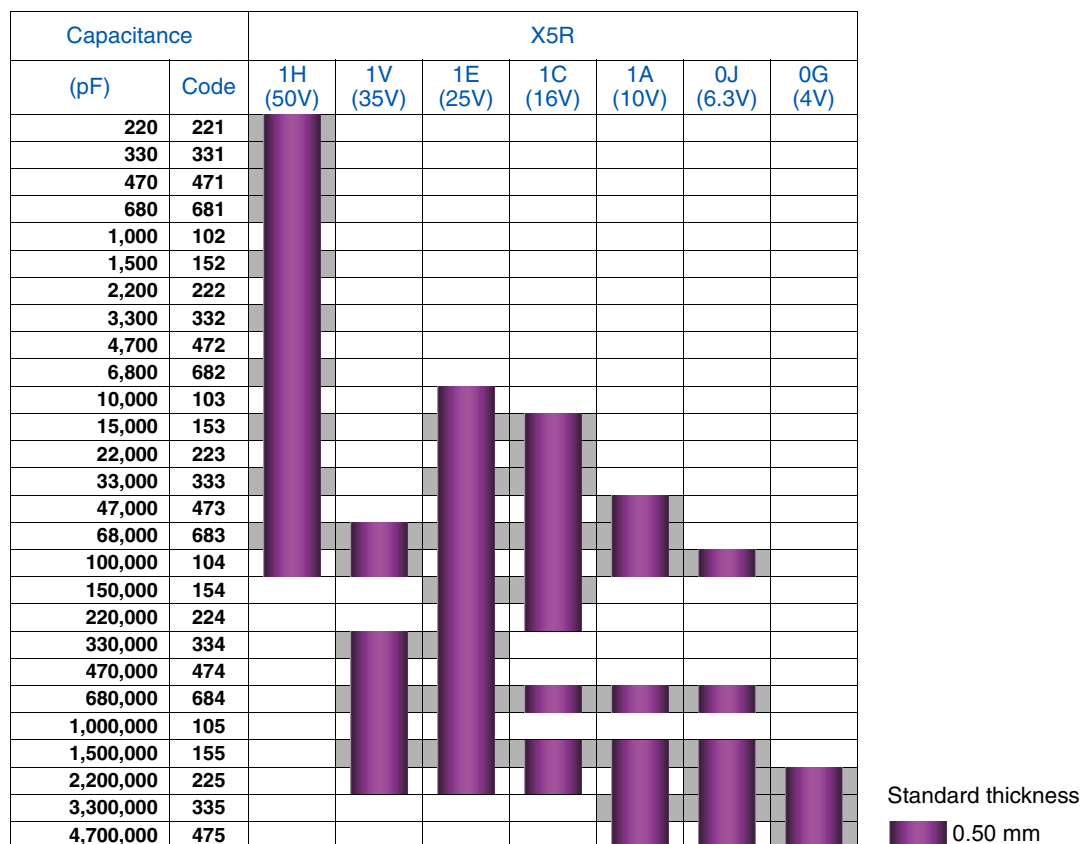
C1005 [0402 inch]



■ For details such as the catalog numbers, please refer to the capacitance range table on page 24 and after.

## Capacitance range chart

C1005 [0402 inch]




■ 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 24 and after.

## Capacitance range chart

C1005 [0402 inch]

| Capacitance |      | X7R         |             |             |             |             | X7S         |             |              |            |
|-------------|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|------------|
| (pF)        | Code | 1H<br>(50V) | 1V<br>(35V) | 1E<br>(25V) | 1C<br>(16V) | 1A<br>(10V) | 1C<br>(16V) | 1A<br>(10V) | 0J<br>(6.3V) | 0G<br>(4V) |
| 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  | █           | █           | █           | █           | █           |             |             |              |            |
| 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  | █           | █           | █           | █           | █           | █           | █           | █            | █          |

Standard thickness  
 0.50 mm

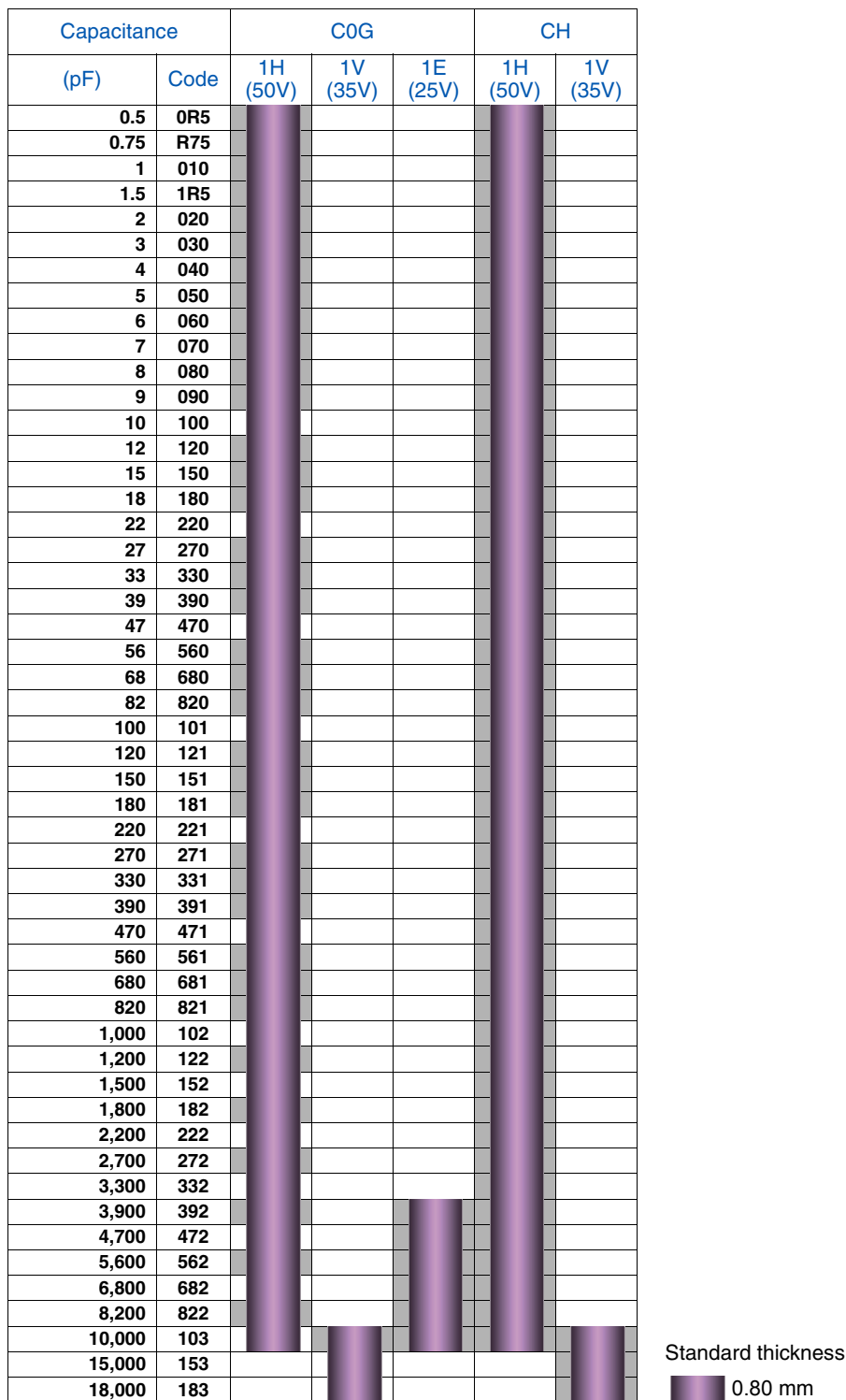
 Background gray: These products are not recommended for new designs.

■ For details such as the catalog numbers, please refer to the capacitance range table on page 24 and after.

MULTILAYER CERAMIC CHIP CAPACITORS TDK

Capacitance range chart

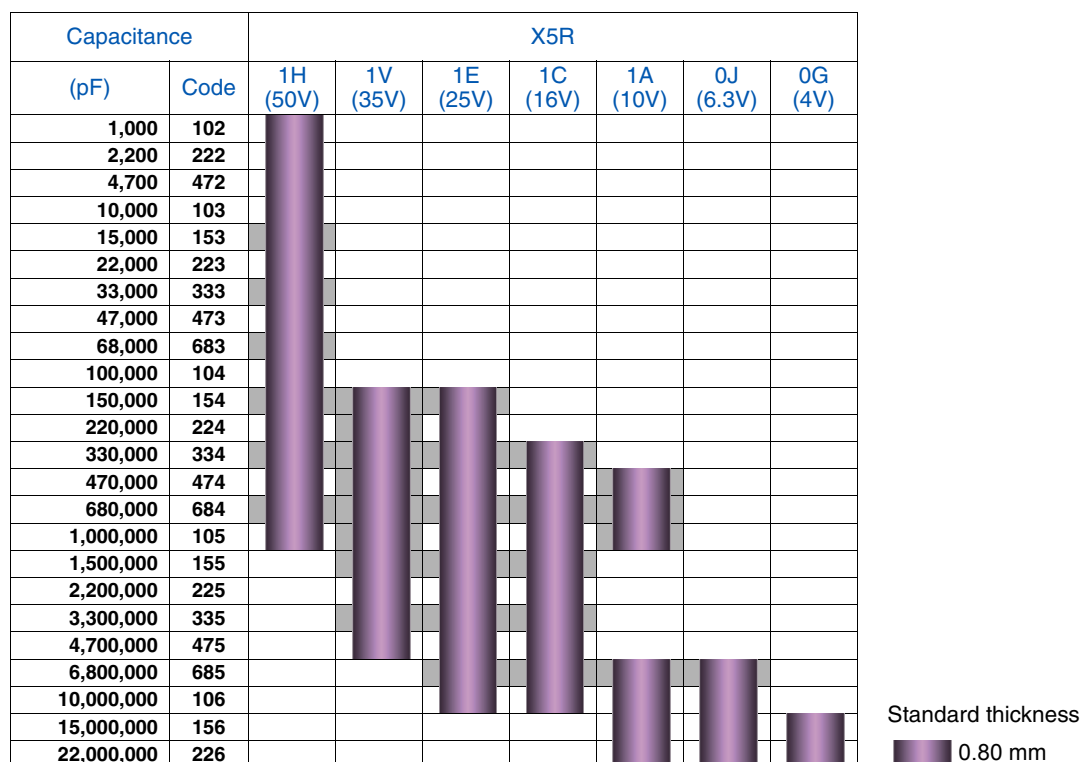
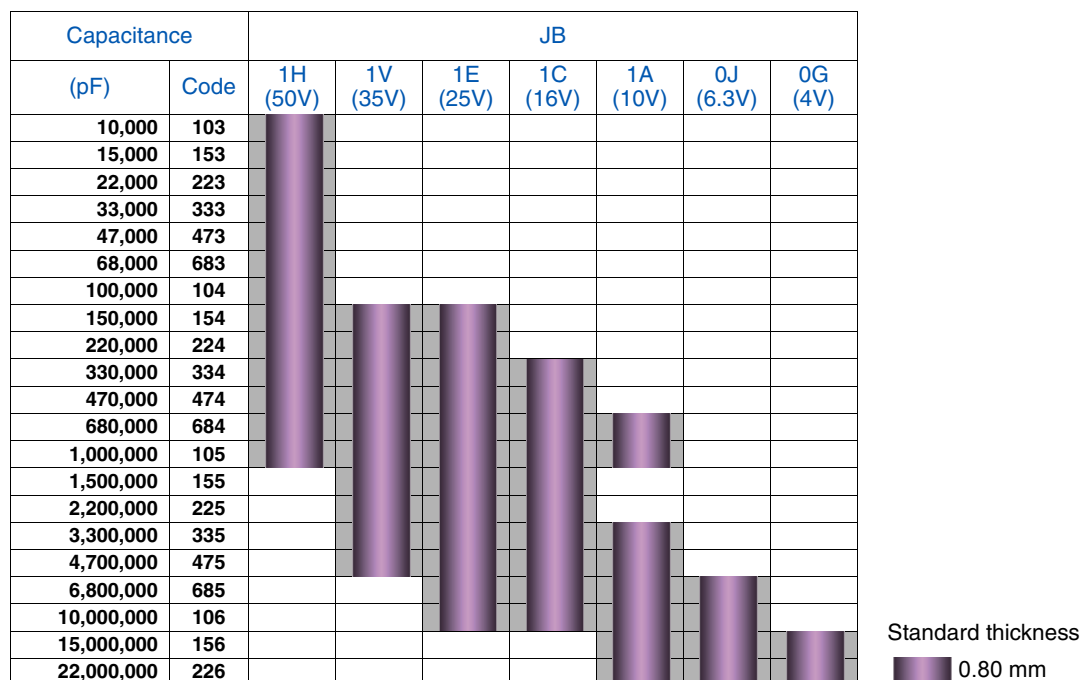
C1608 [0603 inch]



█ 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 24 and after.

## Capacitance range chart

C1608 [0603 inch]

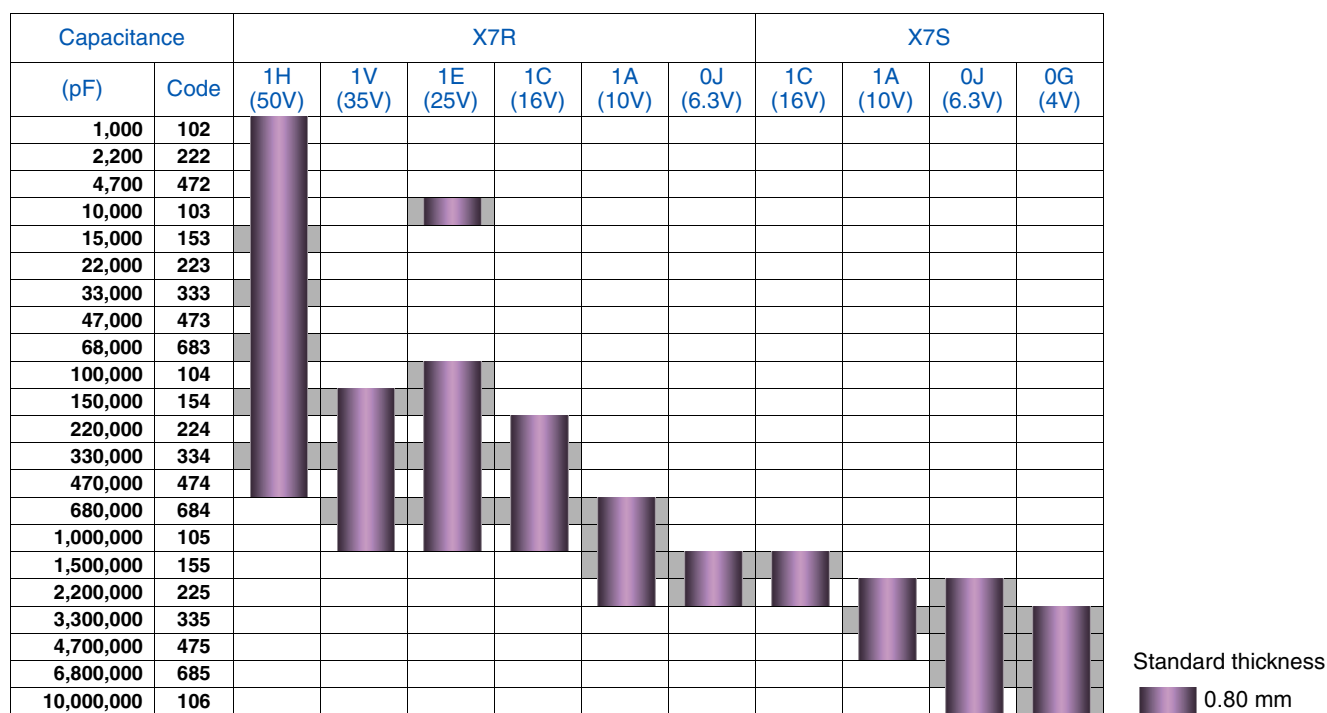
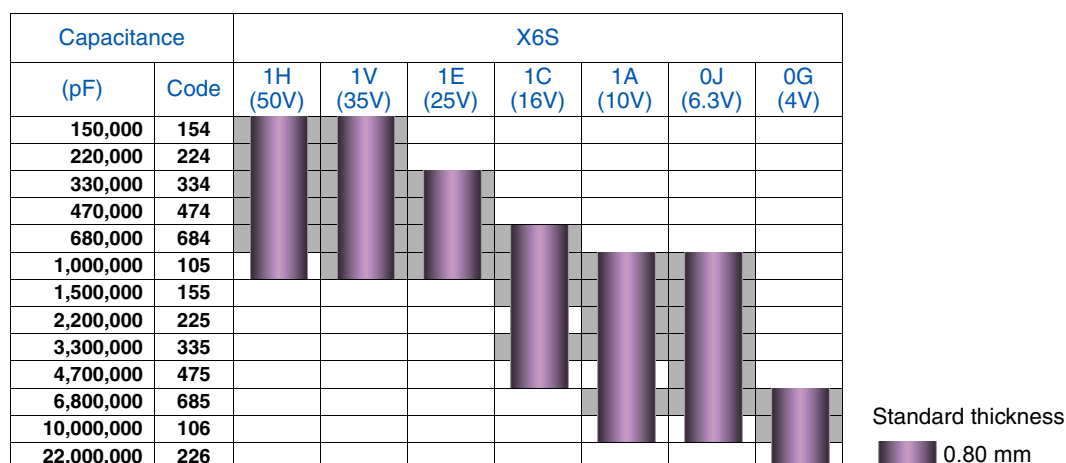


■ Background gray: These products are not recommended for new designs.

■ For details such as the catalog numbers, please refer to the capacitance range table on page 24 and after.

## Capacitance range chart

C1608 [0603 inch]



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 24 and after.

## Capacitance range chart

C2012 [0805 inch]

| Capacitance |      | C0G         |             |             | CH          |             | JB          |             |             |             |             |              |
|-------------|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| (pF)        | Code | 1H<br>(50V) | 1V<br>(35V) | 1E<br>(25V) | 1H<br>(50V) | 1V<br>(35V) | 1H<br>(50V) | 1V<br>(35V) | 1E<br>(25V) | 1C<br>(16V) | 1A<br>(10V) | 0J<br>(6.3V) |
| 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  |             |             |             |             |             |             |             |             |             |             |              |
| 18,000      | 183  |             |             |             |             |             |             |             |             |             |             |              |
| 22,000      | 223  |             |             |             |             |             |             |             |             |             |             |              |
| 27,000      | 273  |             |             |             |             |             |             |             |             |             |             |              |
| 30,000      | 303  |             |             |             |             |             |             |             |             |             |             |              |
| 33,000      | 333  |             |             |             |             |             |             |             |             |             |             |              |
| 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  |             |             |             |             |             |             |             |             |             |             |              |
| 6,800,000   | 685  |             |             |             |             |             |             |             |             |             |             |              |
| 10,000,000  | 106  |             |             |             |             |             |             |             |             |             |             |              |
| 15,000,000  | 156  |             |             |             |             |             |             |             |             |             |             |              |
| 22,000,000  | 226  |             |             |             |             |             |             |             |             |             |             |              |
| 33,000,000  | 336  |             |             |             |             |             |             |             |             |             |             |              |
| 47,000,000  | 476  |             |             |             |             |             |             |             |             |             |             |              |

Standard thickness    0.60 mm    0.85 mm    1.25 mm

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

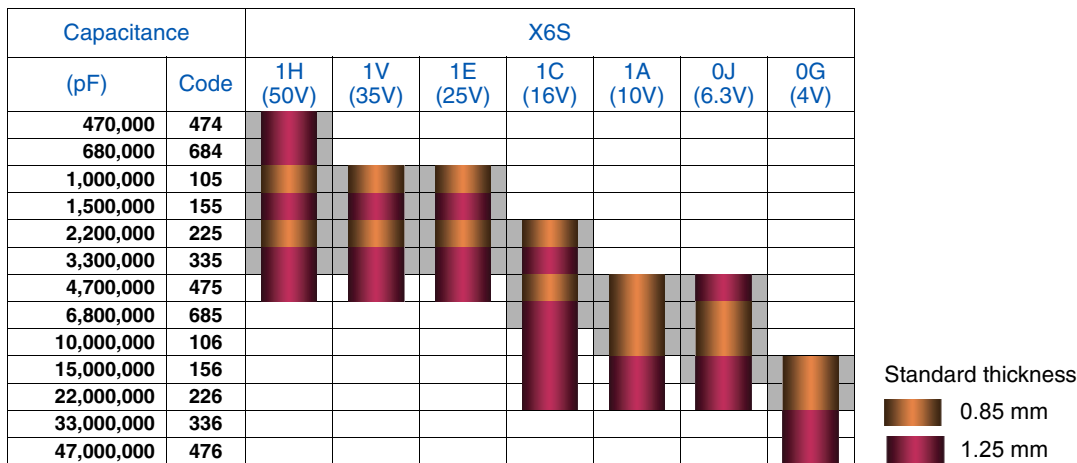
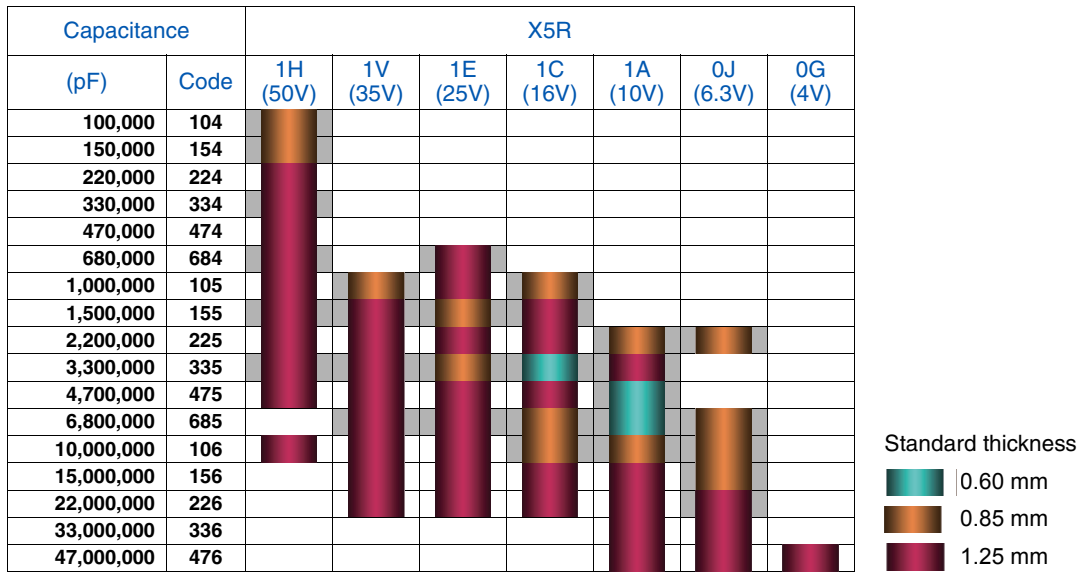
Background red: The product which is planning to stop production.

For details such as the catalog numbers, please refer to the capacitance range table on page 24 and after.



## Capacitance range chart

C2012 [0805 inch]

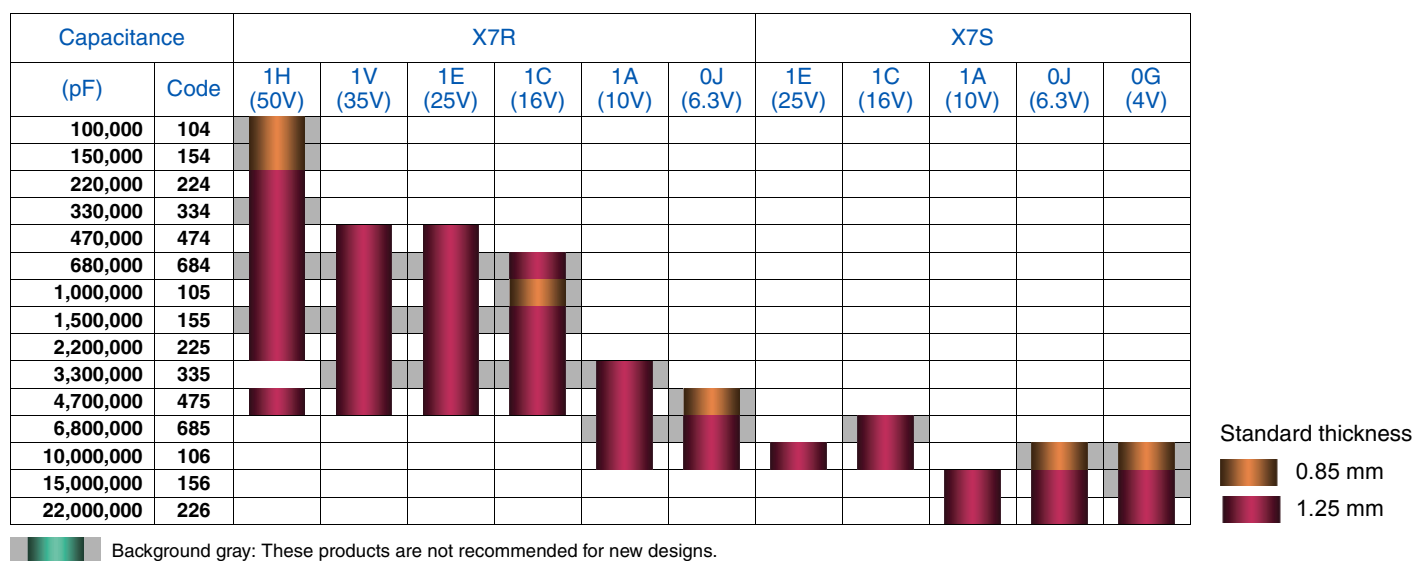


■ Background gray: These products are not recommended for new designs.

■ For details such as the catalog numbers, please refer to the capacitance range table on page 24 and after.

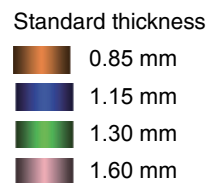
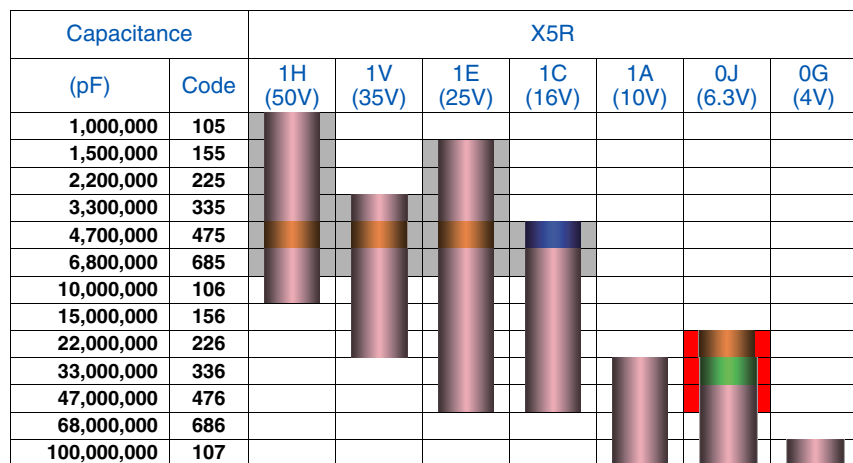
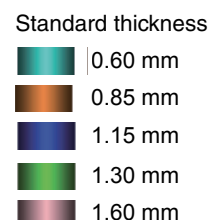
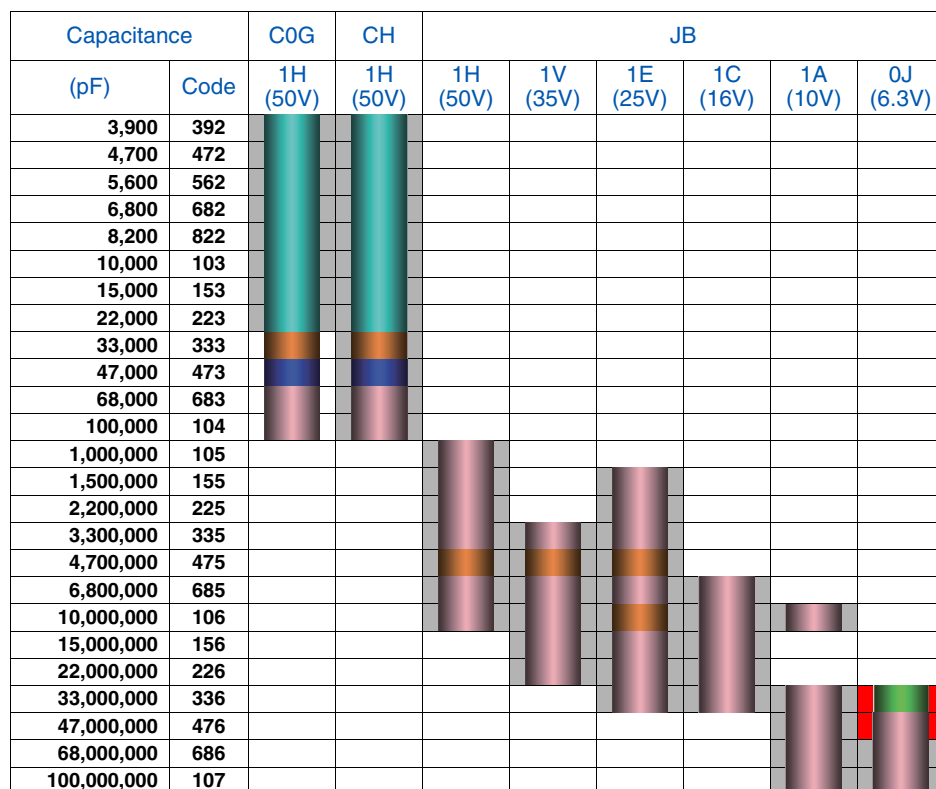
## Capacitance range chart

C2012 [0805 inch]



Capacitance range chart

C3216 [1206 inch]



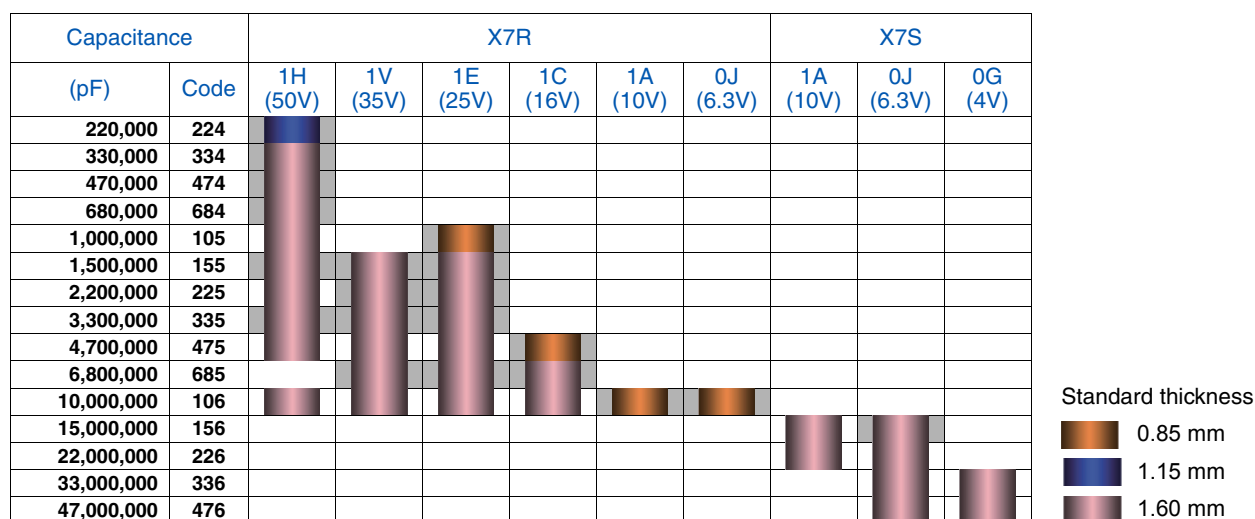
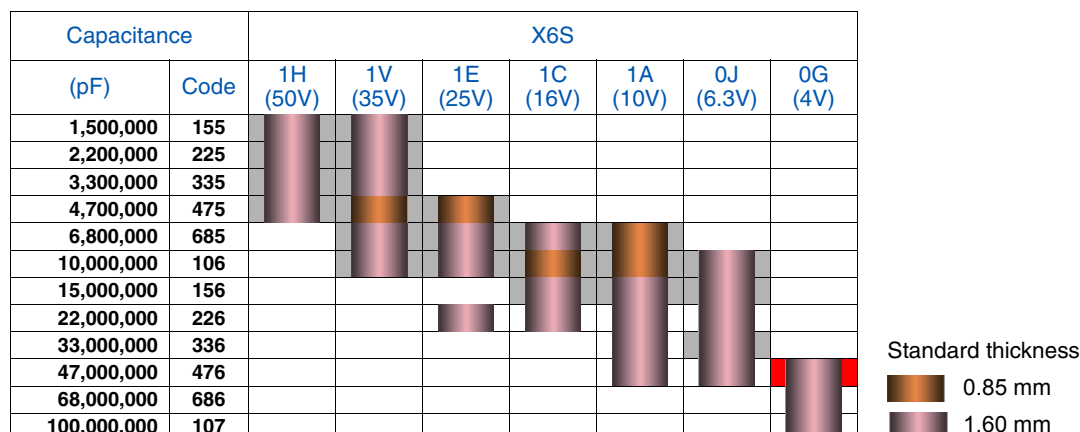
█ Background gray: These products are not recommended for new designs.

█ Background red: The products which are planning to stop production.

█ For details such as the catalog numbers, please refer to the capacitance range table on page 24 and after.

## Capacitance range chart

C3216 [1206 inch]



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

Background red: The product which is planning to stop production.

For details such as the catalog numbers, please refer to the capacitance range table on page 24 and after.

MULTILAYER CERAMIC CHIP CAPACITORS TDK

Capacitance range chart

C3225 [1210 inch]

| Capacitance |      | C0G      | CH       | JB       |          |          |          |           | X5R      |          |          |          |           |
|-------------|------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|----------|----------|-----------|
| (pF)        | Code | 1H (50V) | 1H (50V) | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) |
| 22,000      | 223  | █        | █        |          |          |          |          |           |          |          |          |          |           |
| 33,000      | 333  | █        | █        |          |          |          |          |           |          |          |          |          |           |
| 47,000      | 473  | █        | █        |          |          |          |          |           |          |          |          |          |           |
| 68,000      | 683  | █        | █        |          |          |          |          |           |          |          |          |          |           |
| 100,000     | 104  | █        | █        |          |          |          |          |           |          |          |          |          |           |
| 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  |          |          |          |          | █        |          |           |          |          | █        |          |           |
| 33,000,000  | 336  |          |          |          |          |          |          |           |          |          | █        | █        |           |
| 47,000,000  | 476  |          |          |          |          |          |          |           |          |          | █        | █        |           |
| 68,000,000  | 686  |          |          |          |          |          |          | █         | █        |          |          | █        |           |
| 100,000,000 | 107  |          |          |          |          |          |          | █         | █        |          |          | █        |           |

Standard thickness █ 1.25 mm █ 1.60 mm █ 2.00 mm █ 2.30 mm █ 2.50 mm

| Capacitance |      | X6S      |          |          |          |          |           |         | X7R      |          |          |          |          |
|-------------|------|----------|----------|----------|----------|----------|-----------|---------|----------|----------|----------|----------|----------|
| (pF)        | Code | 1H (50V) | 1V (35V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) | 0G (4V) | 1N (75V) | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) |
| 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  |          |          |          |          |          | █         | █       |          |          | █        | █        | █        |
| 100,000,000 | 107  |          |          |          |          | █        | █         | █       |          |          |          |          |          |

Standard thickness █ 1.60 mm █ 2.00 mm █ 2.30 mm █ 2.50 mm

| Capacitance |      | X7S      |          |           | X7T      |           |
|-------------|------|----------|----------|-----------|----------|-----------|
| (pF)        | Code | 1H (50V) | 1A (10V) | 0J (6.3V) | 1A (10V) | 0J (6.3V) |
| 6,800,000   | 685  | █        |          |           |          |           |
| 10,000,000  | 106  | █        |          |           |          |           |
| 47,000,000  | 476  |          | █        | █         |          |           |
| 100,000,000 | 107  |          |          |           | █        | █         |

Standard thickness █ 2.50 mm

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

█ Background red: The products which are planning to stop production.

█ For details such as the catalog numbers, please refer to the capacitance range table on page 24 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.

MULTILAYER CERAMIC CHIP CAPACITORS TDK

Capacitance range chart

C4532 [1812 inch]

| Capacitance |      | C0G      | CH       | JB       |          |          |
|-------------|------|----------|----------|----------|----------|----------|
| (pF)        | Code | 1H (50V) | 1H (50V) | 1H (50V) | 1E (25V) | 1C (16V) |
| 47,000      | 473  |          |          |          |          |          |
| 68,000      | 683  |          |          |          |          |          |
| 100,000     | 104  |          |          |          |          |          |
| 150,000     | 154  |          |          |          |          |          |
| 220,000     | 224  |          |          |          |          |          |
| 6,800,000   | 685  |          |          |          |          |          |
| 10,000,000  | 106  |          |          |          |          |          |
| 15,000,000  | 156  |          |          |          |          |          |
| 22,000,000  | 226  |          |          |          |          |          |
| 33,000,000  | 336  |          |          |          |          |          |

Standard thickness

- 1.60 mm
- 2.00 mm
- 2.50 mm
- 3.20 mm

| Capacitance |      | X5R      |          |          |          |           | X6S       | X7R      |          |          |
|-------------|------|----------|----------|----------|----------|-----------|-----------|----------|----------|----------|
| (pF)        | Code | 1H (50V) | 1E (25V) | 1C (16V) | 1A (10V) | 0J (6.3V) | 0J (6.3V) | 1H (50V) | 1E (25V) | 1C (16V) |
| 1,000,000   | 105  |          |          |          |          |           |           |          |          |          |
| 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  |          |          |          |          |           |           |          |          |          |
| 33,000,000  | 336  |          |          |          |          |           |           |          |          |          |
| 47,000,000  | 476  |          |          |          |          |           |           |          |          |          |
| 68,000,000  | 686  |          |          |          |          |           |           |          |          |          |
| 100,000,000 | 107  |          |          |          |          |           |           |          |          |          |

Standard thickness

- 1.60 mm
- 2.00 mm
- 2.30 mm
- 2.50 mm
- 2.80 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 24 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

C5750 [2220 inch]

| Capacitance |      | JB  | X5R   |   |   |   |   | X7R   |  |   |   |
|-------------|------|---|---|---|---|---|---|---|--|---|---|
| (pF)        | Code | 1E<br>(25V)   | 1H<br>(50V)   | 1E<br>(25V)   | 1C<br>(16V)   | 1A<br>(10V)   | 0J<br>(6.3V)  | 1H<br>(50V)   | 1V<br>(35V)  | 1E<br>(25V)   | 1C<br>(16V)   |
| 4,700,000   | 475  |   |   |   |   |   |   |  |  |   |   |
| 6,800,000   | 685  |   |   |   |   |   |   |  |  |   |   |
| 10,000,000  | 106  |   |  |   |   |   |   |  |  |  |   |
| 15,000,000  | 156  |   |   |   |   |   |   |   |  |  |   |
| 22,000,000  | 226  |  |   |  |   |   |   |  |  |  |  |
| 33,000,000  | 336  |   |   |   |  |   |   |   |  |   |  |
| 47,000,000  | 476  |   |   |   |  |   |   |   |  |  |  |
| 68,000,000  | 686  |   |   |   |   |  |   |   |  |   |  |
| 100,000,000 | 107  |   |   |   |   |  |  |   |  |   |   |

Standard thickness

 2.00 mm 2.30 mm 2.50 mm 2.80 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 24 and after.

## MULTILAYER CERAMIC CHIP CAPACITORS


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

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number         |                        |                        |
|-------------|------------|----------------|-----------------------|------------------------|------------------------|------------------------|
|             |            |                |                       | Rated voltage Edc: 50V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 0.5 pF      | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402C0G1C0R5C020BC    |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603C0G1H0R5C030BA    | C0603C0G1E0R5C030BA    |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005C0G1H0R5B050BA    |                        |                        |
|             |            |                | ±0.25pF               | C1005C0G1H0R5C050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608C0G1H0R5C080AA   |                        |                        |                        |
| 0.75 pF     | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402C0G1CR75C020BC    |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603C0G1HR75C030BA    | C0603C0G1ER75C030BA    |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005C0G1HR75B050BA    |                        |                        |
|             |            |                | ±0.25pF               | C1005C0G1HR75C050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608C0G1HR75C080AA   |                        |                        |                        |
| 1 pF        | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402C0G1C010C020BC    |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603C0G1H010C030BA    | C0603C0G1E010C030BA    |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005C0G1H010B050BA    |                        |                        |
|             |            |                | ±0.25pF               | C1005C0G1H010C050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608C0G1H010C080AA   |                        |                        |                        |
| 1.5 pF      | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402C0G1C1R5C020BC    |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603C0G1H1R5C030BA    | C0603C0G1E1R5C030BA    |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005C0G1H1R5B050BA    |                        |                        |
|             |            |                | ±0.25pF               | C1005C0G1H1R5C050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608C0G1H1R5C080AA   |                        |                        |                        |
| 2 pF        | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402C0G1C020C020BC    |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603C0G1H020C030BA    | C0603C0G1E020C030BA    |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005C0G1H020B050BA    |                        |                        |
|             |            |                | ±0.25pF               | C1005C0G1H020C050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608C0G1H020C080AA   |                        |                        |                        |
| 2.2 pF      | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402C0G1C2R2C020BC    |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603C0G1H2R2C030BA    | C0603C0G1E2R2C030BA    |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005C0G1H030C030BA    |                        |                        |
|             |            |                | ±0.25pF               | C1005C0G1H030C050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608C0G1H030C080AA   |                        |                        |                        |
| 3 pF        | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402C0G1C030C020BC    |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603C0G1H030C030BA    | C0603C0G1E030C030BA    |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005C0G1H030B050BA    |                        |                        |
|             |            |                | ±0.25pF               | C1005C0G1H030C050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608C0G1H030C080AA   |                        |                        |                        |
| 3.3 pF      | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402C0G1C3R3C020BC    |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603C0G1H3R3C030BA    | C0603C0G1E3R3C030BA    |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005C0G1H040B050BA    |                        |                        |
|             |            |                | ±0.25pF               | C1005C0G1H040C050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608C0G1H040C080AA   |                        |                        |                        |
| 4 pF        | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402C0G1C040C020BC    |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603C0G1H040C030BA    | C0603C0G1E040C030BA    |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005C0G1H040B050BA    |                        |                        |
|             |            |                | ±0.25pF               | C1005C0G1H040C050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608C0G1H040C080AA   |                        |                        |                        |
| 4.7 pF      | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402C0G1C4R7C020BC    |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603C0G1H4R7C030BA    | C0603C0G1E4R7C030BA    |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005C0G1H050C030BA    |                        |                        |
|             |            |                | ±0.25pF               | C1005C0G1H050C050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608C0G1H050C080AA   |                        |                        |                        |
| 5 pF        | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402C0G1C050C020BC    |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603C0G1H050C030BA    | C0603C0G1E050C030BA    |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005C0G1H050B050BA    |                        |                        |
|             |            |                | ±0.25pF               | C1005C0G1H050C050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608C0G1H050C080AA   |                        |                        |                        |
| 6 pF        | 0402       | 0.20±0.02      | ±0.50pF               |                        |                        | C0402C0G1C060D020BC    |
|             | 0603       | 0.30±0.03      | ±0.50pF               | C0603C0G1H060D030BA    | C0603C0G1E060D030BA    |                        |
|             | 1005       | 0.50±0.05      | ±0.25pF               | C1005C0G1H060C050BA    |                        |                        |
|             |            |                | ±0.50pF               | C1005C0G1H060D050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608C0G1H060C080AA   |                        |                        |                        |
| 6.8 pF      | 0402       | 0.20±0.02      | ±0.50pF               |                        |                        | C0402C0G1C6R8D020BC    |
|             | 0603       | 0.30±0.03      | ±0.50pF               | C0603C0G1H6R8D030BA    | C0603C0G1E6R8D030BA    |                        |
|             | 1005       | 0.50±0.05      | ±0.25pF               | C1005C0G1H070D030BA    |                        |                        |
|             |            |                | ±0.50pF               | C1005C0G1H070D050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608C0G1H070D080AA   |                        |                        |                        |
| 7 pF        | 0402       | 0.20±0.02      | ±0.50pF               |                        |                        | C0402C0G1C070D020BC    |
|             | 0603       | 0.30±0.03      | ±0.50pF               | C0603C0G1H070D030BA    | C0603C0G1E070D030BA    |                        |
|             | 1005       | 0.50±0.05      | ±0.25pF               | C1005C0G1H070C050BA    |                        |                        |
|             |            |                | ±0.50pF               | C1005C0G1H070D050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608C0G1H070C080AA   |                        |                        |                        |
|             |            |                | ±0.50pF               | C1608C0G1H070D080AA    |                        |                        |

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



## MULTILAYER CERAMIC CHIP CAPACITORS


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

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number         |                        |                        |
|-------------|------------|----------------|-----------------------|------------------------|------------------------|------------------------|
|             |            |                |                       | Rated voltage Edc: 50V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 8 pF        | 0402       | 0.20±0.02      | ±0.50pF               |                        |                        | C0402C0G1C080D020BC    |
|             | 0603       | 0.30±0.03      | ±0.50pF               | C0603C0G1H080D030BA    | C0603C0G1E080D030BA    |                        |
|             | 1005       | 0.50±0.05      | ±0.25pF               | C1005C0G1H080C050BA    |                        |                        |
|             |            |                | ±0.50pF               | C1005C0G1H080D050BA    |                        |                        |
|             |            |                | ±0.25pF               | C1608C0G1H080C080AA    |                        |                        |
| 1608        | 0.80±0.10  | ±0.50pF        | C1608C0G1H080D080AA   |                        |                        |                        |
| 9 pF        | 0402       | 0.20±0.02      | ±0.50pF               |                        |                        | C0402C0G1C090D020BC    |
|             | 0603       | 0.30±0.03      | ±0.50pF               | C0603C0G1H090D030BA    | C0603C0G1E090D030BA    |                        |
|             | 1005       | 0.50±0.05      | ±0.25pF               | C1005C0G1H090C050BA    |                        |                        |
|             |            |                | ±0.50pF               | C1005C0G1H090D050BA    |                        |                        |
|             |            |                | ±0.25pF               | C1608C0G1H090C080AA    |                        |                        |
| 1608        | 0.80±0.10  | ±0.50pF        | C1608C0G1H090D080AA   |                        |                        |                        |
| 10 pF       | 0402       | 0.20±0.02      | ±0.50pF               |                        |                        | C0402C0G1C100D020BC    |
|             | 0603       | 0.30±0.03      | ±0.50pF               | C0603C0G1H100D030BA    | C0603C0G1E100D030BA    |                        |
|             | 1005       | 0.50±0.05      | ±0.25pF               | C1005C0G1H100C050BA    |                        |                        |
|             |            |                | ±0.50pF               | C1005C0G1H100D050BA    |                        |                        |
|             |            |                | ±0.25pF               | C1608C0G1H100C080AA    |                        |                        |
| 1608        | 0.80±0.10  | ±0.50pF        | C1608C0G1H100D080AA   |                        |                        |                        |
| 12 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402C0G1C120K020BC    |
|             | 0603       | 0.30±0.03      | ±5%                   |                        |                        | C0402C0G1C120J020BC    |
|             |            |                | ±10%                  | C0603C0G1H120K030BA    | C0603C0G1E120K030BA    |                        |
|             |            |                | ±5%                   | C0603C0G1H120J030BA    | C0603C0G1E120J030BA    |                        |
|             | 1005       | 0.50±0.05      | ±5%                   | C1005C0G1H120J050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±5%            | C1608C0G1H120J080AA   |                        |                        |                        |
| 15 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402C0G1C150K020BC    |
|             | 0603       | 0.30±0.03      | ±5%                   |                        |                        | C0402C0G1C150J020BC    |
|             |            |                | ±10%                  | C0603C0G1H150K030BA    | C0603C0G1E150K030BA    |                        |
|             |            |                | ±5%                   | C0603C0G1H150J030BA    | C0603C0G1E150J030BA    |                        |
|             | 1005       | 0.50±0.05      | ±1%                   | C1005C0G1H150F050BA    |                        |                        |
| ±2%         |            |                | C1005C0G1H150G050BA   |                        |                        |                        |
| ±5%         |            |                | C1005C0G1H150J050BA   |                        |                        |                        |
| 1608        | 0.80±0.10  | ±1%            | C1608C0G1H150F080AA   |                        |                        |                        |
|             |            |                | ±2%                   | C1608C0G1H150G080AA    |                        |                        |
|             |            |                | ±5%                   | C1608C0G1H150J080AA    |                        |                        |
| 18 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402C0G1C180K020BC    |
|             | 0603       | 0.30±0.03      | ±5%                   |                        |                        | C0402C0G1C180J020BC    |
|             |            |                | ±10%                  | C0603C0G1H180K030BA    | C0603C0G1E180K030BA    |                        |
|             |            |                | ±5%                   | C0603C0G1H180J030BA    | C0603C0G1E180J030BA    |                        |
|             | 1005       | 0.50±0.05      | ±5%                   | C1005C0G1H180J050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±5%            | C1608C0G1H180J080AA   |                        |                        |                        |
| 22 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402C0G1C220K020BC    |
|             | 0603       | 0.30±0.03      | ±5%                   |                        |                        | C0402C0G1C220J020BC    |
|             |            |                | ±10%                  | C0603C0G1H220K030BA    | C0603C0G1E220K030BA    |                        |
|             |            |                | ±5%                   | C0603C0G1H220J030BA    | C0603C0G1E220J030BA    |                        |
|             | 1005       | 0.50±0.05      | ±1%                   | C1005C0G1H220F050BA    |                        |                        |
| ±2%         |            |                | C1005C0G1H220G050BA   |                        |                        |                        |
| ±5%         |            |                | C1005C0G1H220J050BA   |                        |                        |                        |
| 1608        | 0.80±0.10  | ±1%            | C1608C0G1H220F080AA   |                        |                        |                        |
|             |            |                | ±2%                   | C1608C0G1H220G080AA    |                        |                        |
|             |            |                | ±5%                   | C1608C0G1H220J080AA    |                        |                        |
| 27 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402C0G1C270K020BC    |
|             | 0603       | 0.30±0.03      | ±5%                   |                        |                        | C0402C0G1C270J020BC    |
|             |            |                | ±10%                  | C0603C0G1H270K030BA    | C0603C0G1E270K030BA    |                        |
|             |            |                | ±5%                   | C0603C0G1H270J030BA    | C0603C0G1E270J030BA    |                        |
|             | 1005       | 0.50±0.05      | ±5%                   | C1005C0G1H270J050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±5%            | C1608C0G1H270J080AA   |                        |                        |                        |

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

## MULTILAYER CERAMIC CHIP CAPACITORS


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

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number         |                        |                        |
|-------------|------------|----------------|-----------------------|------------------------|------------------------|------------------------|
|             |            |                |                       | Rated voltage Edc: 50V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 33 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402C0G1C330K020BC    |
|             |            |                | ±5%                   |                        |                        | C0402C0G1C330J020BC    |
|             | 0603       | 0.30±0.03      | ±10%                  | C0603C0G1H330K030BA    | C0603C0G1E330K030BA    |                        |
|             |            |                | ±5%                   | C0603C0G1H330J030BA    | C0603C0G1E330J030BA    |                        |
|             | 1005       | 0.50±0.05      | ±1%                   | C1005C0G1H330F050BA    |                        |                        |
|             |            |                | ±2%                   | C1005C0G1H330G050BA    |                        |                        |
|             |            |                | ±5%                   | C1005C0G1H330J050BA    |                        |                        |
|             |            |                | ±1%                   | C1608C0G1H330F080AA    |                        |                        |
|             | 1608       | 0.80±0.10      | ±2%                   | C1608C0G1H330G080AA    |                        |                        |
|             |            |                | ±5%                   | C1608C0G1H330J080AA    |                        |                        |
| 39 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402C0G1C390K020BC    |
|             |            |                | ±5%                   |                        |                        | C0402C0G1C390J020BC    |
|             | 0603       | 0.30±0.03      | ±10%                  | C0603C0G1H390K030BA    | C0603C0G1E390K030BA    |                        |
|             |            |                | ±5%                   | C0603C0G1H390J030BA    | C0603C0G1E390J030BA    |                        |
|             | 1005       | 0.50±0.05      | ±5%                   | C1005C0G1H390J050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±5%            | C1608C0G1H390J080AA   |                        |                        |                        |
| 47 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402C0G1C470K020BC    |
|             |            |                | ±5%                   |                        |                        | C0402C0G1C470J020BC    |
|             | 0603       | 0.30±0.03      | ±10%                  | C0603C0G1H470K030BA    | C0603C0G1E470K030BA    |                        |
|             |            |                | ±5%                   | C0603C0G1H470J030BA    | C0603C0G1E470J030BA    |                        |
|             | 1005       | 0.50±0.05      | ±1%                   | C1005C0G1H470F050BA    |                        |                        |
|             |            |                | ±2%                   | C1005C0G1H470G050BA    |                        |                        |
|             |            |                | ±5%                   | C1005C0G1H470J050BA    |                        |                        |
|             |            |                | ±1%                   | C1608C0G1H470F080AA    |                        |                        |
|             | 1608       | 0.80±0.10      | ±2%                   | C1608C0G1H470G080AA    |                        |                        |
|             |            |                | ±5%                   | C1608C0G1H470J080AA    |                        |                        |
| 56 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402C0G1C560K020BC    |
|             |            |                | ±5%                   |                        |                        | C0402C0G1C560J020BC    |
|             | 0603       | 0.30±0.03      | ±10%                  | C0603C0G1H560K030BA    | C0603C0G1E560K030BA    |                        |
|             |            |                | ±5%                   | C0603C0G1H560J030BA    | C0603C0G1E560J030BA    |                        |
|             | 1005       | 0.50±0.05      | ±5%                   | C1005C0G1H560J050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±5%            | C1608C0G1H560J080AA   |                        |                        |                        |
| 68 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402C0G1C680K020BC    |
|             |            |                | ±5%                   |                        |                        | C0402C0G1C680J020BC    |
|             | 0603       | 0.30±0.03      | ±10%                  | C0603C0G1H680K030BA    | C0603C0G1E680K030BA    |                        |
|             |            |                | ±5%                   | C0603C0G1H680J030BA    | C0603C0G1E680J030BA    |                        |
|             | 1005       | 0.50±0.05      | ±1%                   | C1005C0G1H680F050BA    |                        |                        |
|             |            |                | ±2%                   | C1005C0G1H680G050BA    |                        |                        |
|             |            |                | ±5%                   | C1005C0G1H680J050BA    |                        |                        |
|             |            |                | ±1%                   | C1608C0G1H680F080AA    |                        |                        |
|             | 1608       | 0.80±0.10      | ±2%                   | C1608C0G1H680G080AA    |                        |                        |
|             |            |                | ±5%                   | C1608C0G1H680J080AA    |                        |                        |
| 82 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402C0G1C820K020BC    |
|             |            |                | ±5%                   |                        |                        | C0402C0G1C820J020BC    |
|             | 0603       | 0.30±0.03      | ±10%                  | C0603C0G1H820K030BA    | C0603C0G1E820K030BA    |                        |
|             |            |                | ±5%                   | C0603C0G1H820J030BA    | C0603C0G1E820J030BA    |                        |
|             | 1005       | 0.50±0.05      | ±5%                   | C1005C0G1H820J050BA    |                        |                        |
| 1608        | 0.80±0.10  | ±5%            | C1608C0G1H820J080AA   |                        |                        |                        |
| 100 pF      | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402C0G1C101K020BC    |
|             |            |                | ±5%                   |                        |                        | C0402C0G1C101J020BC    |
|             | 0603       | 0.30±0.03      | ±10%                  | C0603C0G1H101K030BA    | C0603C0G1E101K030BA    |                        |
|             |            |                | ±5%                   | C0603C0G1H101J030BA    | C0603C0G1E101J030BA    |                        |
|             | 1005       | 0.50±0.05      | ±1%                   | C1005C0G1H101F050BA    |                        |                        |
|             |            |                | ±10%                  | C1005C0G1H101K050BA    |                        |                        |
|             |            |                | ±2%                   | C1005C0G1H101G050BA    |                        |                        |
|             |            |                | ±5%                   | C1005C0G1H101J050BA    |                        |                        |
|             | 1608       | 0.80±0.10      | ±1%                   | C1608C0G1H101F080AA    |                        |                        |
|             |            |                | ±10%                  | C1608C0G1H101K080AA    |                        |                        |
|             |            |                | ±2%                   | C1608C0G1H101G080AA    |                        |                        |
|             |            |                | ±5%                   | C1608C0G1H101J080AA    |                        |                        |

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

## MULTILAYER CERAMIC CHIP CAPACITORS


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

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number      |          |
|-------------|------------|----------------|-----------------------|---------------------|----------|
|             |            |                |                       | Rated voltage       | Edc: 50V |
| 120 pF      | 1005       | 0.50±0.05      | ±10%                  | C1005C0G1H121K050BA |          |
|             |            |                | ±5%                   | C1005C0G1H121J050BA |          |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608C0G1H121K080AA |          |
|             |            |                | ±5%                   | C1608C0G1H121J080AA |          |
| 150 pF      | 1005       | 0.50±0.05      | ±1%                   | C1005C0G1H151F050BA |          |
|             |            |                | ±10%                  | C1005C0G1H151K050BA |          |
|             |            |                | ±2%                   | C1005C0G1H151G050BA |          |
|             |            |                | ±5%                   | C1005C0G1H151J050BA |          |
|             | 1608       | 0.80±0.10      | ±1%                   | C1608C0G1H151F080AA |          |
|             |            |                | ±10%                  | C1608C0G1H151K080AA |          |
|             |            |                | ±2%                   | C1608C0G1H151G080AA |          |
|             |            |                | ±5%                   | C1608C0G1H151J080AA |          |
| 180 pF      | 1005       | 0.50±0.05      | ±10%                  | C1005C0G1H181K050BA |          |
|             |            |                | ±5%                   | C1005C0G1H181J050BA |          |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608C0G1H181K080AA |          |
|             |            |                | ±5%                   | C1608C0G1H181J080AA |          |
| 220 pF      | 1005       | 0.50±0.05      | ±1%                   | C1005C0G1H221F050BA |          |
|             |            |                | ±10%                  | C1005C0G1H221K050BA |          |
|             |            |                | ±2%                   | C1005C0G1H221G050BA |          |
|             |            |                | ±5%                   | C1005C0G1H221J050BA |          |
|             | 1608       | 0.80±0.10      | ±1%                   | C1608C0G1H221F080AA |          |
|             |            |                | ±10%                  | C1608C0G1H221K080AA |          |
|             |            |                | ±2%                   | C1608C0G1H221G080AA |          |
|             |            |                | ±5%                   | C1608C0G1H221J080AA |          |
| 270 pF      | 1005       | 0.50±0.05      | ±10%                  | C1005C0G1H271K050BA |          |
|             |            |                | ±5%                   | C1005C0G1H271J050BA |          |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608C0G1H271K080AA |          |
|             |            |                | ±5%                   | C1608C0G1H271J080AA |          |
| 330 pF      | 1005       | 0.50±0.05      | ±1%                   | C1005C0G1H331F050BA |          |
|             |            |                | ±10%                  | C1005C0G1H331K050BA |          |
|             |            |                | ±2%                   | C1005C0G1H331G050BA |          |
|             |            |                | ±5%                   | C1005C0G1H331J050BA |          |
|             | 1608       | 0.80±0.10      | ±1%                   | C1608C0G1H331F080AA |          |
|             |            |                | ±10%                  | C1608C0G1H331K080AA |          |
|             |            |                | ±2%                   | C1608C0G1H331G080AA |          |
|             |            |                | ±5%                   | C1608C0G1H331J080AA |          |
| 390 pF      | 1005       | 0.50±0.05      | ±10%                  | C1005C0G1H391K050BA |          |
|             |            |                | ±5%                   | C1005C0G1H391J050BA |          |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608C0G1H391K080AA |          |
|             |            |                | ±5%                   | C1608C0G1H391J080AA |          |
| 470 pF      | 1005       | 0.50±0.05      | ±1%                   | C1005C0G1H471F050BA |          |
|             |            |                | ±10%                  | C1005C0G1H471K050BA |          |
|             |            |                | ±2%                   | C1005C0G1H471G050BA |          |
|             |            |                | ±5%                   | C1005C0G1H471J050BA |          |
|             | 1608       | 0.80±0.10      | ±1%                   | C1608C0G1H471F080AA |          |
|             |            |                | ±10%                  | C1608C0G1H471K080AA |          |
|             |            |                | ±2%                   | C1608C0G1H471G080AA |          |
|             |            |                | ±5%                   | C1608C0G1H471J080AA |          |
| 560 pF      | 1005       | 0.50±0.05      | ±10%                  | C1005C0G1H561K050BA |          |
|             |            |                | ±5%                   | C1005C0G1H561J050BA |          |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608C0G1H561K080AA |          |
|             |            |                | ±5%                   | C1608C0G1H561J080AA |          |
| 680 pF      | 1005       | 0.50±0.05      | ±1%                   | C1005C0G1H681F050BA |          |
|             |            |                | ±10%                  | C1005C0G1H681K050BA |          |
|             |            |                | ±2%                   | C1005C0G1H681G050BA |          |
|             |            |                | ±5%                   | C1005C0G1H681J050BA |          |
|             | 1608       | 0.80±0.10      | ±1%                   | C1608C0G1H681F080AA |          |
|             |            |                | ±10%                  | C1608C0G1H681K080AA |          |
|             |            |                | ±2%                   | C1608C0G1H681G080AA |          |
|             |            |                | ±5%                   | C1608C0G1H681J080AA |          |

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

## MULTILAYER CERAMIC CHIP CAPACITORS



## Capacitance range table

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

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number         |                        |
|-------------|------------|----------------|-----------------------|------------------------|------------------------|
|             |            |                |                       | Rated voltage Edc: 50V | Rated voltage Edc: 25V |
| 820 pF      | 1005       | 0.50±0.05      | ±10%                  | C1005C0G1H821K050BA    |                        |
|             |            |                | ±5%                   | C1005C0G1H821J050BA    |                        |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608C0G1H821K080AA    |                        |
|             |            |                | ±5%                   | C1608C0G1H821J080AA    |                        |
| 1 nF        | 1005       | 0.50±0.05      | ±1%                   | C1005C0G1H102F050BA    |                        |
|             |            |                | ±10%                  | C1005C0G1H102K050BA    |                        |
|             |            |                | ±2%                   | C1005C0G1H102G050BA    |                        |
|             | 1608       | 0.80±0.10      | ±5%                   | C1005C0G1H102J050BA    | C1005C0G1E102J050BA    |
|             |            |                | ±1%                   | C1608C0G1H102F080AA    |                        |
|             |            |                | ±10%                  | C1608C0G1H102K080AA    |                        |
| 2012        | 0.60±0.15  | ±2%            | C1608C0G1H102G080AA   |                        |                        |
|             |            | ±5%            | C1608C0G1H102J080AA   |                        |                        |
|             |            | ±10%           | C2012C0G1H102K060AA   |                        |                        |
| 1.2 nF      | 1608       | 0.80±0.10      | ±5%                   | C2012C0G1H102J060AA    |                        |
|             |            |                | ±10%                  | C1608C0G1H122K080AA    |                        |
|             | 2012       | 0.60±0.15      | ±5%                   | C1608C0G1H122J080AA    |                        |
|             |            |                | ±10%                  | C2012C0G1H122K060AA    |                        |
| 1.5 nF      | 1608       | 0.80±0.10      | ±10%                  | C1608C0G1H152K080AA    |                        |
|             |            |                | ±5%                   | C1608C0G1H152J080AA    |                        |
|             | 2012       | 0.60±0.15      | ±10%                  | C2012C0G1H152K060AA    |                        |
|             |            |                | ±5%                   | C2012C0G1H152J060AA    |                        |
| 1.8 nF      | 1608       | 0.80±0.10      | ±10%                  | C1608C0G1H182K080AA    |                        |
|             |            |                | ±5%                   | C1608C0G1H182J080AA    |                        |
|             | 2012       | 0.60±0.15      | ±10%                  | C2012C0G1H182K060AA    |                        |
|             |            |                | ±5%                   | C2012C0G1H182J060AA    |                        |
| 2.2 nF      | 1608       | 0.80±0.10      | ±10%                  | C1608C0G1H222K080AA    |                        |
|             |            |                | ±5%                   | C1608C0G1H222J080AA    |                        |
|             | 2012       | 0.60±0.15      | ±10%                  | C2012C0G1H222K060AA    |                        |
|             |            |                | ±5%                   | C2012C0G1H222J060AA    |                        |
| 2.7 nF      | 1608       | 0.80±0.10      | ±10%                  | C1608C0G1H272K080AA    |                        |
|             |            |                | ±5%                   | C1608C0G1H272J080AA    |                        |
|             | 2012       | 0.60±0.15      | ±10%                  | C2012C0G1H272K060AA    |                        |
|             |            |                | ±5%                   | C2012C0G1H272J060AA    |                        |
| 3.3 nF      | 1608       | 0.80±0.10      | ±10%                  | C1608C0G1H332K080AA    |                        |
|             |            |                | ±5%                   | C1608C0G1H332J080AA    |                        |
|             | 2012       | 0.60±0.15      | ±10%                  | C2012C0G1H332K060AA    |                        |
|             |            |                | ±5%                   | C2012C0G1H332J060AA    |                        |
| 3.9 nF      | 1608       | 0.80±0.10      | ±10%                  | C1608C0G1H392K080AA    |                        |
|             |            |                | ±5%                   | C1608C0G1H392J080AA    | C1608C0G1E392J080AA    |
|             | 2012       | 0.60±0.15      | ±10%                  | C2012C0G1H392K060AA    |                        |
|             |            |                | ±5%                   | C2012C0G1H392J060AA    |                        |
| 4.7 nF      | 3216       | 0.60±0.15      | ±10%                  | C3216C0G1H392K060AA    |                        |
|             |            |                | ±5%                   | C3216C0G1H392J060AA    |                        |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608C0G1H472K080AA    |                        |
|             |            |                | ±5%                   | C1608C0G1H472J080AA    | C1608C0G1E472J080AA    |
| 2012        | 0.60±0.15  | ±10%           | C2012C0G1H472K060AA   |                        |                        |
|             |            | ±5%            | C2012C0G1H472J060AA   |                        |                        |
|             |            | ±10%           | C3216C0G1H472K060AA   |                        |                        |
| 5.6 nF      | 3216       | 0.60±0.15      | ±5%                   | C3216C0G1H472J060AA    |                        |
|             |            |                | ±10%                  | C1608C0G1H562K080AA    |                        |
|             | 1608       | 0.80±0.10      | ±5%                   | C1608C0G1H562J080AA    | C1608C0G1E562J080AA    |
|             |            |                | ±10%                  | C2012C0G1H562K060AA    |                        |
| 2012        | 0.60±0.15  | ±5%            | C2012C0G1H562J060AA   |                        |                        |
|             |            | ±10%           | C3216C0G1H562K060AA   |                        |                        |
| 3216        | 0.60±0.15  | ±5%            | C3216C0G1H562J060AA   |                        |                        |
|             |            | ±10%           | C3216C0G1H562K060AA   |                        |                        |

■ Gray items: These products are not recommended for new designs.

■ Red item: The product which is planning to stop production.

Click the part numbers for details.

**MULTILAYER CERAMIC CHIP CAPACITORS** 

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

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number         |                        |                        |
|-------------|------------|----------------|-----------------------|------------------------|------------------------|------------------------|
|             |            |                |                       | Rated voltage Edc: 50V | Rated voltage Edc: 35V | Rated voltage Edc: 25V |
| 6.8 nF      | 1608       | 0.80±0.10      | ±10%                  | C1608C0G1H682K080AA    |                        |                        |
|             |            |                | ±5%                   | C1608C0G1H682J080AA    |                        | C1608C0G1E682J080AA    |
|             | 2012       | 0.60±0.15      | ±10%                  | C2012C0G1H682K060AA    |                        |                        |
|             |            |                | ±5%                   | C2012C0G1H682J060AA    |                        |                        |
|             | 3216       | 0.60±0.15      | ±10%                  | C3216C0G1H682K060AA    |                        |                        |
|             |            |                | ±5%                   | C3216C0G1H682J060AA    |                        |                        |
| 8.2 nF      | 1608       | 0.80±0.10      | ±10%                  | C1608C0G1H822K080AA    |                        |                        |
|             |            |                | ±5%                   | C1608C0G1H822J080AA    |                        | C1608C0G1E822J080AA    |
|             | 2012       | 0.60±0.15      | ±10%                  | C2012C0G1H822K060AA    |                        |                        |
|             |            |                | ±5%                   | C2012C0G1H822J060AA    |                        |                        |
|             | 3216       | 0.60±0.15      | ±10%                  | C3216C0G1H822K060AA    |                        |                        |
|             |            |                | ±5%                   | C3216C0G1H822J060AA    |                        |                        |
| 10 nF       | 1608       | 0.80±0.10      | ±10%                  | C1608C0G1H103K080AA    | C1608C0G1V103K080AC    |                        |
|             |            |                | ±5%                   | C1608C0G1H103J080AA    | C1608C0G1V103J080AC    | C1608C0G1E103J080AA    |
|             | 2012       | 0.60±0.15      | ±10%                  | C2012C0G1H103K060AA    |                        |                        |
|             |            |                | ±5%                   | C2012C0G1H103J060AA    |                        | C2012C0G1E103J060AA    |
|             | 3216       | 0.60±0.15      | ±10%                  | C3216C0G1H103K060AA    |                        |                        |
|             |            |                | ±5%                   | C3216C0G1H103J060AA    |                        |                        |
| 15 nF       | 1608       | 0.80±0.10      | ±10%                  |                        | C1608C0G1V153K080AC    |                        |
|             |            |                | ±5%                   |                        | C1608C0G1V153J080AC    |                        |
|             | 2012       | 0.85±0.15      | ±10%                  | C2012C0G1H153K085AA    |                        |                        |
|             |            |                | ±5%                   | C2012C0G1H153J085AA    |                        | C2012C0G1E153J085AA    |
|             | 3216       | 0.60±0.15      | ±10%                  | C3216C0G1H153K060AA    |                        |                        |
|             |            |                | ±5%                   | C3216C0G1H153J060AA    |                        |                        |
| 18 nF       | 1608       | 0.80±0.10      | ±10%                  |                        | C1608C0G1V183K080AC    |                        |
|             |            |                | ±5%                   |                        | C1608C0G1V183J080AC    |                        |
|             | 2012       | 0.60±0.15      | ±10%                  |                        | C2012C0G1V183K060AC    |                        |
|             |            |                | ±5%                   |                        | C2012C0G1V183J060AC    |                        |
|             | 2012       | 0.60±0.15      | ±10%                  |                        | C2012C0G1V223K060AC    |                        |
|             |            |                | ±5%                   |                        | C2012C0G1V223J060AC    |                        |
| 22 nF       | 2012       | 1.25±0.20      | ±10%                  | C2012C0G1H223K125AA    |                        |                        |
|             |            |                | ±5%                   | C2012C0G1H223J125AA    |                        | C2012C0G1E223J125AA    |
|             | 3216       | 0.60±0.15      | ±10%                  | C3216C0G1H223K060AA    |                        |                        |
|             |            |                | ±5%                   | C3216C0G1H223J060AA    |                        |                        |
|             | 3225       | 1.25±0.20      | ±10%                  | C3225C0G1H223K125AA    |                        |                        |
|             |            |                | ±5%                   | C3225C0G1H223J125AA    |                        |                        |
| 27 nF       | 2012       | 0.60±0.15      | ±10%                  |                        | C2012C0G1V273K060AC    |                        |
|             |            |                | ±5%                   |                        | C2012C0G1V273J060AC    |                        |
| 30 nF       | 2012       | 0.60±0.15      | ±10%                  |                        | C2012C0G1V303K060AC    |                        |
|             |            |                | ±5%                   |                        | C2012C0G1V303J060AC    |                        |
| 33 nF       | 2012       | 1.25±0.20      | ±10%                  | C2012C0G1H333K125AA    |                        |                        |
|             |            |                | ±5%                   | C2012C0G1H333J125AA    |                        | C2012C0G1E333J125AA    |
|             | 3216       | 0.85±0.15      | ±10%                  | C3216C0G1H333K085AA    |                        |                        |
|             |            |                | ±5%                   | C3216C0G1H333J085AA    |                        |                        |
|             | 3225       | 1.60±0.20      | ±10%                  | C3225C0G1H333K160AA    |                        |                        |
|             |            |                | ±5%                   | C3225C0G1H333J160AA    |                        |                        |
| 47 nF       | 3216       | 1.15±0.15      | ±10%                  | C3216C0G1H473K115AA    |                        |                        |
|             |            |                | ±5%                   | C3216C0G1H473J115AA    |                        |                        |
|             | 3225       | 2.00±0.20      | ±10%                  | C3225C0G1H473K200AA    |                        |                        |
|             |            |                | ±5%                   | C3225C0G1H473J200AA    |                        |                        |
|             | 4532       | 1.60±0.20      | ±10%                  | C4532C0G1H473K160KA    |                        |                        |
|             |            |                | ±5%                   | C4532C0G1H473J160KA    |                        |                        |
| 68 nF       | 3216       | 1.60±0.20      | ±10%                  | C3216C0G1H683K160AA    |                        |                        |
|             |            |                | ±5%                   | C3216C0G1H683J160AA    |                        |                        |
|             | 3225       | 2.00±0.20      | ±10%                  | C3225C0G1H683K200AA    |                        |                        |
|             |            |                | ±5%                   | C3225C0G1H683J200AA    |                        |                        |
|             | 4532       | 1.60±0.20      | ±10%                  | C4532C0G1H683K160KA    |                        |                        |
|             |            |                | ±5%                   | C4532C0G1H683J160KA    |                        |                        |
| 100 nF      | 3216       | 1.60±0.20      | ±10%                  | C3216C0G1H104K160AA    |                        |                        |
|             |            |                | ±5%                   | C3216C0G1H104J160AA    |                        |                        |
|             | 3225       | 2.50±0.30      | ±10%                  | C3225C0G1H104K250AA    |                        |                        |
|             |            |                | ±5%                   | C3225C0G1H104J250AA    |                        |                        |
|             | 4532       | 2.00±0.20      | ±10%                  | C4532C0G1H104K200KA    |                        |                        |
|             |            |                | ±5%                   | C4532C0G1H104J200KA    |                        |                        |
| 150 nF      | 4532       | 2.50±0.30      | ±10%                  | C4532C0G1H154K250KA    |                        |                        |
|             |            |                | ±5%                   | C4532C0G1H154J250KA    |                        |                        |
| 220 nF      | 4532       | 3.20±0.30      | ±10%                  | C4532C0G1H224K320KA    |                        |                        |
|             |            |                | ±5%                   | C4532C0G1H224J320KA    |                        |                        |

■ Gray items: These products are not recommended for new designs.  
 ■ Red item: The product which is planning to stop production.  
 Click the part 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

Temperature characteristic: CH (-25 to +85°C, 0±60 ppm/°C)

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number         |                        |                        |
|-------------|------------|----------------|-----------------------|------------------------|------------------------|------------------------|
|             |            |                |                       | Rated voltage Edc: 50V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 0.5 pF      | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402CH1C0R5C020BC     |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603CH1H0R5C030BA     | C0603CH1E0R5C030BA     |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005CH1H0R5B050BA     |                        |                        |
|             |            |                | ±0.25pF               | C1005CH1H0R5C050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608CH1H0R5C080AA    |                        |                        |                        |
| 0.75 pF     | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402CH1CR75C020BC     |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603CH1HR75C030BA     | C0603CH1ER75C030BA     |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005CH1HR75B050BA     |                        |                        |
|             |            |                | ±0.25pF               | C1005CH1HR75C050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608CH1HR75C080AA    |                        |                        |                        |
| 1 pF        | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402CH1C010C020BC     |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603CH1H010C030BA     | C0603CH1E010C030BA     |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005CH1H010B050BA     |                        |                        |
|             |            |                | ±0.25pF               | C1005CH1H010C050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608CH1H010C080AA    |                        |                        |                        |
| 1.5 pF      | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402CH1C1R5C020BC     |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603CH1H1R5C030BA     | C0603CH1E1R5C030BA     |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005CH1H1R5B050BA     |                        |                        |
|             |            |                | ±0.25pF               | C1005CH1H1R5C050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608CH1H1R5C080AA    |                        |                        |                        |
| 2 pF        | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402CH1C020C020BC     |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603CH1H020C030BA     | C0603CH1E020C030BA     |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005CH1H020B050BA     |                        |                        |
|             |            |                | ±0.25pF               | C1005CH1H020C050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608CH1H020C080AA    |                        |                        |                        |
| 2.2 pF      | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402CH1C2R2C020BC     |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603CH1H2R2C030BA     | C0603CH1E2R2C030BA     |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005CH1H2R2C050BA     |                        |                        |
|             |            |                | ±0.25pF               | C1005CH1H2R2C050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608CH1H2R2C080AA    |                        |                        |                        |
| 3 pF        | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402CH1C030C020BC     |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603CH1H030C030BA     | C0603CH1E030C030BA     |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005CH1H030B050BA     |                        |                        |
|             |            |                | ±0.25pF               | C1005CH1H030C050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608CH1H030C080AA    |                        |                        |                        |
| 3.3 pF      | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402CH1C3R3C020BC     |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603CH1H3R3C030BA     | C0603CH1E3R3C030BA     |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005CH1H3R3C050BA     |                        |                        |
|             |            |                | ±0.25pF               | C1005CH1H3R3C050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608CH1H3R3C080AA    |                        |                        |                        |
| 4 pF        | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402CH1C040C020BC     |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603CH1H040C030BA     | C0603CH1E040C030BA     |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005CH1H040B050BA     |                        |                        |
|             |            |                | ±0.25pF               | C1005CH1H040C050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608CH1H040C080AA    |                        |                        |                        |
| 4.7 pF      | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402CH1C4R7C020BC     |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603CH1H4R7C030BA     | C0603CH1E4R7C030BA     |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005CH1H4R7C050BA     |                        |                        |
|             |            |                | ±0.25pF               | C1005CH1H4R7C050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608CH1H4R7C080AA    |                        |                        |                        |
| 5 pF        | 0402       | 0.20±0.02      | ±0.25pF               |                        |                        | C0402CH1C050C020BC     |
|             | 0603       | 0.30±0.03      | ±0.25pF               | C0603CH1H050C030BA     | C0603CH1E050C030BA     |                        |
|             | 1005       | 0.50±0.05      | ±0.10pF               | C1005CH1H050B050BA     |                        |                        |
|             |            |                | ±0.25pF               | C1005CH1H050C050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608CH1H050C080AA    |                        |                        |                        |
| 6 pF        | 0402       | 0.20±0.02      | ±0.50pF               |                        |                        | C0402CH1C060D020BC     |
|             | 0603       | 0.30±0.03      | ±0.50pF               | C0603CH1H060D030BA     | C0603CH1E060D030BA     |                        |
|             | 1005       | 0.50±0.05      | ±0.25pF               | C1005CH1H060C050BA     |                        |                        |
|             |            |                | ±0.50pF               | C1005CH1H060D050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608CH1H060C080AA    |                        |                        |                        |
| 6.8 pF      | 0402       | 0.20±0.02      | ±0.50pF               |                        |                        | C0402CH1C6R8D020BC     |
|             | 0603       | 0.30±0.03      | ±0.50pF               | C0603CH1H6R8D030BA     | C0603CH1E6R8D030BA     |                        |
|             | 1005       | 0.50±0.05      | ±0.25pF               | C1005CH1H070C050BA     |                        |                        |
|             |            |                | ±0.50pF               | C1005CH1H070D050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608CH1H070C080AA    |                        |                        |                        |
| 7 pF        | 0402       | 0.20±0.02      | ±0.50pF               |                        |                        | C0402CH1C070D020BC     |
|             | 0603       | 0.30±0.03      | ±0.50pF               | C0603CH1H070D030BA     | C0603CH1E070D030BA     |                        |
|             | 1005       | 0.50±0.05      | ±0.25pF               | C1005CH1H070C050BA     |                        |                        |
|             |            |                | ±0.50pF               | C1005CH1H070D050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±0.25pF        | C1608CH1H070C080AA    |                        |                        |                        |
|             |            |                | ±0.50pF               | C1608CH1H070D080AA     |                        |                        |

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

## MULTILAYER CERAMIC CHIP CAPACITORS


**Capacitance range table**      **Temperature characteristic: CH (-25 to +85°C, 0±60 ppm/°C)**

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number         |                        |                        |
|-------------|------------|----------------|-----------------------|------------------------|------------------------|------------------------|
|             |            |                |                       | Rated voltage Edc: 50V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 8 pF        | 0402       | 0.20±0.02      | ±0.50pF               |                        |                        | C0402CH1C080D020BC     |
|             | 0603       | 0.30±0.03      | ±0.50pF               | C0603CH1H080D030BA     | C0603CH1E080D030BA     |                        |
|             | 1005       | 0.50±0.05      | ±0.25pF               | C1005CH1H080C050BA     |                        |                        |
|             |            |                | ±0.50pF               | C1005CH1H080D050BA     |                        |                        |
|             |            |                | ±0.25pF               | C1608CH1H080C080AA     |                        |                        |
| 1608        | 0.80±0.10  | ±0.50pF        | C1608CH1H080D080AA    |                        |                        |                        |
| 9 pF        | 0402       | 0.20±0.02      | ±0.50pF               |                        |                        | C0402CH1C090D020BC     |
|             | 0603       | 0.30±0.03      | ±0.50pF               | C0603CH1H090D030BA     | C0603CH1E090D030BA     |                        |
|             | 1005       | 0.50±0.05      | ±0.25pF               | C1005CH1H090C050BA     |                        |                        |
|             |            |                | ±0.50pF               | C1005CH1H090D050BA     |                        |                        |
|             |            |                | ±0.25pF               | C1608CH1H090C080AA     |                        |                        |
| 1608        | 0.80±0.10  | ±0.50pF        | C1608CH1H090D080AA    |                        |                        |                        |
| 10 pF       | 0402       | 0.20±0.02      | ±0.50pF               |                        |                        | C0402CH1C100D020BC     |
|             | 0603       | 0.30±0.03      | ±0.50pF               | C0603CH1H100D030BA     | C0603CH1E100D030BA     |                        |
|             | 1005       | 0.50±0.05      | ±0.25pF               | C1005CH1H100C050BA     |                        |                        |
|             |            |                | ±0.50pF               | C1005CH1H100D050BA     |                        |                        |
|             |            |                | ±0.25pF               | C1608CH1H100C080AA     |                        |                        |
| 1608        | 0.80±0.10  | ±0.50pF        | C1608CH1H100D080AA    |                        |                        |                        |
| 12 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402CH1C120K020BC     |
|             | 0603       | 0.30±0.03      | ±5%                   |                        |                        | C0402CH1C120J020BC     |
|             |            |                | ±10%                  | C0603CH1H120K030BA     | C0603CH1E120K030BA     |                        |
|             | 1005       | 0.50±0.05      | ±5%                   | C0603CH1H120J030BA     | C0603CH1E120J030BA     |                        |
|             |            |                | ±5%                   | C1005CH1H120J050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±5%            | C1608CH1H120J080AA    |                        |                        |                        |
| 15 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402CH1C150K020BC     |
|             | 0603       | 0.30±0.03      | ±5%                   |                        |                        | C0402CH1C150J020BC     |
|             |            |                | ±10%                  | C0603CH1H150K030BA     | C0603CH1E150K030BA     |                        |
|             | 1005       | 0.50±0.05      | ±5%                   | C0603CH1H150J030BA     | C0603CH1E150J030BA     |                        |
|             |            |                | ±5%                   | C1005CH1H150J050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±5%            | C1608CH1H150J080AA    |                        |                        |                        |
| 18 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402CH1C180K020BC     |
|             | 0603       | 0.30±0.03      | ±5%                   |                        |                        | C0402CH1C180J020BC     |
|             |            |                | ±10%                  | C0603CH1H180K030BA     | C0603CH1E180K030BA     |                        |
|             | 1005       | 0.50±0.05      | ±5%                   | C0603CH1H180J030BA     | C0603CH1E180J030BA     |                        |
|             |            |                | ±5%                   | C1005CH1H180J050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±5%            | C1608CH1H180J080AA    |                        |                        |                        |
| 22 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402CH1C220K020BC     |
|             | 0603       | 0.30±0.03      | ±5%                   |                        |                        | C0402CH1C220J020BC     |
|             |            |                | ±10%                  | C0603CH1H220K030BA     | C0603CH1E220K030BA     |                        |
|             | 1005       | 0.50±0.05      | ±5%                   | C0603CH1H220J030BA     | C0603CH1E220J030BA     |                        |
|             |            |                | ±5%                   | C1005CH1H220J050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±5%            | C1608CH1H220J080AA    |                        |                        |                        |
| 27 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402CH1C270K020BC     |
|             | 0603       | 0.30±0.03      | ±5%                   |                        |                        | C0402CH1C270J020BC     |
|             |            |                | ±10%                  | C0603CH1H270K030BA     | C0603CH1E270K030BA     |                        |
|             | 1005       | 0.50±0.05      | ±5%                   | C0603CH1H270J030BA     | C0603CH1E270J030BA     |                        |
|             |            |                | ±5%                   | C1005CH1H270J050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±5%            | C1608CH1H270J080AA    |                        |                        |                        |
| 33 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402CH1C330K020BC     |
|             | 0603       | 0.30±0.03      | ±5%                   |                        |                        | C0402CH1C330J020BC     |
|             |            |                | ±10%                  | C0603CH1H330K030BA     | C0603CH1E330K030BA     |                        |
|             | 1005       | 0.50±0.05      | ±5%                   | C0603CH1H330J030BA     | C0603CH1E330J030BA     |                        |
|             |            |                | ±5%                   | C1005CH1H330J050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±5%            | C1608CH1H330J080AA    |                        |                        |                        |
| 39 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402CH1C390K020BC     |
|             | 0603       | 0.30±0.03      | ±5%                   |                        |                        | C0402CH1C390J020BC     |
|             |            |                | ±10%                  | C0603CH1H390K030BA     | C0603CH1E390K030BA     |                        |
|             | 1005       | 0.50±0.05      | ±5%                   | C0603CH1H390J030BA     | C0603CH1E390J030BA     |                        |
|             |            |                | ±5%                   | C1005CH1H390J050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±5%            | C1608CH1H390J080AA    |                        |                        |                        |

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



## MULTILAYER CERAMIC CHIP CAPACITORS


**Capacitance range table**      **Temperature characteristic: CH (-25 to +85°C, 0±60 ppm/°C)**

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number         |                        |                        |
|-------------|------------|----------------|-----------------------|------------------------|------------------------|------------------------|
|             |            |                |                       | Rated voltage Edc: 50V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 47 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402CH1C470K020BC     |
|             |            |                | ±5%                   |                        |                        | C0402CH1C470J020BC     |
|             | 0603       | 0.30±0.03      | ±10%                  | C0603CH1H470K030BA     | C0603CH1E470K030BA     |                        |
|             |            |                | ±5%                   | C0603CH1H470J030BA     | C0603CH1E470J030BA     |                        |
| 1005        | 0.50±0.05  | ±5%            | C1005CH1H470J050BA    |                        |                        |                        |
|             |            | ±5%            | C1608CH1H470J080AA    |                        |                        |                        |
| 56 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402CH1C560K020BC     |
|             |            |                | ±5%                   |                        |                        | C0402CH1C560J020BC     |
|             | 0603       | 0.30±0.03      | ±10%                  | C0603CH1H560K030BA     | C0603CH1E560K030BA     |                        |
|             |            |                | ±5%                   | C0603CH1H560J030BA     | C0603CH1E560J030BA     |                        |
| 1005        | 0.50±0.05  | ±5%            | C1005CH1H560J050BA    |                        |                        |                        |
|             |            | ±5%            | C1608CH1H560J080AA    |                        |                        |                        |
| 68 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402CH1C680K020BC     |
|             |            |                | ±5%                   |                        |                        | C0402CH1C680J020BC     |
|             | 0603       | 0.30±0.03      | ±10%                  | C0603CH1H680K030BA     | C0603CH1E680K030BA     |                        |
|             |            |                | ±5%                   | C0603CH1H680J030BA     | C0603CH1E680J030BA     |                        |
| 1005        | 0.50±0.05  | ±5%            | C1005CH1H680J050BA    |                        |                        |                        |
|             |            | ±5%            | C1608CH1H680J080AA    |                        |                        |                        |
| 82 pF       | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402CH1C820K020BC     |
|             |            |                | ±5%                   |                        |                        | C0402CH1C820J020BC     |
|             | 0603       | 0.30±0.03      | ±10%                  | C0603CH1H820K030BA     | C0603CH1E820K030BA     |                        |
|             |            |                | ±5%                   | C0603CH1H820J030BA     | C0603CH1E820J030BA     |                        |
| 1005        | 0.50±0.05  | ±5%            | C1005CH1H820J050BA    |                        |                        |                        |
|             |            | ±5%            | C1608CH1H820J080AA    |                        |                        |                        |
| 100 pF      | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402CH1C101K020BC     |
|             |            |                | ±5%                   |                        |                        | C0402CH1C101J020BC     |
|             | 0603       | 0.30±0.03      | ±10%                  | C0603CH1H101K030BA     | C0603CH1E101K030BA     |                        |
|             |            |                | ±5%                   | C0603CH1H101J030BA     | C0603CH1E101J030BA     |                        |
| 1005        | 0.50±0.05  | ±10%           | C1005CH1H101K050BA    |                        |                        |                        |
|             |            | ±5%            | C1005CH1H101J050BA    |                        |                        |                        |
| 1608        | 0.80±0.10  | ±10%           | C1608CH1H101K080AA    |                        |                        |                        |
|             |            | ±5%            | C1608CH1H101J080AA    |                        |                        |                        |
| 120 pF      | 1005       | 0.50±0.05      | ±10%                  | C1005CH1H121K050BA     |                        |                        |
|             |            |                | ±5%                   | C1005CH1H121J050BA     |                        |                        |
| 1608        | 0.80±0.10  | ±10%           | C1608CH1H121K080AA    |                        |                        |                        |
|             |            | ±5%            | C1608CH1H121J080AA    |                        |                        |                        |
| 150 pF      | 1005       | 0.50±0.05      | ±10%                  | C1005CH1H151K050BA     |                        |                        |
|             |            |                | ±5%                   | C1005CH1H151J050BA     |                        |                        |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H151K080AA     |                        |                        |
|             |            |                | ±5%                   | C1608CH1H151J080AA     |                        |                        |
| 180 pF      | 1005       | 0.50±0.05      | ±10%                  | C1005CH1H181K050BA     |                        |                        |
|             |            |                | ±5%                   | C1005CH1H181J050BA     |                        |                        |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H181K080AA     |                        |                        |
|             |            |                | ±5%                   | C1608CH1H181J080AA     |                        |                        |
| 220 pF      | 1005       | 0.50±0.05      | ±10%                  | C1005CH1H221K050BA     |                        |                        |
|             |            |                | ±5%                   | C1005CH1H221J050BA     |                        |                        |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H221K080AA     |                        |                        |
|             |            |                | ±5%                   | C1608CH1H221J080AA     |                        |                        |
| 270 pF      | 1005       | 0.50±0.05      | ±10%                  | C1005CH1H271K050BA     |                        |                        |
|             |            |                | ±5%                   | C1005CH1H271J050BA     |                        |                        |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H271K080AA     |                        |                        |
|             |            |                | ±5%                   | C1608CH1H271J080AA     |                        |                        |
| 330 pF      | 1005       | 0.50±0.05      | ±10%                  | C1005CH1H331K050BA     |                        |                        |
|             |            |                | ±5%                   | C1005CH1H331J050BA     |                        |                        |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H331K080AA     |                        |                        |
|             |            |                | ±5%                   | C1608CH1H331J080AA     |                        |                        |
| 390 pF      | 1005       | 0.50±0.05      | ±10%                  | C1005CH1H391K050BA     |                        |                        |
|             |            |                | ±5%                   | C1005CH1H391J050BA     |                        |                        |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H391K080AA     |                        |                        |
|             |            |                | ±5%                   | C1608CH1H391J080AA     |                        |                        |

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



**Capacitance range table**      **Temperature characteristic: CH (-25 to +85°C, 0±60 ppm/°C)**

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number     |          |
|-------------|------------|----------------|-----------------------|--------------------|----------|
|             |            |                |                       | Rated voltage      | Edc: 50V |
| 470 pF      | 1005       | 0.50±0.05      | ±10%                  | C1005CH1H471K050BA |          |
|             |            |                | ±5%                   | C1005CH1H471J050BA |          |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H471K080AA |          |
|             |            |                | ±5%                   | C1608CH1H471J080AA |          |
| 560 pF      | 1005       | 0.50±0.05      | ±10%                  | C1005CH1H561K050BA |          |
|             |            |                | ±5%                   | C1005CH1H561J050BA |          |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H561K080AA |          |
|             |            |                | ±5%                   | C1608CH1H561J080AA |          |
| 680 pF      | 1005       | 0.50±0.05      | ±10%                  | C1005CH1H681K050BA |          |
|             |            |                | ±5%                   | C1005CH1H681J050BA |          |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H681K080AA |          |
|             |            |                | ±5%                   | C1608CH1H681J080AA |          |
| 820 pF      | 1005       | 0.50±0.05      | ±10%                  | C1005CH1H821K050BA |          |
|             |            |                | ±5%                   | C1005CH1H821J050BA |          |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H821K080AA |          |
|             |            |                | ±5%                   | C1608CH1H821J080AA |          |
| 1 nF        | 1005       | 0.50±0.05      | ±10%                  | C1005CH1H102K050BA |          |
|             |            |                | ±5%                   | C1005CH1H102J050BA |          |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H102K080AA |          |
|             |            |                | ±5%                   | C1608CH1H102J080AA |          |
| 1.2 nF      | 2012       | 0.60±0.15      | ±10%                  | C2012CH1H102K060AA |          |
|             |            |                | ±5%                   | C2012CH1H102J060AA |          |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H122K080AA |          |
|             |            |                | ±5%                   | C1608CH1H122J080AA |          |
| 1.5 nF      | 2012       | 0.60±0.15      | ±10%                  | C2012CH1H122K060AA |          |
|             |            |                | ±5%                   | C2012CH1H122J060AA |          |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H152K080AA |          |
|             |            |                | ±5%                   | C1608CH1H152J080AA |          |
| 1.8 nF      | 2012       | 0.60±0.15      | ±10%                  | C2012CH1H152K060AA |          |
|             |            |                | ±5%                   | C2012CH1H152J060AA |          |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H182K080AA |          |
|             |            |                | ±5%                   | C1608CH1H182J080AA |          |
| 2.2 nF      | 2012       | 0.60±0.15      | ±10%                  | C2012CH1H182K060AA |          |
|             |            |                | ±5%                   | C2012CH1H182J060AA |          |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H222K080AA |          |
|             |            |                | ±5%                   | C1608CH1H222J080AA |          |
| 2.7 nF      | 2012       | 0.60±0.15      | ±10%                  | C2012CH1H222K060AA |          |
|             |            |                | ±5%                   | C2012CH1H222J060AA |          |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H272K080AA |          |
|             |            |                | ±5%                   | C1608CH1H272J080AA |          |
| 3.3 nF      | 2012       | 0.60±0.15      | ±10%                  | C2012CH1H272K060AA |          |
|             |            |                | ±5%                   | C2012CH1H272J060AA |          |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H332K080AA |          |
|             |            |                | ±5%                   | C1608CH1H332J080AA |          |
| 3.9 nF      | 2012       | 0.60±0.15      | ±10%                  | C2012CH1H332K060AA |          |
|             |            |                | ±5%                   | C2012CH1H332J060AA |          |
|             | 3216       | 0.60±0.15      | ±10%                  | C3216CH1H332K060AA |          |
|             |            |                | ±5%                   | C3216CH1H332J060AA |          |
| 4.7 nF      | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H392K080AA |          |
|             |            |                | ±5%                   | C1608CH1H392J080AA |          |
|             | 2012       | 0.60±0.15      | ±10%                  | C2012CH1H392K060AA |          |
|             |            |                | ±5%                   | C2012CH1H392J060AA |          |
| 4.7 nF      | 3216       | 0.60±0.15      | ±10%                  | C3216CH1H472K060AA |          |
|             |            |                | ±5%                   | C3216CH1H472J060AA |          |

■ Gray items: These products are not recommended for new designs.

■ Red item: The product which is planning to stop production.

Click the part numbers for details.

## MULTILAYER CERAMIC CHIP CAPACITORS


**Capacitance range table**      **Temperature characteristic: CH (-25 to +85°C, 0±60 ppm/°C)**

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number         |                        |
|-------------|------------|----------------|-----------------------|------------------------|------------------------|
|             |            |                |                       | Rated voltage Edc: 50V | Rated voltage Edc: 35V |
| 5.6 nF      | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H562K080AA     |                        |
|             |            |                | ±5%                   | C1608CH1H562J080AA     |                        |
|             | 2012       | 0.60±0.15      | ±10%                  | C2012CH1H562K060AA     |                        |
|             |            |                | ±5%                   | C2012CH1H562J060AA     |                        |
|             | 3216       | 0.60±0.15      | ±10%                  | C3216CH1H562K060AA     |                        |
|             |            |                | ±5%                   | C3216CH1H562J060AA     |                        |
| 6.8 nF      | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H682K080AA     |                        |
|             |            |                | ±5%                   | C1608CH1H682J080AA     |                        |
|             | 2012       | 0.60±0.15      | ±10%                  | C2012CH1H682K060AA     |                        |
|             |            |                | ±5%                   | C2012CH1H682J060AA     |                        |
|             | 3216       | 0.60±0.15      | ±10%                  | C3216CH1H682K060AA     |                        |
|             |            |                | ±5%                   | C3216CH1H682J060AA     |                        |
| 8.2 nF      | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H822K080AA     |                        |
|             |            |                | ±5%                   | C1608CH1H822J080AA     |                        |
|             | 2012       | 0.60±0.15      | ±10%                  | C2012CH1H822K060AA     |                        |
|             |            |                | ±5%                   | C2012CH1H822J060AA     |                        |
|             | 3216       | 0.60±0.15      | ±10%                  | C3216CH1H822K060AA     |                        |
|             |            |                | ±5%                   | C3216CH1H822J060AA     |                        |
| 10 nF       | 1608       | 0.80±0.10      | ±10%                  | C1608CH1H103K080AA     | C1608CH1V103K080AC     |
|             |            |                | ±5%                   | C1608CH1H103J080AA     | C1608CH1V103J080AC     |
|             | 2012       | 0.60±0.15      | ±10%                  | C2012CH1H103K060AA     |                        |
|             |            |                | ±5%                   | C2012CH1H103J060AA     |                        |
|             | 3216       | 0.60±0.15      | ±10%                  | C3216CH1H103K060AA     |                        |
|             |            |                | ±5%                   | C3216CH1H103J060AA     |                        |
| 15 nF       | 1608       | 0.80±0.10      | ±10%                  |                        | C1608CH1V153K080AC     |
|             |            |                | ±5%                   |                        | C1608CH1V153J080AC     |
|             | 2012       | 0.85±0.15      | ±10%                  | C2012CH1H153K085AA     |                        |
|             |            |                | ±5%                   | C2012CH1H153J085AA     |                        |
|             | 3216       | 0.60±0.15      | ±10%                  | C3216CH1H153K060AA     |                        |
|             |            |                | ±5%                   | C3216CH1H153J060AA     |                        |
| 18 nF       | 1608       | 0.80±0.10      | ±10%                  |                        | C1608CH1V183K080AC     |
|             |            |                | ±5%                   |                        | C1608CH1V183J080AC     |
|             | 2012       | 0.60±0.15      | ±10%                  |                        | C2012CH1V183K060AC     |
|             |            |                | ±5%                   |                        | C2012CH1V183J060AC     |
|             | 2012       | 0.60±0.15      | ±10%                  |                        | C2012CH1V223K060AC     |
|             |            |                | ±5%                   |                        | C2012CH1V223J060AC     |
| 22 nF       | 2012       | 1.25±0.20      | ±10%                  | C2012CH1H223K125AA     |                        |
|             |            |                | ±5%                   | C2012CH1H223J125AA     |                        |
|             | 3216       | 0.60±0.15      | ±10%                  | C3216CH1H223K060AA     |                        |
|             |            |                | ±5%                   | C3216CH1H223J060AA     |                        |
|             | 3225       | 1.25±0.20      | ±10%                  | C3225CH1H223K125AA     |                        |
|             |            |                | ±5%                   | C3225CH1H223J125AA     |                        |
| 27 nF       | 2012       | 0.60±0.15      | ±10%                  |                        | C2012CH1V273K060AC     |
|             |            |                | ±5%                   |                        | C2012CH1V273J060AC     |
| 30 nF       | 2012       | 0.60±0.15      | ±10%                  |                        | C2012CH1V303K060AC     |
|             |            |                | ±5%                   |                        | C2012CH1V303J060AC     |
| 33 nF       | 2012       | 1.25±0.20      | ±10%                  | C2012CH1H333K125AA     |                        |
|             |            |                | ±5%                   | C2012CH1H333J125AA     |                        |
|             | 3216       | 0.85±0.15      | ±10%                  | C3216CH1H333K085AA     |                        |
|             |            |                | ±5%                   | C3216CH1H333J085AA     |                        |
|             | 3225       | 1.60±0.20      | ±10%                  | C3225CH1H333K160AA     |                        |
|             |            |                | ±5%                   | C3225CH1H333J160AA     |                        |
| 47 nF       | 3216       | 1.15±0.15      | ±10%                  | C3216CH1H473K115AA     |                        |
|             |            |                | ±5%                   | C3216CH1H473J115AA     |                        |
|             | 3225       | 2.00±0.20      | ±10%                  | C3225CH1H473K200AA     |                        |
|             |            |                | ±5%                   | C3225CH1H473J200AA     |                        |
|             | 4532       | 1.60±0.20      | ±10%                  | C4532CH1H473K160KA     |                        |
|             |            |                | ±5%                   | C4532CH1H473J160KA     |                        |
| 68 nF       | 3216       | 1.60±0.20      | ±10%                  | C3216CH1H683K160AA     |                        |
|             |            |                | ±5%                   | C3216CH1H683J160AA     |                        |
|             | 3225       | 2.00±0.20      | ±10%                  | C3225CH1H683K200AA     |                        |
|             |            |                | ±5%                   | C3225CH1H683J200AA     |                        |
|             | 4532       | 1.60±0.20      | ±10%                  | C4532CH1H683K160KA     |                        |
|             |            |                | ±5%                   | C4532CH1H683J160KA     |                        |

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

**Capacitance range table**      **Temperature characteristic: CH (-25 to +85°C, 0±60 ppm/°C)**

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number         |  |
|-------------|------------|----------------|-----------------------|------------------------|--|
|             |            |                |                       | Rated voltage Edc: 50V |  |
| 100 nF      | 3216       | 1.60±0.20      | ±10%                  | C3216CH1H104K160AA     |  |
|             |            |                | ±5%                   | C3216CH1H104J160AA     |  |
|             | 3225       | 2.50±0.30      | ±10%                  | C3225CH1H104K250AA     |  |
|             |            |                | ±5%                   | C3225CH1H104J250AA     |  |
|             | 4532       | 2.00±0.20      | ±10%                  | C4532CH1H104K200KA     |  |
|             |            |                | ±5%                   | C4532CH1H104J200KA     |  |
| 150 nF      | 4532       | 2.50±0.30      | ±10%                  | C4532CH1H154K250KA     |  |
|             |            |                | ±5%                   | C4532CH1H154J250KA     |  |
| 220 nF      | 4532       | 3.20±0.30      | ±10%                  | C4532CH1H224K320KA     |  |
|             |            |                | ±5%                   | C4532CH1H224J320KA     |  |

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

**Capacitance range table**      **Temperature characteristic: JB (-25 to +85°C, ±10%)**

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number         |                        |                        |
|-------------|------------|----------------|-----------------------|------------------------|------------------------|------------------------|
|             |            |                |                       | Rated voltage Edc: 50V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 100 pF      | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402JB1C101K020BC     |
|             |            |                | ±20%                  |                        |                        | C0402JB1C101M020BC     |
|             | 0603       | 0.30±0.03      | ±10%                  |                        | C0603JB1E101K030BA     |                        |
|             |            |                | ±20%                  |                        | C0603JB1E101M030BA     |                        |
| 150 pF      | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402JB1C151K020BC     |
|             |            |                | ±20%                  |                        |                        | C0402JB1C151M020BC     |
|             | 0603       | 0.30±0.03      | ±10%                  |                        | C0603JB1E151K030BA     |                        |
|             |            |                | ±20%                  |                        | C0603JB1E151M030BA     |                        |
| 220 pF      | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402JB1C221K020BC     |
|             |            |                | ±20%                  |                        |                        | C0402JB1C221M020BC     |
|             | 0603       | 0.30±0.03      | ±10%                  |                        | C0603JB1E221K030BA     |                        |
|             |            |                | ±20%                  |                        | C0603JB1E221M030BA     |                        |
| 330 pF      | 1005       | 0.50±0.05      | ±10%                  | C1005JB1H221K050BA     |                        |                        |
|             |            |                | ±20%                  | C1005JB1H221M050BA     |                        |                        |
|             | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402JB1C331K020BC     |
|             |            |                | ±20%                  |                        |                        | C0402JB1C331M020BC     |
| 470 pF      | 0603       | 0.30±0.03      | ±10%                  |                        | C0603JB1E331K030BA     |                        |
|             |            |                | ±20%                  |                        | C0603JB1E331M030BA     |                        |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005JB1H331K050BA     |                        |                        |
|             |            |                | ±20%                  | C1005JB1H331M050BA     |                        |                        |
| 680 pF      | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402JB1C471K020BC     |
|             |            |                | ±20%                  |                        |                        | C0402JB1C471M020BC     |
|             | 0603       | 0.30±0.03      | ±10%                  |                        | C0603JB1E471K030BA     |                        |
|             |            |                | ±20%                  |                        | C0603JB1E471M030BA     |                        |
| 1 nF        | 1005       | 0.50±0.05      | ±10%                  | C1005JB1H471K050BA     |                        |                        |
|             |            |                | ±20%                  | C1005JB1H471M050BA     |                        |                        |
|             | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603JB1E681K030BA     |
|             |            |                | ±20%                  |                        |                        | C0603JB1E681M030BA     |
| 1.5 nF      | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603JB1E102K030BA     |
|             |            |                | ±20%                  |                        |                        | C0603JB1E102M030BA     |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005JB1H102K050BA     |                        |                        |
|             |            |                | ±20%                  | C1005JB1H102M050BA     |                        |                        |
| 2.2 nF      | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603JB1E152K030BA     |
|             |            |                | ±20%                  |                        |                        | C0603JB1E152M030BA     |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005JB1H152K050BA     |                        |                        |
|             |            |                | ±20%                  | C1005JB1H152M050BA     |                        |                        |
| 3.3 nF      | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603JB1E222K030BA     |
|             |            |                | ±20%                  |                        |                        | C0603JB1E222M030BA     |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005JB1H222K050BA     |                        |                        |
|             |            |                | ±20%                  | C1005JB1H222M050BA     |                        |                        |
| 4.7 nF      | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603JB1E332K030BA     |
|             |            |                | ±20%                  |                        |                        | C0603JB1E332M030BA     |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005JB1H332K050BA     |                        |                        |
|             |            |                | ±20%                  | C1005JB1H332M050BA     |                        |                        |
| 0603        | 0.30±0.03  | ±10%           |                       |                        | C0603JB1C472K030BA     |                        |
|             |            | ±20%           |                       |                        | C0603JB1C472M030BA     |                        |
| 1005        | 0.50±0.05  | ±10%           | C1005JB1H472K050BA    |                        |                        |                        |
|             |            | ±20%           | C1005JB1H472M050BA    |                        |                        |                        |

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

## MULTILAYER CERAMIC CHIP CAPACITORS


**Capacitance range table**      **Temperature characteristic: JB (-25 to +85°C, ±10%)**

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number         |                        |                        |                        |
|-------------|------------|----------------|-----------------------|------------------------|------------------------|------------------------|------------------------|
|             |            |                |                       | Rated voltage Edc: 50V | Rated voltage Edc: 35V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 6.8 nF      | 1005       | 0.50±0.05      | ±10%                  | C1005JB1H682K050BA     |                        |                        |                        |
|             |            |                | ±20%                  | C1005JB1H682M050BA     |                        |                        |                        |
| 10 nF       | 1005       | 0.50±0.05      | ±10%                  | C1005JB1H103K050BB     |                        | C1005JB1E103K050BA     |                        |
|             |            |                | ±20%                  | C1005JB1H103M050BB     |                        | C1005JB1E103M050BA     |                        |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608JB1H103K080AA     |                        |                        |                        |
|             |            |                | ±20%                  | C1608JB1H103M080AA     |                        |                        |                        |
| 15 nF       | 1005       | 0.50±0.05      | ±10%                  | C1005JB1H153K050BB     |                        | C1005JB1E153K050BA     | C1005JB1C153K050BA     |
|             |            |                | ±20%                  | C1005JB1H153M050BB     |                        | C1005JB1E153M050BA     | C1005JB1C153M050BA     |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608JB1H153K080AA     |                        |                        |                        |
|             |            |                | ±20%                  | C1608JB1H153M080AA     |                        |                        |                        |
| 22 nF       | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603JB1E223K030BB     |                        |
|             |            |                | ±20%                  |                        |                        | C0603JB1E223M030BB     |                        |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005JB1H223K050BB     |                        | C1005JB1E223K050BA     | C1005JB1C223K050BA     |
|             |            |                | ±20%                  | C1005JB1H223M050BB     |                        | C1005JB1E223M050BA     | C1005JB1C223M050BA     |
| 1608        | 0.80±0.10  | ±10%           | C1608JB1H223K080AA    |                        |                        |                        |                        |
|             |            | ±20%           | C1608JB1H223M080AA    |                        |                        |                        |                        |
| 33 nF       | 1005       | 0.50±0.05      | ±10%                  | C1005JB1H333K050BB     |                        | C1005JB1E333K050BA     | C1005JB1C333K050BA     |
|             |            |                | ±20%                  | C1005JB1H333M050BB     |                        | C1005JB1E333M050BA     | C1005JB1C333M050BA     |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608JB1H333K080AA     |                        |                        |                        |
|             |            |                | ±20%                  | C1608JB1H333M080AA     |                        |                        |                        |
| 47 nF       | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603JB1E473K030BB     |                        |
|             |            |                | ±20%                  |                        |                        | C0603JB1E473M030BB     |                        |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005JB1H473K050BB     |                        | C1005JB1E473K050BA     | C1005JB1C473K050BA     |
|             |            |                | ±20%                  | C1005JB1H473M050BB     |                        | C1005JB1E473M050BA     | C1005JB1C473M050BA     |
| 1608        | 0.80±0.10  | ±10%           | C1608JB1H473K080AA    |                        |                        |                        |                        |
|             |            | ±20%           | C1608JB1H473M080AA    |                        |                        |                        |                        |
| 68 nF       | 1005       | 0.50±0.05      | ±10%                  | C1005JB1H683K050BB     | C1005JB1V683K050BB     | C1005JB1E683K050BC     | C1005JB1C683K050BA     |
|             |            |                | ±20%                  | C1005JB1H683M050BB     | C1005JB1V683M050BB     | C1005JB1E683M050BC     | C1005JB1C683M050BA     |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608JB1H683K080AA     |                        |                        |                        |
|             |            |                | ±20%                  | C1608JB1H683M080AA     |                        |                        |                        |
| 100 nF      | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603JB1E104K030BB     | C0603JB1C104K030BC     |
|             |            |                | ±20%                  |                        |                        | C0603JB1E104M030BB     | C0603JB1C104M030BC     |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005JB1H104K050BB     | C1005JB1V104K050BB     | C1005JB1E104K050BC     | C1005JB1C104K050BA     |
|             |            |                | ±20%                  | C1005JB1H104M050BB     | C1005JB1V104M050BB     | C1005JB1E104M050BC     | C1005JB1C104M050BA     |
| 1608        | 0.80±0.10  | ±10%           | C1608JB1H104K080AA    |                        |                        |                        |                        |
|             |            | ±20%           | C1608JB1H104M080AA    |                        |                        |                        |                        |
| 150 nF      | 2012       | 0.85±0.15      | ±10%                  | C2012JB1H104K085AA     |                        |                        |                        |
|             |            |                | ±20%                  | C2012JB1H104M085AA     |                        |                        |                        |
|             | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603JB1E154K030BC     | C0603JB1C154K030BC     |
|             |            |                | ±20%                  |                        |                        | C0603JB1E154M030BC     | C0603JB1C154M030BC     |
| 1005        | 0.50±0.05  | ±10%           |                       |                        | C1005JB1E154K050BC     | C1005JB1C154K050BB     |                        |
|             |            | ±20%           |                       |                        | C1005JB1E154M050BC     | C1005JB1C154M050BB     |                        |
| 220 nF      | 1608       | 0.80±0.10      | ±10%                  | C1608JB1H154K080AB     | C1608JB1V154K080AB     | C1608JB1E154K080AA     |                        |
|             |            |                | ±20%                  | C1608JB1H154M080AB     | C1608JB1V154M080AB     | C1608JB1E154M080AA     |                        |
|             | 2012       | 0.85±0.15      | ±10%                  | C2012JB1H154K085AA     |                        |                        |                        |
|             |            |                | ±20%                  | C2012JB1H154M085AA     |                        |                        |                        |
| 330 nF      | 0603       | 0.30±0.03      | ±10%                  |                        |                        |                        | C0603JB1C224K030BC     |
|             |            |                | ±20%                  |                        |                        |                        | C0603JB1C224M030BC     |
|             | 1005       | 0.50±0.05      | ±10%                  |                        |                        | C1005JB1E224K050BC     | C1005JB1C224K050BB     |
|             |            |                | ±20%                  |                        |                        | C1005JB1E224M050BC     | C1005JB1C224M050BB     |
| 1608        | 0.80±0.10  | ±10%           | C1608JB1H224K080AB    | C1608JB1V224K080AB     | C1608JB1E224K080AA     |                        |                        |
|             |            | ±20%           | C1608JB1H224M080AB    | C1608JB1V224M080AB     | C1608JB1E224M080AA     |                        |                        |
| 330 nF      | 2012       | 1.25±0.20      | ±10%                  | C2012JB1H224K125AA     |                        |                        |                        |
|             |            |                | ±20%                  | C2012JB1H224M125AA     |                        |                        |                        |
|             | 1005       | 0.50±0.05      | ±10%                  |                        | C1005JB1V334K050BC     | C1005JB1E334K050BB     | C1005JB1C334K050BC     |
|             |            |                | ±20%                  |                        | C1005JB1V334M050BC     | C1005JB1E334M050BB     | C1005JB1C334M050BC     |
| 1608        | 0.80±0.10  | ±10%           | C1608JB1H334K080AB    | C1608JB1V334K080AB     | C1608JB1E334K080AC     | C1608JB1C334K080AA     |                        |
|             |            | ±20%           | C1608JB1H334M080AB    | C1608JB1V334M080AB     | C1608JB1E334M080AC     | C1608JB1C334M080AA     |                        |

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

# MULTILAYER CERAMIC CHIP CAPACITORS



## Capacitance range table Temperature characteristic: JB (-25 to +85°C, ±10%)

| Capacitance | Dimensions      | Thickness (mm)     | Capacitance tolerance | Catalog number         |                        |                        |                        |
|-------------|-----------------|--------------------|-----------------------|------------------------|------------------------|------------------------|------------------------|
|             |                 |                    |                       | Rated voltage Edc: 50V | Rated voltage Edc: 35V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 330 nF      | 2012            | 1.25±0.20          | ±10%                  | C2012JB1H334K125AA     |                        |                        |                        |
|             |                 |                    | ±20%                  | C2012JB1H334M125AA     |                        |                        |                        |
| 470 nF      | 1005            | 0.50±0.05          | ±10%                  |                        | C1005JB1V474K050BC     | C1005JB1E474K050BB     | C1005JB1C474K050BC     |
|             |                 |                    | ±20%                  |                        | C1005JB1V474M050BC     | C1005JB1E474M050BB     | C1005JB1C474M050BC     |
|             | 1608            | 0.80±0.10          | ±10%                  | C1608JB1H474K080AB     | C1608JB1V474K080AB     | C1608JB1E474K080AC     | C1608JB1C474K080AA     |
|             |                 |                    | ±20%                  | C1608JB1H474M080AB     | C1608JB1V474M080AB     | C1608JB1E474M080AC     | C1608JB1C474M080AA     |
| 2012        | 1.25±0.20       | ±10%               | C2012JB1H474K125AB    |                        |                        |                        |                        |
|             |                 | ±20%               | C2012JB1H474M125AB    |                        |                        |                        |                        |
| 680 nF      | 1005            | 0.50±0.05          | ±10%                  |                        | C1005JB1V684K050BC     | C1005JB1E684K050BC     | C1005JB1C684K050BC     |
|             |                 |                    | ±20%                  |                        | C1005JB1V684M050BC     | C1005JB1E684M050BC     | C1005JB1C684M050BC     |
|             | 1608            | 0.80±0.10          | ±10%                  | C1608JB1H684K080AB     | C1608JB1V684K080AB     | C1608JB1E684K080AC     | C1608JB1C684K080AA     |
|             |                 |                    | ±20%                  | C1608JB1H684M080AB     | C1608JB1V684M080AB     | C1608JB1E684M080AC     | C1608JB1C684M080AA     |
| 2012        | 1.25±0.20       | ±10%               | C2012JB1H684K125AB    |                        | C2012JB1E684K125AA     |                        |                        |
|             |                 | ±20%               | C2012JB1H684M125AB    |                        | C2012JB1E684M125AA     |                        |                        |
| 1 µF        | 1005            | 0.50±0.05          | ±10%                  |                        | C1005JB1V105K050BC     | C1005JB1E105K050BC     | C1005JB1C105K050BC     |
|             |                 |                    | ±20%                  |                        | C1005JB1V105M050BC     | C1005JB1E105M050BC     | C1005JB1C105M050BC     |
|             | 1608            | 0.80±0.10          | ±10%                  | C1608JB1H105K080AB     | C1608JB1V105K080AB     | C1608JB1E105K080AC     | C1608JB1C105K080AA     |
|             |                 |                    | ±20%                  | C1608JB1H105M080AB     | C1608JB1V105M080AB     | C1608JB1E105M080AC     | C1608JB1C105M080AA     |
| 2012        | 0.85±0.15       | ±10%               | C2012JB1H105K085AB    | C2012JB1V105K085AB     | C2012JB1E105K085AC     | C2012JB1C105K085AA     |                        |
|             |                 | ±20%               | C2012JB1H105M085AB    | C2012JB1V105M085AB     | C2012JB1E105M085AC     | C2012JB1C105M085AA     |                        |
| 3216        | 1.60±0.20       | ±10%               | C2012JB1H105K125AB    |                        | C2012JB1E105K125AA     |                        |                        |
|             |                 | ±20%               | C2012JB1H105M125AB    |                        | C2012JB1E105M125AA     |                        |                        |
|             | 0.50±0.05       | ±10%               | C3216JB1H105K160AA    |                        |                        | C1005JB1C155K050BC     |                        |
|             |                 | ±20%               | C3216JB1H105M160AA    |                        |                        | C1005JB1C155M050BC     |                        |
| 1.5 µF      | 1005            | 0.50±0.10          | ±10%                  |                        | C1005JB1E155K050BC     |                        |                        |
|             |                 |                    | ±20%                  |                        | C1005JB1E155M050BC     |                        |                        |
|             | 0.50+0.15,-0.10 | ±10%               |                       | C1005JB1V155K050BC     |                        |                        |                        |
|             |                 | ±20%               |                       | C1005JB1V155M050BC     |                        |                        |                        |
| 1608        | 0.80±0.10       | ±10%               | C1608JB1H155K080AB    | C1608JB1V155K080AC     | C1608JB1E155K080AB     | C1608JB1C155K080AB     |                        |
|             |                 | ±20%               | C1608JB1H155M080AB    | C1608JB1V155M080AC     | C1608JB1E155M080AB     | C1608JB1C155M080AB     |                        |
| 2012        | 0.85±0.15       | ±10%               |                       |                        | C2012JB1E155K085AC     |                        |                        |
|             |                 | ±20%               |                       |                        | C2012JB1E155M085AC     |                        |                        |
|             | 1.25±0.20       | ±10%               | C2012JB1H155K125AB    | C2012JB1V155K125AB     | C2012JB1E155K125AB     | C2012JB1C155K125AA     |                        |
|             |                 | ±20%               | C2012JB1H155M125AB    | C2012JB1V155M125AB     | C2012JB1E155M125AB     | C2012JB1C155M125AA     |                        |
| 3216        | 1.60±0.20       | ±10%               | C3216JB1H155K160AB    |                        | C3216JB1E155K160AA     |                        |                        |
|             |                 | ±20%               | C3216JB1H155M160AB    |                        | C3216JB1E155M160AA     |                        |                        |
| 2.2 µF      | 1005            | 0.50±0.10          | ±10%                  |                        | C1005JB1E225K050BC     |                        |                        |
|             |                 |                    | ±20%                  |                        | C1005JB1E225M050BC     |                        |                        |
|             | 0.50+0.15,-0.10 | ±10%               |                       | C1005JB1V225K050BC     |                        |                        |                        |
|             |                 | ±20%               |                       | C1005JB1V225M050BC     |                        |                        |                        |
| 1608        | 0.80±0.10       | ±10%               | C1608JB1V225K080AC    | C1608JB1E225K080AB     | C1608JB1C225K080AB     |                        |                        |
|             |                 | ±20%               | C1608JB1V225M080AC    | C1608JB1E225M080AB     | C1608JB1C225M080AB     |                        |                        |
| 2012        | 0.85±0.15       | ±10%               | C2012JB1H225K085AB    | C2012JB1V225K085AB     | C2012JB1E225K085AB     | C2012JB1C225K085AC     |                        |
|             |                 | ±20%               | C2012JB1H225M085AB    | C2012JB1V225M085AB     | C2012JB1E225M085AB     | C2012JB1C225M085AC     |                        |
|             | 1.25±0.20       | ±10%               | C2012JB1H225K125AB    | C2012JB1V225K125AB     | C2012JB1E225K125AC     | C2012JB1C225K125AA     |                        |
|             |                 | ±20%               | C2012JB1H225M125AB    | C2012JB1V225M125AB     | C2012JB1E225M125AC     | C2012JB1C225M125AA     |                        |
| 3216        | 1.60±0.20       | ±10%               | C3216JB1H225K160AB    |                        | C3216JB1E225K160AA     |                        |                        |
|             |                 | ±20%               | C3216JB1H225M160AB    |                        | C3216JB1E225M160AA     |                        |                        |
| 3225        | 2.00±0.20       | ±10%               | C3225JB1H225K200AA    |                        |                        |                        |                        |
|             |                 | ±20%               | C3225JB1H225M200AA    |                        |                        |                        |                        |
| 3.3 µF      | 1608            | 0.80±0.10          | ±10%                  |                        | C1608JB1E335K080AC     | C1608JB1C335K080AC     |                        |
|             |                 |                    | ±20%                  |                        | C1608JB1E335M080AC     | C1608JB1C335M080AC     |                        |
|             | 0.80±0.20       | ±10%               |                       | C1608JB1V335K080AC     |                        |                        |                        |
|             |                 | ±20%               |                       | C1608JB1V335M080AC     |                        |                        |                        |
| 2012        | 0.60±0.15       | ±10%               |                       |                        |                        | C2012JB1C335K060AC     |                        |
|             |                 | ±20%               |                       |                        |                        | C2012JB1C335M060AC     |                        |
|             | 0.85±0.15       | ±10%               |                       |                        | C2012JB1E335K085AC     | C2012JB1C335K085AB     |                        |
|             |                 | ±20%               |                       |                        | C2012JB1E335M085AC     | C2012JB1C335M085AB     |                        |
| 1.25±0.20   | ±10%            | C2012JB1H335K125AB | C2012JB1V335K125AC    | C2012JB1E335K125AB     | C2012JB1C335K125AC     |                        |                        |
|             | ±20%            | C2012JB1H335M125AB | C2012JB1V335M125AC    | C2012JB1E335M125AB     | C2012JB1C335M125AC     |                        |                        |
| 3216        | 1.60±0.20       | ±10%               | C3216JB1H335K160AB    | C3216JB1V335K160AB     | C3216JB1E335K160AA     |                        |                        |
|             |                 | ±20%               | C3216JB1H335M160AB    | C3216JB1V335M160AB     | C3216JB1E335M160AA     |                        |                        |

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Please note that the contents may change without any prior notice due to reasons such as upgrading.

# MULTILAYER CERAMIC CHIP CAPACITORS



## Capacitance range table      Temperature characteristic: JB (-25 to +85°C, ±10%)

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number         |                        |                        |                        |
|-------------|------------|----------------|-----------------------|------------------------|------------------------|------------------------|------------------------|
|             |            |                |                       | Rated voltage Edc: 50V | Rated voltage Edc: 35V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 3.3 μF      | 3225       | 2.50±0.30      | ±10%                  | C3225JB1H335K250AA     |                        |                        |                        |
|             |            |                | ±20%                  | C3225JB1H335M250AA     |                        |                        |                        |
|             | 1608       | 0.80±0.10      | ±10%                  |                        |                        | C1608JB1E475K080AC     | C1608JB1C475K080AC     |
|             |            |                | ±20%                  |                        |                        | C1608JB1E475M080AC     | C1608JB1C475M080AC     |
|             | 2012       | 0.85±0.15      | ±10%                  |                        | C1608JB1V475K080AC     |                        |                        |
|             |            |                | ±20%                  |                        | C1608JB1V475M080AC     |                        |                        |
| 4.7 μF      | 3225       | 2.50±0.30      | ±10%                  | C2012JB1H475K125AB     | C2012JB1V475K125AC     | C2012JB1E475K125AB     | C2012JB1C475K125AC     |
|             |            |                | ±20%                  | C2012JB1H475M125AB     | C2012JB1V475M125AC     | C2012JB1E475M125AB     | C2012JB1C475M125AC     |
|             | 3216       | 1.60±0.20      | ±10%                  | C3216JB1H475K085AB     | C3216JB1V475K085AB     | C3216JB1E475K085AB     | C3216JB1C475K085AB     |
|             |            |                | ±20%                  | C3216JB1H475M085AB     | C3216JB1V475M085AB     | C3216JB1E475M085AB     | C3216JB1C475M085AB     |
|             | 1608       | 0.80±0.20      | ±10%                  |                        |                        | C3216JB1E475K115AB     |                        |
|             |            |                | ±20%                  |                        |                        | C3216JB1E475M115AB     |                        |
| 6.8 μF      | 3225       | 2.50±0.30      | ±10%                  | C3216JB1H475K160AB     | C3216JB1V475K160AB     | C3216JB1E475K160AA     |                        |
|             |            |                | ±20%                  | C3225JB1H475M250AB     |                        |                        |                        |
|             | 1608       | 0.80±0.20      | ±10%                  |                        |                        | C1608JB1E685K080AC     | C1608JB1C685K080AB     |
|             |            |                | ±20%                  |                        |                        | C1608JB1E685M080AC     | C1608JB1C685M080AB     |
|             | 2012       | 0.85±0.15      | ±10%                  |                        |                        |                        | C2012JB1C685K085AC     |
|             |            |                | ±20%                  |                        |                        |                        | C2012JB1C685M085AC     |
| 10 μF       | 3216       | 1.60±0.20      | ±10%                  | C3216JB1H685K160AB     | C3216JB1V685K160AB     | C3216JB1E685K160AB     | C3216JB1C685K160AA     |
|             |            |                | ±20%                  | C3216JB1H685M160AB     | C3216JB1V685M160AB     | C3216JB1E685M160AB     | C3216JB1C685M160AA     |
|             | 3225       | 2.50±0.30      | ±10%                  | C3225JB1H685K250AB     |                        | C3225JB1E685K200AA     | C3225JB1C685K200AA     |
|             |            |                | ±20%                  | C3225JB1H685M250AB     |                        | C3225JB1E685M200AA     | C3225JB1C685M200AA     |
|             | 4532       | 2.50±0.30      | ±10%                  | C4532JB1H685K250KA     |                        |                        |                        |
|             |            |                | ±20%                  | C4532JB1H685M250KA     |                        |                        |                        |
| 15 μF       | 2012       | 1.25±0.20      | ±10%                  |                        | C2012JB1V106K085AC     | C2012JB1E106K085AC     | C2012JB1C106K085AC     |
|             |            |                | ±20%                  |                        | C2012JB1V106M085AC     | C2012JB1E106M085AC     | C2012JB1C106M085AC     |
|             | 3216       | 1.60±0.20      | ±10%                  |                        | C2012JB1V106K125AC     | C2012JB1E106K125AB     | C2012JB1C106K125AB     |
|             |            |                | ±20%                  |                        | C2012JB1V106M125AC     | C2012JB1E106M125AB     | C2012JB1C106M125AB     |
|             | 3216       | 1.60±0.20      | ±10%                  |                        |                        | C3216JB1E106K085AC     | C3216JB1C106K085AB     |
|             |            |                | ±20%                  |                        |                        | C3216JB1E106M085AC     | C3216JB1C106M085AB     |
| 3225        | 2.50±0.30  | ±10%           | C3216JB1H106K160AB    | C3216JB1V106K160AB     | C3216JB1E106K160AB     | C3216JB1C106K160AA     |                        |
|             |            | ±20%           | C3216JB1H106M160AB    | C3216JB1V106M160AB     | C3216JB1E106M160AB     | C3216JB1C106M160AA     |                        |
| 22 μF       | 3225       | 2.50±0.30      | ±10%                  |                        |                        |                        | C3225JB1C106K200AA     |
|             |            |                | ±20%                  |                        |                        |                        | C3225JB1C106M200AA     |
|             | 4532       | 2.50±0.30      | ±10%                  |                        |                        | C4532JB1E156M250KA     |                        |
|             |            |                | ±20%                  |                        |                        | C4532JB1E106K250KA     |                        |
|             | 3216       | 1.60±0.20      | ±10%                  |                        | C3216JB1V226M160AC     | C3216JB1E226M160AB     | C3216JB1C226M160AB     |
|             |            |                | ±20%                  |                        |                        |                        | C3225JB1C226M250AA     |
| 5750        | 2.50±0.30  | ±10%           |                       |                        |                        | C4532JB1C226M200KA     |                        |
|             |            | ±20%           |                       |                        |                        | C5750JB1E226M250KA     |                        |

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**Capacitance range table**      **Temperature characteristic: JB (-25 to +85°C, ±10%)**

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number         |                        |
|-------------|------------|----------------|-----------------------|------------------------|------------------------|
|             |            |                |                       | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 33 µF       | 3216       | 1.60±0.20      | ±20%                  | C3216JB1E336M160AC     | C3216JB1C336M160AB     |
|             | 4532       | 2.50±0.30      | ±20%                  |                        | C4532JB1C336M250KA     |

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number         |                         |                       |
|-------------|------------|----------------|-----------------------|------------------------|-------------------------|-----------------------|
|             |            |                |                       | Rated voltage Edc: 10V | Rated voltage Edc: 6.3V | Rated voltage Edc: 4V |
| 1 nF        | 0402       | 0.20±0.02      | ±10%                  | C0402JB1A102K020BC     | C0402JB0J102K020BC      | C0402JB0G102K020BC    |
|             |            |                | ±20%                  | C0402JB1A102M020BC     | C0402JB0J102M020BC      | C0402JB0G102M020BC    |
| 1.5 nF      | 0402       | 0.20±0.02      | ±10%                  | C0402JB1A152K020BC     | C0402JB0J152K020BC      | C0402JB0G152K020BC    |
|             |            |                | ±20%                  | C0402JB1A152M020BC     | C0402JB0J152M020BC      | C0402JB0G152M020BC    |
| 2.2 nF      | 0402       | 0.20±0.02      | ±10%                  | C0402JB1A222K020BC     | C0402JB0J222K020BC      | C0402JB0G222K020BC    |
|             |            |                | ±20%                  | C0402JB1A222M020BC     | C0402JB0J222M020BC      | C0402JB0G222M020BC    |
| 6.8 nF      | 0603       | 0.30±0.03      | ±10%                  | C0603JB1A682K030BA     |                         |                       |
|             |            |                | ±20%                  | C0603JB1A682M030BA     |                         |                       |
| 10 nF       | 0603       | 0.30±0.03      | ±10%                  | C0603JB1A103K030BA     |                         |                       |
|             |            |                | ±20%                  | C0603JB1A103M030BA     |                         |                       |
| 15 nF       | 0603       | 0.30±0.03      | ±10%                  | C0603JB1A153K030BC     | C0603JB0J153K030BA      |                       |
|             |            |                | ±20%                  | C0603JB1A153M030BC     | C0603JB0J153M030BA      |                       |
| 47 nF       | 1005       | 0.50±0.05      | ±10%                  | C1005JB1A473K050BA     |                         |                       |
|             |            |                | ±20%                  | C1005JB1A473M050BA     |                         |                       |
| 68 nF       | 1005       | 0.50±0.05      | ±10%                  | C1005JB1A683K050BA     |                         |                       |
|             |            |                | ±20%                  | C1005JB1A683M050BA     |                         |                       |
| 100 nF      | 0603       | 0.30±0.03      | ±10%                  | C0603JB1A104K030BC     |                         |                       |
|             |            |                | ±20%                  | C0603JB1A104M030BC     |                         |                       |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005JB1A104K050BA     |                         |                       |
|             |            |                | ±20%                  | C1005JB1A104M050BA     |                         |                       |
| 150 nF      | 0603       | 0.30±0.03      | ±10%                  | C0603JB1A154K030BB     | C0603JB0J154K030BB      |                       |
|             |            |                | ±20%                  | C0603JB1A154M030BB     | C0603JB0J154M030BB      |                       |
| 220 nF      | 0603       | 0.30±0.03      | ±10%                  | C0603JB1A224K030BB     | C0603JB0J224K030BB      |                       |
|             |            |                | ±20%                  | C0603JB1A224M030BB     | C0603JB0J224M030BB      |                       |
| 330 nF      | 0603       | 0.30±0.03      | ±20%                  |                        | C0603JB0J334M030BC      |                       |
|             |            | 0.30±0.05      | ±10%                  | C0603JB1A334K030BC     |                         |                       |
|             |            |                | ±20%                  | C0603JB1A334M030BC     |                         |                       |
| 470 nF      | 0603       | 0.30±0.03      | ±20%                  |                        | C0603JB0J474M030BC      |                       |
|             |            | 0.30±0.05      | ±20%                  | C0603JB1A474M030BC     |                         |                       |

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



**Capacitance range table**      **Temperature characteristic: JB (-25 to +85°C, ±10%)**

| Capacitance | Dimensions | Thickness (mm)  | Capacitance tolerance | Catalog number         |                         |                       |
|-------------|------------|-----------------|-----------------------|------------------------|-------------------------|-----------------------|
|             |            |                 |                       | Rated voltage Edc: 10V | Rated voltage Edc: 6.3V | Rated voltage Edc: 4V |
| 680 nF      | 1608       | 0.80±0.15,-0.10 | ±10%                  | C1608JB1A684K080AC     |                         |                       |
|             |            |                 | ±20%                  | C1608JB1A684M080AC     |                         |                       |
| 1 µF        | 1608       | 0.80±0.15,-0.10 | ±10%                  | C1608JB1A105K080AC     |                         |                       |
|             |            |                 | ±20%                  | C1608JB1A105M080AC     |                         |                       |
| 1.5 µF      | 1005       | 0.50±0.05       | ±10%                  | C1005JB1A155K050BC     | C1005JB0J155K050BB      |                       |
|             |            |                 | ±20%                  | C1005JB1A155M050BC     | C1005JB0J155M050BB      |                       |
| 2.2 µF      | 1005       | 0.50±0.05       | ±10%                  | C1005JB1A225K050BC     | C1005JB0J225K050BC      | C1005JB0G225K050BB    |
|             |            |                 | ±20%                  | C1005JB1A225M050BC     | C1005JB0J225M050BC      | C1005JB0G225M050BB    |
|             | 2012       | 0.85±0.15       | ±10%                  | C2012JB1A225K085AA     |                         |                       |
|             |            |                 | ±20%                  | C2012JB1A225M085AA     |                         |                       |
| 3.3 µF      | 1005       | 0.50±0.10       | ±10%                  | C1005JB1A335K050BC     | C1005JB0J335K050BC      | C1005JB0G335K050BB    |
|             |            |                 | ±20%                  | C1005JB1A335M050BC     | C1005JB0J335M050BC      | C1005JB0G335M050BB    |
|             | 1608       | 0.80±0.10       | ±10%                  | C1608JB1A335K080AB     |                         |                       |
|             |            |                 | ±20%                  | C1608JB1A335M080AB     |                         |                       |
| 2012        | 1.25±0.20  | ±10%            | C2012JB1A335K125AA    |                        |                         |                       |
|             |            | ±20%            | C2012JB1A335M125AA    |                        |                         |                       |
| 4.7 µF      | 1005       | 0.50±0.15,-0.10 | ±10%                  | C1005JB1A475K050BC     | C1005JB0J475K050BC      | C1005JB0G475K050BB    |
|             |            |                 | ±20%                  | C1005JB1A475M050BC     | C1005JB0J475M050BC      | C1005JB0G475M050BB    |
|             | 1608       | 0.80±0.10       | ±10%                  | C1608JB1A475K080AB     |                         |                       |
|             |            |                 | ±20%                  | C1608JB1A475M080AB     |                         |                       |
| 2012        | 0.60±0.15  | ±10%            | C2012JB1A475K060AB    |                        |                         |                       |
|             |            | ±20%            | C2012JB1A475M060AB    |                        |                         |                       |
| 6.8 µF      | 1608       | 0.80±0.10       | ±10%                  | C1608JB1A685K080AC     | C1608JB0J685K080AB      |                       |
|             |            |                 | ±20%                  | C1608JB1A685M080AC     | C1608JB0J685M080AB      |                       |
|             | 2012       | 0.60±0.15       | ±10%                  | C2012JB1A685K060AC     |                         |                       |
|             |            |                 | ±20%                  | C2012JB1A685M060AC     |                         |                       |
| 10 µF       | 1608       | 0.80±0.10       | ±10%                  | C1608JB1A106K080AC     | C1608JB0J106K080AB      |                       |
|             |            |                 | ±20%                  | C1608JB1A106M080AC     | C1608JB0J106M080AB      |                       |
|             | 3216       | 1.60±0.20       | ±10%                  | C3216JB1A106K160AA     |                         |                       |
|             |            |                 | ±20%                  | C3216JB1A106M160AA     |                         |                       |
| 15 µF       | 1608       | 0.80±0.20       | ±20%                  | C1608JB1A156M080AC     | C1608JB0J156M080AC      | C1608JB0G156M080AA    |
|             |            |                 | ±20%                  | C2012JB1A156M085AC     | C2012JB0J156M085AB      |                       |
|             | 2012       | 0.85±0.15       | ±20%                  | C2012JB1A156M125AB     | C2012JB0J156M125AC      |                       |
|             |            |                 | ±20%                  | C3225JB1A156M230AA     |                         |                       |
| 22 µF       | 1608       | 0.80±0.20       | ±20%                  | C1608JB1A226M080AC     | C1608JB0J226M080AC      | C1608JB0G226M080AA    |
|             |            |                 | ±20%                  | C2012JB1A226M085AC     | C2012JB0J226M085AB      |                       |
|             | 2012       | 0.85±0.15       | ±20%                  | C2012JB1A226M125AB     | C2012JB0J226M125AC      |                       |
|             |            |                 | ±20%                  | C3225JB1A226M250AA     |                         |                       |
| 33 µF       | 2012       | 1.25±0.20       | ±20%                  | C2012JB1A336M125AC     | C2012JB0J336M125AC      |                       |
|             |            |                 | ±20%                  | C3216JB1A336M130AC     |                         |                       |
|             | 3216       | 1.60±0.20       | ±20%                  | C3216JB1A336M160AB     |                         |                       |
|             |            |                 | ±20%                  | C2012JB1A476M125AC     | C2012JB0J476M125AC      |                       |
| 47 µF       | 3216       | 1.60±0.20       | ±20%                  | C3216JB1A476M160AB     | C3216JB0J476M160AB      |                       |
|             |            |                 | ±20%                  | C3216JB1A686M160AC     | C3216JB0J686M160AB      |                       |
| 68 µF       | 3216       | 1.60±0.30,-0.10 | ±20%                  | C3216JB1A686M160AC     | C3216JB0J686M160AB      |                       |
|             |            |                 | ±20%                  | C3225JB0J686M200AC     |                         |                       |
| 100 µF      | 3216       | 1.60±0.30,-0.10 | ±20%                  | C3216JB1A107M160AC     | C3216JB0J107M160AB      |                       |
|             |            |                 | ±20%                  | C3225JB0J107M250AC     |                         |                       |

■ Gray items: These products are not recommended for new designs.

■ Red items: The product which are planning to stop production.

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: 50V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 100 pF      | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402X5R1C101K020BC    |
|             |            |                | ±20%                  |                        |                        | C0402X5R1C101M020BC    |
|             | 0603       | 0.30±0.03      | ±10%                  |                        | C0603X5R1E101K030BA    |                        |
|             |            |                | ±20%                  |                        | C0603X5R1E101M030BA    |                        |
| 150 pF      | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402X5R1C151K020BC    |
|             |            |                | ±20%                  |                        |                        | C0402X5R1C151M020BC    |
|             | 0603       | 0.30±0.03      | ±10%                  |                        | C0603X5R1E151K030BA    |                        |
|             |            |                | ±20%                  |                        | C0603X5R1E151M030BA    |                        |
| 220 pF      | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402X5R1C221K020BC    |
|             |            |                | ±20%                  |                        |                        | C0402X5R1C221M020BC    |
|             | 0603       | 0.30±0.03      | ±10%                  |                        | C0603X5R1E221K030BA    |                        |
|             |            |                | ±20%                  |                        | C0603X5R1E221M030BA    |                        |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005X5R1H221K050BA    |                        |                        |
|             |            |                | ±20%                  | C1005X5R1H221M050BA    |                        |                        |
| 330 pF      | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402X5R1C331K020BC    |
|             |            |                | ±20%                  |                        |                        | C0402X5R1C331M020BC    |
|             | 0603       | 0.30±0.03      | ±10%                  |                        | C0603X5R1E331K030BA    |                        |
|             |            |                | ±20%                  |                        | C0603X5R1E331M030BA    |                        |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005X5R1H331K050BA    |                        |                        |
|             |            |                | ±20%                  | C1005X5R1H331M050BA    |                        |                        |
| 470 pF      | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402X5R1C471K020BC    |
|             |            |                | ±20%                  |                        |                        | C0402X5R1C471M020BC    |
|             | 0603       | 0.30±0.03      | ±10%                  |                        | C0603X5R1E471K030BA    |                        |
|             |            |                | ±20%                  |                        | C0603X5R1E471M030BA    |                        |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005X5R1H471K050BA    |                        |                        |
|             |            |                | ±20%                  | C1005X5R1H471M050BA    |                        |                        |
| 680 pF      | 0402       | 0.20±0.02      | ±10%                  |                        |                        | C0402X5R1C681K020BC    |
|             |            |                | ±20%                  |                        |                        | C0402X5R1C681M020BC    |
|             | 0603       | 0.30±0.03      | ±10%                  |                        | C0603X5R1E681K030BA    |                        |
|             |            |                | ±20%                  |                        | C0603X5R1E681M030BA    |                        |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005X5R1H681K050BA    |                        |                        |
|             |            |                | ±20%                  | C1005X5R1H681M050BA    |                        |                        |
| 1 nF        | 0603       | 0.30±0.03      | ±10%                  |                        | C0603X5R1E102K030BA    |                        |
|             |            |                | ±20%                  |                        | C0603X5R1E102M030BA    |                        |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005X5R1H102K050BA    |                        |                        |
|             |            |                | ±20%                  | C1005X5R1H102M050BA    |                        |                        |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608X5R1H102K080AA    |                        |                        |
|             |            |                |                       |                        |                        |                        |
| 1.5 nF      | 0603       | 0.30±0.03      | ±10%                  |                        | C0603X5R1E152K030BA    |                        |
|             |            |                | ±20%                  |                        | C0603X5R1E152M030BA    |                        |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005X5R1H152K050BA    |                        |                        |
|             |            |                | ±20%                  | C1005X5R1H152M050BA    |                        |                        |

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

## MULTILAYER CERAMIC CHIP CAPACITORS


**Capacitance range table**      **Temperature characteristic: X5R (-55 to +85°C, ±15%)**

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number         |                        |                        |
|-------------|------------|----------------|-----------------------|------------------------|------------------------|------------------------|
|             |            |                |                       | Rated voltage Edc: 50V | Rated voltage Edc: 35V | Rated voltage Edc: 16V |
| 2.2 nF      | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603X5R1E222K030BA    |
|             |            |                | ±20%                  |                        |                        | C0603X5R1E222M030BA    |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005X5R1H222K050BA    |                        |                        |
|             |            |                | ±20%                  | C1005X5R1H222M050BA    |                        |                        |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608X5R1H222K080AA    |                        |                        |
| 3.3 nF      | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603X5R1E332K030BA    |
|             |            |                | ±20%                  |                        |                        | C0603X5R1E332M030BA    |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005X5R1H332K050BA    |                        |                        |
|             |            |                | ±20%                  | C1005X5R1H332M050BA    |                        |                        |
| 4.7 nF      | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603X5R1C472K030BA    |
|             |            |                | ±20%                  |                        |                        | C0603X5R1C472M030BA    |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005X5R1H472K050BA    |                        |                        |
|             |            |                | ±20%                  | C1005X5R1H472M050BA    |                        |                        |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608X5R1H472K080AA    |                        |                        |
| 6.8 nF      | 1005       | 0.50±0.05      | ±10%                  | C1005X5R1H682K050BA    |                        |                        |
|             |            |                | ±20%                  | C1005X5R1H682M050BA    |                        |                        |
|             |            |                |                       | ±10%                   |                        |                        |
|             |            |                | ±20%                  |                        |                        | C0603X5R1C103M030BA    |
| 10 nF       | 0603       | 0.30±0.03      | ±10%                  |                        |                        |                        |
|             |            |                | ±20%                  |                        |                        |                        |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005X5R1H103K050BB    |                        | C1005X5R1E103K050BA    |
|             |            |                | ±20%                  | C1005X5R1H103M050BB    |                        | C1005X5R1E103M050BA    |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608X5R1H103K080AA    |                        |                        |
|             |            |                | ±20%                  | C1608X5R1H103M080AA    |                        |                        |
| 15 nF       | 1005       | 0.50±0.05      | ±10%                  | C1005X5R1H153K050BB    |                        | C1005X5R1E153K050BA    |
|             |            |                | ±20%                  | C1005X5R1H153M050BB    |                        | C1005X5R1E153M050BA    |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608X5R1H153K080AA    |                        | C1005X5R1C153M050BA    |
|             |            |                | ±20%                  | C1608X5R1H153M080AA    |                        |                        |
| 22 nF       | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603X5R1E223K030BB    |
|             |            |                | ±20%                  |                        |                        | C0603X5R1E223M030BB    |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005X5R1H223K050BB    |                        | C1005X5R1E223K050BA    |
|             |            |                | ±20%                  | C1005X5R1H223M050BB    |                        | C1005X5R1E223M050BA    |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608X5R1H223K080AA    |                        |                        |
|             |            |                | ±20%                  | C1608X5R1H223M080AA    |                        |                        |
| 33 nF       | 1005       | 0.50±0.05      | ±10%                  | C1005X5R1H333K050BB    |                        | C1005X5R1E333K050BA    |
|             |            |                | ±20%                  | C1005X5R1H333M050BB    |                        | C1005X5R1E333M050BA    |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608X5R1H333K080AA    |                        | C1005X5R1C333M050BA    |
|             |            |                | ±20%                  | C1608X5R1H333M080AA    |                        |                        |
| 47 nF       | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603X5R1E473K030BB    |
|             |            |                | ±20%                  |                        |                        | C0603X5R1E473M030BB    |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005X5R1H473K050BB    |                        | C1005X5R1E473K050BA    |
|             |            |                | ±20%                  | C1005X5R1H473M050BB    |                        | C1005X5R1E473M050BA    |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608X5R1H473K080AA    |                        | C1005X5R1C473M050BA    |
|             |            |                | ±20%                  | C1608X5R1H473M080AA    |                        |                        |
| 68 nF       | 1005       | 0.50±0.05      | ±10%                  | C1005X5R1H683K050BB    | C1005X5R1V683K050BB    | C1005X5R1E683K050BC    |
|             |            |                | ±20%                  | C1005X5R1H683M050BB    | C1005X5R1V683M050BB    | C1005X5R1E683M050BC    |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608X5R1H683K080AA    |                        | C1005X5R1C683K050BA    |
|             |            |                | ±20%                  | C1608X5R1H683M080AA    |                        | C1005X5R1C683M050BA    |
| 100 nF      | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603X5R1E104K030BB    |
|             |            |                | ±20%                  |                        |                        | C0603X5R1E104M030BB    |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005X5R1H104K050BB    | C1005X5R1V104K050BB    | C1005X5R1E104K050BC    |
|             |            |                | ±20%                  | C1005X5R1H104M050BB    | C1005X5R1V104M050BB    | C1005X5R1E104M050BC    |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608X5R1H104K080AA    |                        | C1005X5R1C104K050BA    |
|             |            |                | ±20%                  | C1608X5R1H104M080AA    |                        | C1005X5R1C104M050BA    |
|             | 2012       | 0.85±0.15      | ±10%                  | C2012X5R1H104K085AA    |                        |                        |
|             |            |                | ±20%                  | C2012X5R1H104M085AA    |                        |                        |
| 150 nF      | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603X5R1C154K030BC    |
|             |            |                | ±20%                  |                        |                        | C0603X5R1C154M030BC    |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005X5R1E154K050BC    |                        | C1005X5R1C154K050BB    |
|             |            |                | ±20%                  | C1005X5R1E154M050BC    |                        | C1005X5R1C154M050BB    |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608X5R1H154K080AB    | C1608X5R1V154K080AB    | C1608X5R1E154K080AA    |
|             |            |                | ±20%                  | C1608X5R1H154M080AB    | C1608X5R1V154M080AB    | C1608X5R1E154M080AA    |
|             | 2012       | 0.85±0.15      | ±10%                  | C2012X5R1H154K085AA    |                        |                        |
|             |            |                | ±20%                  | C2012X5R1H154M085AA    |                        |                        |

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

## MULTILAYER CERAMIC CHIP CAPACITORS


**Capacitance range table**      **Temperature characteristic: X5R (-55 to +85°C, ±15%)**

| Capacitance | Dimensions      | Thickness (mm)      | Capacitance tolerance | Catalog number         |                        |                        |                        |
|-------------|-----------------|---------------------|-----------------------|------------------------|------------------------|------------------------|------------------------|
|             |                 |                     |                       | Rated voltage Edc: 50V | Rated voltage Edc: 35V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 220 nF      | 0603            | 0.30±0.03           | ±10%                  |                        |                        |                        | C0603X5R1C224K030BC    |
|             |                 |                     | ±20%                  |                        |                        |                        | C0603X5R1C224M030BC    |
|             | 0.30±0.05       | ±10%                |                       |                        | C0603X5R1E224K030BC    |                        |                        |
|             |                 | ±20%                |                       |                        | C0603X5R1E224M030BC    |                        |                        |
|             | 1005            | 0.50±0.05           | ±10%                  |                        |                        | C1005X5R1E224K050BC    | C1005X5R1C224K050BB    |
|             |                 |                     | ±20%                  |                        |                        | C1005X5R1E224M050BC    | C1005X5R1C224M050BB    |
| 1608        | 0.80±0.10       | ±10%                | C1608X5R1H224K080AB   | C1608X5R1V224K080AB    | C1608X5R1E224K080AA    |                        |                        |
|             |                 | ±20%                | C1608X5R1H224M080AB   | C1608X5R1V224M080AB    | C1608X5R1E224M080AA    |                        |                        |
| 2012        | 1.25±0.20       | ±10%                | C2012X5R1H224K125AA   |                        |                        |                        |                        |
|             |                 | ±20%                | C2012X5R1H224M125AA   |                        |                        |                        |                        |
| 330 nF      | 1005            | 0.50±0.05           | ±10%                  |                        | C1005X5R1V334K050BC    | C1005X5R1E334K050BB    |                        |
|             |                 |                     | ±20%                  |                        | C1005X5R1V334M050BC    | C1005X5R1E334M050BB    |                        |
|             | 1608            | 0.80±0.10           | ±10%                  | C1608X5R1H334K080AB    | C1608X5R1V334K080AB    | C1608X5R1E334K080AC    | C1608X5R1C334K080AA    |
|             |                 |                     | ±20%                  | C1608X5R1H334M080AB    | C1608X5R1V334M080AB    | C1608X5R1E334M080AC    | C1608X5R1C334M080AA    |
|             | 2012            | 1.25±0.20           | ±10%                  | C2012X5R1H334K125AA    |                        |                        |                        |
|             |                 |                     | ±20%                  | C2012X5R1H334M125AA    |                        |                        |                        |
| 470 nF      | 1005            | 0.50±0.05           | ±10%                  |                        | C1005X5R1V474K050BC    | C1005X5R1E474K050BB    |                        |
|             |                 |                     | ±20%                  |                        | C1005X5R1V474M050BC    | C1005X5R1E474M050BB    |                        |
|             | 1608            | 0.80±0.10           | ±10%                  | C1608X5R1H474K080AB    | C1608X5R1V474K080AB    | C1608X5R1E474K080AC    | C1608X5R1C474K080AA    |
|             |                 |                     | ±20%                  | C1608X5R1H474M080AB    | C1608X5R1V474M080AB    | C1608X5R1E474M080AC    | C1608X5R1C474M080AA    |
|             | 2012            | 1.25±0.20           | ±10%                  | C2012X5R1H474K125AB    |                        |                        |                        |
|             |                 |                     | ±20%                  | C2012X5R1H474M125AB    |                        |                        |                        |
| 680 nF      | 1005            | 0.50±0.05           | ±10%                  |                        | C1005X5R1V684K050BC    | C1005X5R1E684K050BC    | C1005X5R1C684K050BC    |
|             |                 |                     | ±20%                  |                        | C1005X5R1V684M050BC    | C1005X5R1E684M050BC    | C1005X5R1C684M050BC    |
|             | 1608            | 0.80±0.10           | ±10%                  | C1608X5R1H684K080AB    | C1608X5R1V684K080AB    | C1608X5R1E684K080AC    | C1608X5R1C684K080AA    |
|             |                 |                     | ±20%                  | C1608X5R1H684M080AB    | C1608X5R1V684M080AB    | C1608X5R1E684M080AC    | C1608X5R1C684M080AA    |
|             | 2012            | 1.25±0.20           | ±10%                  | C2012X5R1H684K125AB    |                        | C2012X5R1E684K125AA    |                        |
|             |                 |                     | ±20%                  | C2012X5R1H684M125AB    |                        | C2012X5R1E684M125AA    |                        |
| 1 µF        | 1005            | 0.50±0.05           | ±10%                  |                        | C1005X5R1V105K050BC    | C1005X5R1E105K050BC    |                        |
|             |                 |                     | ±20%                  |                        | C1005X5R1V105M050BC    | C1005X5R1E105M050BC    |                        |
|             | 1608            | 0.80±0.10           | ±10%                  | C1608X5R1H105K080AB    | C1608X5R1V105K080AB    | C1608X5R1E105K080AC    | C1608X5R1C105K080AA    |
|             |                 |                     | ±20%                  | C1608X5R1H105M080AB    | C1608X5R1V105M080AB    | C1608X5R1E105M080AC    | C1608X5R1C105M080AA    |
|             | 2012            | 0.85±0.15           | ±10%                  | C2012X5R1H105K085AB    | C2012X5R1V105K085AB    | C2012X5R1E105K085AC    | C2012X5R1C105K085AA    |
|             |                 |                     | ±20%                  | C2012X5R1H105M085AB    | C2012X5R1V105M085AB    | C2012X5R1E105M085AC    | C2012X5R1C105M085AA    |
| 3216        | 1.60±0.20       | ±10%                | C2012X5R1H105K125AB   |                        | C2012X5R1E105K125AA    |                        |                        |
|             |                 | ±20%                | C2012X5R1H105M125AB   |                        | C2012X5R1E105M125AA    |                        |                        |
| 1.5 µF      | 1005            | 0.50±0.05           | ±10%                  |                        |                        |                        | C1005X5R1C155K050BC    |
|             |                 |                     | ±20%                  |                        |                        |                        | C1005X5R1C155M050BC    |
|             | 0.50±0.15,-0.10 | ±10%                |                       | C1005X5R1V155K050BC    |                        |                        |                        |
|             |                 | ±20%                |                       | C1005X5R1V155M050BC    |                        |                        |                        |
|             | 1608            | 0.80±0.10           | ±10%                  |                        | C1608X5R1V155K080AC    | C1608X5R1E155K080AB    | C1608X5R1C155K080AB    |
|             |                 |                     | ±20%                  |                        | C1608X5R1V155M080AC    | C1608X5R1E155M080AB    | C1608X5R1C155M080AB    |
| 2012        | 0.85±0.15       | ±10%                |                       |                        | C2012X5R1E155K085AC    |                        |                        |
|             |                 | ±20%                |                       |                        | C2012X5R1E155M085AC    |                        |                        |
| 3216        | 1.60±0.20       | ±10%                | C2012X5R1H155K125AB   | C2012X5R1V155K125AB    | C2012X5R1E155K125AA    | C2012X5R1C155K125AA    |                        |
|             |                 | ±20%                | C2012X5R1H155M125AB   | C2012X5R1V155M125AB    | C2012X5R1E155M125AA    | C2012X5R1C155M125AA    |                        |
| 2.2 µF      | 1005            | 0.50±0.05           | ±10%                  |                        |                        |                        | C1005X5R1C225K050BC    |
|             |                 |                     | ±20%                  |                        |                        |                        | C1005X5R1C225M050BC    |
|             | 0.50±0.15,-0.10 | ±10%                |                       | C1005X5R1V225K050BC    |                        |                        |                        |
|             |                 | ±20%                |                       | C1005X5R1V225M050BC    |                        |                        |                        |
|             | 1608            | 0.80±0.10           | ±10%                  |                        | C1608X5R1V225K080AC    | C1608X5R1E225K080AB    | C1608X5R1C225K080AB    |
|             |                 |                     | ±20%                  |                        | C1608X5R1V225M080AC    | C1608X5R1E225M080AB    | C1608X5R1C225M080AB    |
| 2012        | 0.85±0.15       | ±10%                | C2012X5R1H225K085AB   | C2012X5R1V225K085AB    | C2012X5R1E225K085AC    | C2012X5R1C225K085AC    |                        |
|             |                 | ±20%                | C2012X5R1H225M085AB   | C2012X5R1V225M085AB    | C2012X5R1E225M085AC    | C2012X5R1C225M085AC    |                        |
| 1.25±0.20   | ±10%            | C2012X5R1H225K125AB | C2012X5R1V225K125AB   | C2012X5R1E225K125AC    | C2012X5R1C225K125AA    |                        |                        |
|             | ±20%            | C2012X5R1H225M125AB | C2012X5R1V225M125AB   | C2012X5R1E225M125AC    | C2012X5R1C225M125AA    |                        |                        |

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

MULTILAYER CERAMIC CHIP CAPACITORS



Capacitance range table Temperature characteristic: X5R (-55 to +85°C, ±15%)

| Capacitance | Dimensions      | Thickness (mm) | Capacitance tolerance | Catalog number         |                        |                        |                        |
|-------------|-----------------|----------------|-----------------------|------------------------|------------------------|------------------------|------------------------|
|             |                 |                |                       | Rated voltage Edc: 50V | Rated voltage Edc: 35V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 2.2 µF      | 3216            | 1.60±0.20      | ±10%                  | C3216X5R1H225K160AB    |                        | C3216X5R1E225K160AA    |                        |
|             |                 |                | ±20%                  | C3216X5R1H225M160AB    |                        | C3216X5R1E225M160AA    |                        |
|             | 3225            | 2.50±0.30      | ±10%                  | C3225X5R1H225K250AB    |                        |                        |                        |
|             |                 |                | ±20%                  | C3225X5R1H225M250AB    |                        |                        |                        |
|             | 1608            | 0.80±0.10      | ±10%                  |                        |                        | C1608X5R1E335K080AC    | C1608X5R1C335K080AC    |
|             |                 |                | ±20%                  |                        |                        | C1608X5R1E335M080AC    | C1608X5R1C335M080AC    |
| 0.80±0.20   | ±10%            |                | C1608X5R1V335K080AC   |                        |                        |                        |                        |
|             | ±20%            |                | C1608X5R1V335M080AC   |                        |                        |                        |                        |
| 3.3 µF      | 1608            | 0.60±0.15      | ±10%                  |                        |                        |                        | C2012X5R1C335K060AC    |
|             |                 |                | ±20%                  |                        |                        |                        | C2012X5R1C335M060AC    |
|             | 2012            | 0.85±0.15      | ±10%                  |                        |                        | C2012X5R1E335K085AC    | C2012X5R1C335K085AB    |
|             |                 |                | ±20%                  |                        |                        | C2012X5R1E335M085AC    | C2012X5R1C335M085AB    |
|             | 1.25±0.20       | ±10%           | C2012X5R1H335K125AB   | C2012X5R1V335K125AC    | C2012X5R1E335K125AB    | C2012X5R1C335K125AC    |                        |
|             |                 | ±20%           | C2012X5R1H335M125AB   | C2012X5R1V335M125AC    | C2012X5R1E335M125AB    | C2012X5R1C335M125AC    |                        |
|             | 3216            | 1.60±0.20      | ±10%                  | C3216X5R1H335K160AB    | C3216X5R1V335K160AB    | C3216X5R1E335K160AA    |                        |
|             |                 |                | ±20%                  | C3216X5R1H335M160AB    | C3216X5R1V335M160AB    | C3216X5R1E335M160AA    |                        |
|             | 3225            | 2.50±0.30      | ±10%                  | C3225X5R1H335K250AB    |                        |                        |                        |
|             |                 |                | ±20%                  | C3225X5R1H335M250AB    |                        |                        |                        |
|             | 1608            | 0.80±0.10      | ±10%                  |                        |                        | C1608X5R1E475K080AC    | C1608X5R1C475K080AC    |
|             |                 |                | ±20%                  |                        |                        | C1608X5R1E475M080AC    | C1608X5R1C475M080AC    |
| 0.80±0.20   | ±10%            |                | C1608X5R1V475K080AC   |                        |                        |                        |                        |
|             | ±20%            |                | C1608X5R1V475M080AC   |                        |                        |                        |                        |
| 0.60±0.15   | ±10%            |                |                       |                        |                        | C2012X5R1C475K060AC    |                        |
|             | ±20%            |                |                       |                        |                        | C2012X5R1C475M060AC    |                        |
| 4.7 µF      | 2012            | 0.85±0.15      | ±10%                  |                        |                        | C2012X5R1E475K085AC    | C2012X5R1C475K085AB    |
|             |                 |                | ±20%                  |                        |                        | C2012X5R1E475M085AC    | C2012X5R1C475M085AB    |
|             | 1.25±0.20       | ±10%           | C2012X5R1H475K125AB   | C2012X5R1V475K125AC    | C2012X5R1E475K125AB    | C2012X5R1C475K125AC    |                        |
|             |                 | ±20%           | C2012X5R1H475M125AB   | C2012X5R1V475M125AC    | C2012X5R1E475M125AB    | C2012X5R1C475M125AC    |                        |
|             | 0.85±0.15       | ±10%           | C3216X5R1H475K085AB   | C3216X5R1V475K085AB    | C3216X5R1E475K085AB    |                        |                        |
|             |                 | ±20%           | C3216X5R1H475M085AB   | C3216X5R1V475M085AB    | C3216X5R1E475M085AB    |                        |                        |
|             | 3216            | 1.15±0.15      | ±10%                  |                        |                        | C3216X5R1E475K115AB    | C3216X5R1C475K115AA    |
|             |                 |                | ±20%                  |                        |                        | C3216X5R1E475M115AB    | C3216X5R1C475M115AA    |
|             | 1.60±0.20       | ±10%           | C3216X5R1H475K160AB   | C3216X5R1V475K160AB    | C3216X5R1E475K160AA    |                        |                        |
|             |                 | ±20%           | C3216X5R1H475M160AB   | C3216X5R1V475M160AB    | C3216X5R1E475M160AA    |                        |                        |
|             | 3225            | 2.50±0.30      | ±10%                  | C3225X5R1H475K250AB    |                        |                        |                        |
|             |                 |                | ±20%                  | C3225X5R1H475M250AB    |                        |                        |                        |
| 1608        | 0.80±0.20       | ±10%           |                       |                        | C1608X5R1E685K080AC    | C1608X5R1C685K080AB    |                        |
|             |                 | ±20%           |                       |                        | C1608X5R1E685M080AC    | C1608X5R1C685M080AB    |                        |
| 0.85±0.15   | ±10%            |                |                       |                        |                        | C2012X5R1C685K085AC    |                        |
|             | ±20%            |                |                       |                        |                        | C2012X5R1C685M085AC    |                        |
| 2012        | 1.25±0.20       | ±10%           |                       | C2012X5R1V685K125AC    | C2012X5R1E685K125AC    |                        |                        |
|             |                 | ±20%           |                       | C2012X5R1V685M125AC    | C2012X5R1E685M125AC    |                        |                        |
| 6.8 µF      | 3216            | 1.60±0.20      | ±10%                  | C3216X5R1H685K160AB    | C3216X5R1V685K160AB    | C3216X5R1E685K160AB    | C3216X5R1C685K160AA    |
|             |                 |                | ±20%                  | C3216X5R1H685M160AB    | C3216X5R1V685M160AB    | C3216X5R1E685M160AB    | C3216X5R1C685M160AA    |
|             | 3225            | 2.00±0.20      | ±10%                  |                        |                        |                        | C3225X5R1C685K200AA    |
|             |                 |                | ±20%                  |                        |                        |                        | C3225X5R1C685M200AA    |
|             | 2.50±0.30       | ±10%           | C3225X5R1H685K250AB   |                        | C3225X5R1E685K250AA    |                        |                        |
|             |                 | ±20%           | C3225X5R1H685M250AB   |                        | C3225X5R1E685M250AA    |                        |                        |
| 4532        | 2.50±0.30       | ±10%           | C4532X5R1H685K250KA   |                        |                        |                        |                        |
|             |                 | ±20%           | C4532X5R1H685M250KA   |                        |                        |                        |                        |
| 10 µF       | 1608            | 0.80±0.20      | ±10%                  |                        |                        | C1608X5R1E106M080AC    | C1608X5R1C106M080AB    |
|             |                 |                | ±20%                  |                        |                        | C1608X5R1E106M085AC    | C1608X5R1C106M085AB    |
|             | 2012            | 0.85±0.15      | ±10%                  |                        | C2012X5R1V106K085AC    | C2012X5R1E106K085AC    | C2012X5R1C106K085AC    |
|             |                 |                | ±20%                  |                        | C2012X5R1V106M085AC    | C2012X5R1E106M085AC    | C2012X5R1C106M085AC    |
|             | 1.25±0.20       | ±10%           |                       | C2012X5R1V106K125AC    | C2012X5R1E106K125AB    |                        |                        |
|             |                 | ±20%           |                       | C2012X5R1V106M125AC    | C2012X5R1E106M125AB    |                        |                        |
|             | 1.25±0.25,-0.15 | ±10%           | C2012X5R1H106K125AC   |                        |                        |                        |                        |
|             |                 | ±20%           |                       |                        |                        |                        |                        |
|             | 3216            | 0.85±0.15      | ±10%                  |                        |                        | C3216X5R1E106K085AC    |                        |
|             |                 |                | ±20%                  |                        |                        | C3216X5R1E106M085AC    |                        |
|             | 1.60±0.20       | ±10%           | C3216X5R1H106K160AB   | C3216X5R1V106K160AB    | C3216X5R1E106K160AB    | C3216X5R1C106K160AA    |                        |
|             |                 | ±20%           | C3216X5R1H106M160AB   | C3216X5R1V106M160AB    | C3216X5R1E106M160AB    | C3216X5R1C106M160AA    |                        |

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# MULTILAYER CERAMIC CHIP CAPACITORS



## Capacitance range table Temperature characteristic: X5R (-55 to +85°C, ±15%)

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance               | Catalog number         |                                     |                                     |                                     |
|-------------|------------|----------------|-------------------------------------|------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
|             |            |                |                                     | Rated voltage Edc: 50V | Rated voltage Edc: 35V              | Rated voltage Edc: 25V              | Rated voltage Edc: 16V              |
| 10 µF       | 3225       | 2.00±0.20      | ±10%                                |                        |                                     |                                     | C3225X5R1C106K200AA                 |
|             |            |                | ±20%                                |                        |                                     |                                     | C3225X5R1C106M200AA                 |
|             | 2.50±0.30  | ±10%           | <a href="#">C3225X5R1H106K250AB</a> |                        | <a href="#">C3225X5R1E106K250AA</a> |                                     |                                     |
|             |            | ±20%           | C3225X5R1H106M250AB                 |                        | C3225X5R1E106M250AA                 |                                     |                                     |
|             | 4532       | 2.50±0.30      | ±10%                                |                        |                                     | <a href="#">C4532X5R1E106K250KA</a> |                                     |
|             |            | ±20%           |                                     |                        | C4532X5R1E106M250KA                 |                                     |                                     |
| 15 µF       | 2012       | 1.25±0.20      | ±10%                                |                        | <a href="#">C2012X5R1V156M125AC</a> | <a href="#">C2012X5R1E156M125AC</a> | <a href="#">C2012X5R1C156M125AC</a> |
|             |            |                | ±20%                                |                        | C2012X5R1V156M125AC                 | C2012X5R1E156M125AC                 | C2012X5R1C156M125AC                 |
|             | 3216       | 1.60±0.20      | ±20%                                |                        | <a href="#">C3216X5R1V156M160AC</a> | <a href="#">C3216X5R1E156M160AB</a> | <a href="#">C3216X5R1C156M160AB</a> |
|             | 3225       | 2.50±0.30      | ±20%                                |                        |                                     |                                     | C3225X5R1C156M250AA                 |
|             | 4532       | 2.50±0.30      | ±20%                                |                        |                                     | <a href="#">C4532X5R1E156M250KA</a> |                                     |
| ±20%        |            |                |                                     |                        | <a href="#">C4532X5R1E156M280KA</a> |                                     |                                     |
| 22 µF       | 2012       | 1.25±0.20      | ±10%                                |                        |                                     |                                     | C2012X5R1C226M085AC                 |
|             |            |                | ±20%                                |                        |                                     |                                     | C2012X5R1C226K125AC                 |
|             | 3216       | 1.60±0.20      | ±20%                                |                        | <a href="#">C2012X5R1V226M125AC</a> | <a href="#">C2012X5R1E226M125AC</a> | <a href="#">C2012X5R1C226M125AC</a> |
|             |            |                | ±20%                                |                        | <a href="#">C3216X5R1V226M160AC</a> | <a href="#">C3216X5R1E226M160AB</a> | <a href="#">C3216X5R1C226M160AB</a> |
|             | 3225       | 2.50±0.30      | ±10%                                |                        |                                     |                                     | C3225X5R1C226K250AA                 |
|             |            | ±20%           |                                     |                        |                                     | C3225X5R1C226M250AA                 |                                     |
| 33 µF       | 4532       | 2.50±0.30      | ±20%                                |                        |                                     | <a href="#">C4532X5R1E226M250KA</a> |                                     |
|             |            |                | ±20%                                |                        |                                     | <a href="#">C4532X5R1E226M230KA</a> |                                     |
|             | 5750       | 2.30±0.20      | ±20%                                |                        |                                     | <a href="#">C5750X5R1E226M230KA</a> |                                     |
|             |            |                | ±20%                                |                        |                                     | <a href="#">C5750X5R1E226M250KA</a> |                                     |
|             | 3216       | 1.60±0.20      | ±20%                                |                        | <a href="#">C3216X5R1E336M160AC</a> | <a href="#">C3216X5R1C336M160AB</a> |                                     |
| 47 µF       | 5750       | 2.30±0.20      | ±20%                                |                        |                                     | <a href="#">C5750X5R1C336M200KA</a> |                                     |
|             |            |                | ±20%                                |                        | <a href="#">C3216X5R1E476M160AC</a> | <a href="#">C3216X5R1C476M160AB</a> | <a href="#">C5750X5R1C476M230KA</a> |

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number                      |                         |                       |
|-------------|------------|----------------|-----------------------|-------------------------------------|-------------------------|-----------------------|
|             |            |                |                       | Rated voltage Edc: 10V              | Rated voltage Edc: 6.3V | Rated voltage Edc: 4V |
| 1 nF        | 0402       | 0.20±0.02      | ±10%                  | <a href="#">C0402X5R1A102K020BC</a> | C0402X5R0J102K020BC     | C0402X5R0G102K020BC   |
|             |            |                | ±20%                  | C0402X5R1A102M020BC                 | C0402X5R0J102M020BC     | C0402X5R0G102M020BC   |
| 1.5 nF      | 0402       | 0.20±0.02      | ±10%                  | C0402X5R1A152K020BC                 | C0402X5R0J152K020BC     | C0402X5R0G152K020BC   |
|             |            |                | ±20%                  | C0402X5R1A152M020BC                 | C0402X5R0J152M020BC     | C0402X5R0G152M020BC   |
| 2.2 nF      | 0402       | 0.20±0.02      | ±10%                  | <a href="#">C0402X5R1A222K020BC</a> | C0402X5R0J222K020BC     | C0402X5R0G222K020BC   |
|             |            |                | ±20%                  | C0402X5R1A222M020BC                 | C0402X5R0J222M020BC     | C0402X5R0G222M020BC   |
| 6.8 nF      | 0603       | 0.30±0.03      | ±10%                  | C0603X5R1A682K030BA                 |                         |                       |
|             |            |                | ±20%                  | C0603X5R1A682M030BA                 |                         |                       |
| 10 nF       | 0603       | 0.30±0.03      | ±10%                  | C0603X5R1A103K030BA                 |                         |                       |
|             |            |                | ±20%                  | C0603X5R1A103M030BA                 |                         |                       |
| 15 nF       | 0603       | 0.30±0.03      | ±10%                  | C0603X5R1A153K030BC                 | C0603X5R0J153K030BA     |                       |
|             |            |                | ±20%                  | C0603X5R1A153M030BC                 | C0603X5R0J153M030BA     |                       |

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## MULTILAYER CERAMIC CHIP CAPACITORS


**Capacitance range table**      **Temperature characteristic: X5R (-55 to +85°C, ±15%)**

| Capacitance | Dimensions | Thickness (mm)  | Capacitance tolerance               | Catalog number                      |                                     |                       |
|-------------|------------|-----------------|-------------------------------------|-------------------------------------|-------------------------------------|-----------------------|
|             |            |                 |                                     | Rated voltage Edc: 10V              | Rated voltage Edc: 6.3V             | Rated voltage Edc: 4V |
| 47 nF       | 1005       | 0.50±0.05       | ±10%                                | C1005X5R1A473K050BA                 |                                     |                       |
|             |            |                 | ±20%                                | C1005X5R1A473M050BA                 |                                     |                       |
| 68 nF       | 1005       | 0.50±0.05       | ±10%                                | C1005X5R1A683K050BA                 |                                     |                       |
|             |            |                 | ±20%                                | C1005X5R1A683M050BA                 |                                     |                       |
| 100 nF      | 0603       | 0.30±0.03       | ±10%                                | <a href="#">C0603X5R1A104K030BC</a> |                                     |                       |
|             |            |                 | ±20%                                | C0603X5R1A104M030BC                 |                                     |                       |
|             | 1005       | 0.50±0.05       | ±10%                                | C1005X5R1A104K050BA                 | C1005X5R0J104K050BA                 |                       |
|             |            |                 | ±20%                                | C1005X5R1A104M050BA                 |                                     |                       |
| 150 nF      | 0603       | 0.30±0.03       | ±10%                                | C0603X5R1A154K030BB                 | C0603X5R0J154K030BB                 |                       |
|             |            |                 | ±20%                                | C0603X5R1A154M030BB                 | C0603X5R0J154M030BB                 |                       |
| 220 nF      | 0603       | 0.30±0.03       | ±10%                                | <a href="#">C0603X5R1A224K030BB</a> | <a href="#">C0603X5R0J224K030BB</a> |                       |
|             |            |                 | ±20%                                | C0603X5R1A224M030BB                 | C0603X5R0J224M030BB                 |                       |
| 330 nF      | 0603       | 0.30±0.03       | ±20%                                |                                     | C0603X5R0J334M030BC                 |                       |
|             |            | 0.30±0.05       | ±10%                                | C0603X5R1A334K030BC                 |                                     |                       |
|             |            |                 | ±20%                                | C0603X5R1A334M030BC                 |                                     |                       |
|             | 0603       | 0.30±0.03       | ±20%                                |                                     | <a href="#">C0603X5R0J474M030BC</a> |                       |
| 0.30±0.05   |            | ±20%            | <a href="#">C0603X5R1A474M030BC</a> |                                     |                                     |                       |
| 470 nF      | 1608       | 0.80+0.15,-0.10 | ±10%                                | C1608X5R1A474K080AA                 |                                     |                       |
|             |            |                 | ±20%                                |                                     |                                     |                       |
| 680 nF      | 1005       | 0.50±0.05       | ±10%                                | C1005X5R1A684K050BB                 | C1005X5R0J684K050BB                 |                       |
|             |            |                 | ±20%                                | C1005X5R1A684M050BB                 | C1005X5R0J684M050BB                 |                       |
|             | 1608       | 0.80+0.15,-0.10 | ±10%                                | C1608X5R1A684K080AC                 |                                     |                       |
|             |            |                 | ±20%                                | C1608X5R1A684M080AC                 |                                     |                       |
| 1 µF        | 1608       | 0.80+0.15,-0.10 | ±10%                                | C1608X5R1A105K080AC                 |                                     |                       |
|             |            |                 | ±20%                                | C1608X5R1A105M080AC                 |                                     |                       |
| 1.5 µF      | 1005       | 0.50±0.05       | ±10%                                | C1005X5R1A155K050BC                 | C1005X5R0J155K050BB                 |                       |
|             |            |                 | ±20%                                | C1005X5R1A155M050BC                 | C1005X5R0J155M050BB                 |                       |
| 2.2 µF      | 1005       | 0.50±0.05       | ±10%                                | <a href="#">C1005X5R1A225K050BC</a> | C1005X5R0J225K050BC                 | C1005X5R0G225K050BB   |
|             |            |                 | ±20%                                | C1005X5R1A225M050BC                 | C1005X5R0J225M050BC                 | C1005X5R0G225M050BB   |
|             | 2012       | 0.85±0.15       | ±10%                                | C2012X5R1A225K085AA                 | C2012X5R0J225K085AA                 |                       |
|             |            |                 | ±20%                                | C2012X5R1A225M085AA                 | C2012X5R0J225M085AA                 |                       |
| 3.3 µF      | 1005       | 0.50±0.10       | ±10%                                | C1005X5R1A335K050BC                 | C1005X5R0J335K050BC                 | C1005X5R0G335K050BB   |
|             |            |                 | ±20%                                | C1005X5R1A335M050BC                 | C1005X5R0J335M050BC                 | C1005X5R0G335M050BB   |
|             | 2012       | 1.25±0.20       | ±10%                                | C2012X5R1A335K125AA                 |                                     |                       |
|             |            |                 | ±20%                                | C2012X5R1A335M125AA                 |                                     |                       |
| 4.7 µF      | 1005       | 0.50+0.15,-0.10 | ±10%                                | <a href="#">C1005X5R1A475K050BC</a> | <a href="#">C1005X5R0J475K050BC</a> | C1005X5R0G475K050BB   |
|             |            |                 | ±20%                                | C1005X5R1A475M050BC                 | C1005X5R0J475M050BC                 | C1005X5R0G475M050BB   |

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

## MULTILAYER CERAMIC CHIP CAPACITORS


**Capacitance range table**      **Temperature characteristic: X5R (-55 to +85°C, ±15%)**

| Capacitance | Dimensions | Thickness (mm)  | Capacitance tolerance | Catalog number         |                         |                       |
|-------------|------------|-----------------|-----------------------|------------------------|-------------------------|-----------------------|
|             |            |                 |                       | Rated voltage Edc: 10V | Rated voltage Edc: 6.3V | Rated voltage Edc: 4V |
| 4.7 μF      | 2012       | 0.60±0.15       | ±10%                  | C2012X5R1A475K060AB    |                         |                       |
|             |            |                 | ±20%                  | C2012X5R1A475M060AB    |                         |                       |
|             | 1.25±0.20  | ±10%            | C2012X5R1A475K125AA   |                        |                         |                       |
|             |            | ±20%            | C2012X5R1A475M125AA   |                        |                         |                       |
| 6.8 μF      | 1608       | 0.80±0.10       | ±10%                  | C1608X5R1A685K080AC    | C1608X5R0J685K080AB     |                       |
|             |            |                 | ±20%                  | C1608X5R1A685M080AC    | C1608X5R0J685M080AB     |                       |
|             | 2012       | 0.60±0.15       | ±10%                  | C2012X5R1A685K060AC    |                         |                       |
|             |            |                 | ±20%                  | C2012X5R1A685M060AC    |                         |                       |
| 10 μF       | 1608       | 0.80±0.10       | ±10%                  | C1608X5R1A106K080AC    | C1608X5R0J106K080AB     |                       |
|             |            |                 | ±20%                  | C1608X5R1A106M080AC    | C1608X5R0J106M080AB     |                       |
|             | 2012       | 0.85±0.15       | ±10%                  | C2012X5R1A106K085AB    | C2012X5R0J106K085AB     |                       |
|             |            |                 | ±20%                  | C2012X5R1A106M085AB    | C2012X5R0J106M085AB     |                       |
| 15 μF       | 1608       | 0.80±0.20       | ±20%                  | C1608X5R1A156M080AC    | C1608X5R0J156M080AC     | C1608X5R0G156M080AA   |
|             |            |                 | ±20%                  | C2012X5R1A156M085AC    | C2012X5R0J156M085AB     |                       |
|             | 2012       | 0.85±0.15       | ±20%                  | C2012X5R1A156M125AB    | C2012X5R0J156M125AC     |                       |
|             |            |                 | ±20%                  | C3225X5R1A156M230AA    |                         |                       |
| 22 μF       | 1608       | 0.80±0.20       | ±20%                  | C1608X5R1A226M080AC    | C1608X5R0J226M080AC     | C1608X5R0G226M080AA   |
|             |            |                 | ±20%                  | C2012X5R1A226M085AC    | C2012X5R0J226M085AB     |                       |
|             | 2012       | 1.25±0.20       | ±10%                  | C2012X5R1A226K125AB    | C2012X5R0J226K125AB     |                       |
|             |            |                 | ±20%                  | C2012X5R1A226M125AB    | C2012X5R0J226M125AC     |                       |
| 33 μF       | 3216       | 0.85±0.15       | ±20%                  | C3216X5R1A226M085AC    | C3216X5R0J226M085AC     |                       |
|             |            |                 | ±20%                  | C3225X5R0J226K200AA    |                         |                       |
|             | 3225       | 2.00±0.20       | ±10%                  |                        | C3225X5R0J226K200AA     |                       |
|             |            |                 | ±20%                  | C3225X5R0J226M200AA    |                         |                       |
| 47 μF       | 4532       | 2.30±0.20       | ±20%                  | C4532X5R1A226M230KA    |                         |                       |
|             |            |                 | ±20%                  | C2012X5R1A336M125AC    | C2012X5R0J336M125AC     |                       |
|             | 2012       | 1.25±0.20       | ±20%                  | C2012X5R1A336M125AC    | C2012X5R0J336M125AC     |                       |
|             |            |                 | ±20%                  | C3216X5R1A336M160AB    | C3216X5R0J336M130AC     |                       |
| 68 μF       | 3216       | 1.60±0.20       | ±20%                  | C3216X5R1A336M200AC    | C3216X5R0J336M200AA     |                       |
|             |            |                 | ±20%                  | C3225X5R1A336M200AC    | C3225X5R0J336M200AA     |                       |
|             | 3225       | 2.50±0.30       | ±20%                  |                        | C3225X5R0J336M250AA     |                       |
|             |            |                 | ±20%                  | C4532X5R1A336M230KA    |                         |                       |
| 100 μF      | 2012       | 1.25±0.20       | ±20%                  | C2012X5R1A476M125AC    | C2012X5R0J476M125AC     | C2012X5R0G476M125AB   |
|             |            |                 | ±20%                  | C3216X5R1A476M160AB    | C3216X5R0J476M160AC     |                       |
|             | 3225       | 2.50±0.30       | ±20%                  | C3225X5R1A476M250AC    | C3225X5R0J476M250AA     |                       |
|             |            |                 | ±20%                  | C4532X5R1A476M280KA    | C4532X5R0J476M250KA     |                       |
| 150 μF      | 3216       | 1.60+0.30,-0.10 | ±20%                  | C3216X5R1A686M160AC    | C3216X5R0J686M160AB     |                       |
|             |            |                 | ±20%                  | C3225X5R0J686M200AC    |                         |                       |
|             | 4532       | 2.80±0.30       | ±20%                  |                        | C4532X5R0J686M280KA     |                       |
|             |            |                 | ±20%                  | C5750X5R1A686M230KA    |                         |                       |
| 220 μF      | 3216       | 1.60+0.30,-0.10 | ±20%                  | C3216X5R1A107M160AC    | C3216X5R0J107M160AB     | C3216X5R0G107M160AB   |
|             |            |                 | ±20%                  | C3225X5R1A107M250AC    | C3225X5R0J107M250AB     |                       |
|             | 4532       | 2.80±0.30       | ±20%                  | C4532X5R1A107M280KC    | C4532X5R0J107M280KA     |                       |
|             |            |                 | ±20%                  | C5750X5R1A107M280KC    | C5750X5R0J107M280KA     |                       |

■ Gray items: These products are not recommended for new designs.

■ Red items: The product which are planning to stop production.

Click the part numbers for details.



MULTILAYER CERAMIC CHIP CAPACITORS



Capacitance range table      Temperature characteristic: X6S (-55 to +105°C, ±22%)

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number         |                        |                        |                        |
|-------------|------------|----------------|-----------------------|------------------------|------------------------|------------------------|------------------------|
|             |            |                |                       | Rated voltage Edc: 50V | Rated voltage Edc: 35V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 2.2 nF      | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603X6S1E222K030BA    | C0603X6S1C222K030BA    |
|             |            |                | ±20%                  |                        |                        | C0603X6S1E222M030BA    | C0603X6S1C222M030BA    |
| 4.7 nF      | 0603       | 0.30±0.03      | ±10%                  |                        |                        |                        | C0603X6S1C472K030BA    |
|             |            |                | ±20%                  |                        |                        |                        | C0603X6S1C472M030BA    |
| 10 nF       | 1005       | 0.50±0.05      | ±10%                  | C1005X6S1H103K050BB    |                        |                        |                        |
|             |            |                | ±20%                  | C1005X6S1H103M050BB    |                        |                        |                        |
| 15 nF       | 1005       | 0.50±0.05      | ±10%                  | C1005X6S1H153K050BB    |                        |                        |                        |
|             |            |                | ±20%                  | C1005X6S1H153M050BB    |                        |                        |                        |
| 22 nF       | 0603       | 0.30±0.03      | ±10%                  |                        |                        |                        | C0603X6S1C223K030BC    |
|             |            |                | ±20%                  |                        |                        |                        | C0603X6S1C223M030BC    |
| 33 nF       | 1005       | 0.50±0.05      | ±10%                  | C1005X6S1H223K050BB    |                        |                        |                        |
|             |            |                | ±20%                  | C1005X6S1H223M050BB    |                        |                        |                        |
| 47 nF       | 0603       | 0.30±0.03      | ±10%                  |                        |                        |                        | C0603X6S1C473K030BC    |
|             |            |                | ±20%                  |                        |                        |                        | C0603X6S1C473M030BC    |
| 68 nF       | 1005       | 0.50±0.05      | ±10%                  | C1005X6S1H473K050BB    |                        |                        |                        |
|             |            |                | ±20%                  | C1005X6S1H473M050BB    |                        |                        |                        |
| 100 nF      | 0603       | 0.30±0.03      | ±10%                  | C1005X6S1H683K050BB    | C1005X6S1V683K050BB    | C1005X6S1E683K050BC    |                        |
|             |            |                | ±20%                  | C1005X6S1H683M050BB    | C1005X6S1V683M050BB    | C1005X6S1E683M050BC    |                        |
| 150 nF      | 1005       | 0.50±0.05      | ±10%                  |                        |                        |                        | C0603X6S1C104K030BC    |
|             |            |                | ±20%                  |                        |                        |                        | C0603X6S1C104M030BC    |
| 220 nF      | 1005       | 0.50±0.05      | ±10%                  | C1005X6S1H104K050BB    | C1005X6S1V104K050BB    | C1005X6S1E104K050BB    |                        |
|             |            |                | ±20%                  | C1005X6S1H104M050BB    | C1005X6S1V104M050BB    | C1005X6S1E104M050BB    |                        |
| 330 nF      | 1005       | 0.50±0.05      | ±10%                  |                        |                        |                        | C1005X6S1E154K050BC    |
|             |            |                | ±20%                  |                        |                        |                        | C1005X6S1E154M050BC    |
| 470 nF      | 1608       | 0.80±0.10      | ±10%                  | C1608X6S1H154K080AB    | C1608X6S1V154K080AB    |                        |                        |
|             |            |                | ±20%                  | C1608X6S1H154M080AB    | C1608X6S1V154M080AB    |                        |                        |
| 680 nF      | 1005       | 0.50±0.05      | ±10%                  |                        |                        | C1005X6S1E224K050BC    | C1005X6S1C224K050BB    |
|             |            |                | ±20%                  |                        |                        | C1005X6S1E224M050BC    | C1005X6S1C224M050BB    |
| 1 μF        | 1608       | 0.80±0.10      | ±10%                  | C1608X6S1H224K080AB    | C1608X6S1V224K080AB    |                        |                        |
|             |            |                | ±20%                  | C1608X6S1H224M080AB    | C1608X6S1V224M080AB    |                        |                        |
| 1.5 μF      | 1005       | 0.50±0.05      | ±10%                  |                        |                        |                        | C1005X6S1C334K050BC    |
|             |            |                | ±20%                  |                        |                        |                        | C1005X6S1C334M050BC    |
| 2.2 μF      | 1608       | 0.80±0.10      | ±10%                  | C1608X6S1H334K080AB    | C1608X6S1V334K080AB    | C1608X6S1E334K080AB    |                        |
|             |            |                | ±20%                  | C1608X6S1H334M080AB    | C1608X6S1V334M080AB    | C1608X6S1E334M080AB    |                        |
| 3.3 μF      | 1005       | 0.50±0.05      | ±10%                  |                        |                        |                        | C1005X6S1C474K050BC    |
|             |            |                | ±20%                  |                        |                        |                        | C1005X6S1C474M050BC    |
| 4.7 μF      | 1608       | 0.80±0.10      | ±10%                  | C1608X6S1H474K080AB    | C1608X6S1V474K080AB    | C1608X6S1E474K080AB    |                        |
|             |            |                | ±20%                  | C1608X6S1H474M080AB    | C1608X6S1V474M080AB    | C1608X6S1E474M080AB    |                        |
| 6.8 μF      | 2012       | 1.25±0.20      | ±10%                  | C2012X6S1H474K125AB    |                        |                        |                        |
|             |            |                | ±20%                  | C2012X6S1H474M125AB    |                        |                        |                        |
| 10 μF       | 1005       | 0.50±0.05      | ±10%                  |                        |                        |                        | C1005X6S1C684K050BC    |
|             |            |                | ±20%                  |                        |                        |                        | C1005X6S1C684M050BC    |
| 15 μF       | 1608       | 0.80±0.10      | ±10%                  | C1608X6S1H684K080AC    | C1608X6S1V684K080AB    | C1608X6S1E684K080AB    | C1608X6S1C684K080AC    |
|             |            |                | ±20%                  | C1608X6S1H684M080AC    | C1608X6S1V684M080AB    | C1608X6S1E684M080AB    | C1608X6S1C684M080AC    |
| 22 μF       | 2012       | 1.25±0.20      | ±10%                  | C2012X6S1H684K125AB    |                        |                        |                        |
|             |            |                | ±20%                  | C2012X6S1H684M125AB    |                        |                        |                        |
| 33 μF       | 1005       | 0.50±0.05      | ±10%                  |                        |                        |                        | C1005X6S1C105K050BC    |
|             |            |                | ±20%                  |                        |                        |                        | C1005X6S1C105M050BC    |
| 47 μF       | 1608       | 0.80±0.10      | ±10%                  | C1608X6S1H105K080AC    | C1608X6S1V105K080AB    | C1608X6S1E105K080AB    | C1608X6S1C105K080AC    |
|             |            |                | ±20%                  | C1608X6S1H105M080AC    | C1608X6S1V105M080AB    | C1608X6S1E105M080AB    | C1608X6S1C105M080AC    |
| 68 μF       | 2012       | 1.25±0.20      | ±10%                  | C2012X6S1H105K085AB    | C2012X6S1V105K085AB    | C2012X6S1E105K085AB    |                        |
|             |            |                | ±20%                  | C2012X6S1H105M085AB    | C2012X6S1V105M085AB    | C2012X6S1E105M085AB    |                        |
| 100 μF      | 1005       | 0.50±0.05      | ±10%                  | C2012X6S1H105K125AB    |                        |                        |                        |
|             |            |                | ±20%                  | C2012X6S1H105M125AB    |                        |                        |                        |
| 150 μF      | 1608       | 0.80±0.10      | ±10%                  | C2012X6S1H155K125AB    | C2012X6S1V155K125AB    | C2012X6S1E155K125AB    |                        |
|             |            |                | ±20%                  | C2012X6S1H155M125AB    | C2012X6S1V155M125AB    | C2012X6S1E155M125AB    |                        |
| 220 μF      | 3216       | 1.60±0.20      | ±10%                  | C3216X6S1H155K160AB    | C3216X6S1V155K160AB    |                        |                        |
|             |            |                | ±20%                  | C3216X6S1H155M160AB    | C3216X6S1V155M160AB    |                        |                        |

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



# MULTILAYER CERAMIC CHIP CAPACITORS



## Capacitance range table Temperature characteristic: X6S (-55 to +105°C, ±22%)

| Capacitance | Dimensions | Thickness (mm)  | Capacitance tolerance | Catalog number         |                        |                        |                        |
|-------------|------------|-----------------|-----------------------|------------------------|------------------------|------------------------|------------------------|
|             |            |                 |                       | Rated voltage Edc: 50V | Rated voltage Edc: 35V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 2.2 µF      | 1005       | 0.50+0.15,-0.10 | ±10%                  |                        |                        |                        | C1005X6S1C225K050BC    |
|             |            |                 | ±20%                  |                        |                        |                        | C1005X6S1C225M050BC    |
|             | 1608       | 0.80±0.10       | ±10%                  |                        |                        |                        | C1608X6S1C225K080AC    |
|             |            |                 | ±20%                  |                        |                        |                        | C1608X6S1C225M080AC    |
|             | 2012       | 0.85±0.15       | ±10%                  | C2012X6S1H225K085AC    | C2012X6S1V225K085AB    | C2012X6S1E225K085AB    | C2012X6S1C225K085AB    |
|             |            |                 | ±20%                  | C2012X6S1H225M085AC    | C2012X6S1V225M085AB    | C2012X6S1E225M085AB    | C2012X6S1C225M085AB    |
| 3216        | 1.60±0.20  | ±10%            | C2012X6S1H225K125AB   | C2012X6S1V225K125AB    | C2012X6S1E225K125AC    |                        |                        |
|             |            | ±20%            | C2012X6S1H225M125AB   | C2012X6S1V225M125AB    | C2012X6S1E225M125AC    |                        |                        |
| 3.3 µF      | 1608       | 0.80±0.20       | ±10%                  |                        |                        |                        | C1608X6S1C335K080AC    |
|             |            |                 | ±20%                  |                        |                        |                        | C1608X6S1C335M080AC    |
|             | 2012       | 1.25±0.20       | ±10%                  | C2012X6S1H335K125AC    | C2012X6S1V335K125AB    | C2012X6S1E335K125AC    | C2012X6S1C335K125AC    |
|             |            |                 | ±20%                  | C2012X6S1H335M125AC    | C2012X6S1V335M125AB    | C2012X6S1E335M125AC    | C2012X6S1C335M125AC    |
|             | 3216       | 1.60±0.20       | ±10%                  | C3216X6S1H335K160AB    | C3216X6S1V335K160AB    |                        |                        |
|             |            |                 | ±20%                  | C3216X6S1H335M160AB    | C3216X6S1V335M160AB    |                        |                        |
| 4.7 µF      | 1608       | 0.80±0.20       | ±10%                  |                        |                        |                        | C1608X6S1C475K080AC    |
|             |            |                 | ±20%                  |                        |                        |                        | C1608X6S1C475M080AC    |
|             | 2012       | 0.85±0.15       | ±10%                  |                        |                        |                        | C2012X6S1C475K085AC    |
|             |            |                 | ±20%                  |                        |                        |                        | C2012X6S1C475M085AC    |
|             | 3216       | 1.60±0.20       | ±10%                  | C2012X6S1H475K125AC    | C2012X6S1V475K125AB    | C2012X6S1E475K125AC    | C2012X6S1C475K125AC    |
|             |            |                 | ±20%                  | C2012X6S1H475M125AC    | C2012X6S1V475M125AB    | C2012X6S1E475M125AC    | C2012X6S1C475M125AC    |
| 6.8 µF      | 2012       | 1.25±0.20       | ±10%                  |                        |                        |                        | C2012X6S1C685K125AC    |
|             |            |                 | ±20%                  |                        |                        |                        | C2012X6S1C685M125AC    |
|             | 3216       | 1.60±0.20       | ±10%                  |                        | C3216X6S1V685K160AC    | C3216X6S1E685K160AB    | C3216X6S1C685K160AC    |
|             |            |                 | ±20%                  |                        | C3216X6S1V685M160AC    | C3216X6S1E685M160AB    | C3216X6S1C685M160AC    |
|             | 3225       | 2.50±0.30       | ±10%                  | C3225X6S1H685K250AC    | C3225X6S1V685K250AC    | C3225X6S1E685K250AB    |                        |
|             |            |                 | ±20%                  | C3225X6S1H685M250AC    | C3225X6S1V685M250AC    | C3225X6S1E685M250AB    |                        |
| 10 µF       | 2012       | 0.85±0.15       | ±10%                  |                        |                        |                        | C2012X6S1C106K085AC    |
|             |            |                 | ±20%                  |                        |                        |                        | C2012X6S1C106M085AC    |
|             | 3216       | 1.60±0.20       | ±10%                  |                        | C3216X6S1V106K160AC    | C3216X6S1E106K160AB    | C3216X6S1C106K160AB    |
|             |            |                 | ±20%                  |                        | C3216X6S1V106M160AC    | C3216X6S1E106M160AB    | C3216X6S1C106M160AB    |
|             | 3225       | 2.50±0.30       | ±10%                  | C3225X6S1H106K250AC    | C3225X6S1V106K250AC    | C3225X6S1E106K250AC    |                        |
|             |            |                 | ±20%                  | C3225X6S1H106M250AC    | C3225X6S1V106M250AC    | C3225X6S1E106M250AC    |                        |
| 15 µF       | 2012       | 1.25±0.20       | ±20%                  |                        |                        |                        | C2012X6S1C156M125AC    |
|             |            |                 |                       |                        |                        |                        | C3216X6S1C156M160AC    |
|             | 3216       | 1.60±0.20       | ±20%                  |                        |                        |                        | C2012X6S1C226M125AC    |
| 22 µF       | 3216       | 1.60±0.20       | ±20%                  |                        |                        |                        | C3216X6S1C226M160AC    |
|             |            | 1.60+0.30,-0.10 | ±20%                  |                        |                        | C3216X6S1E226M160AC    |                        |
|             | 3225       | 2.50±0.30       | ±20%                  |                        |                        |                        | C3225X6S1C226M250AC    |

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number         |                         |                       |
|-------------|------------|----------------|-----------------------|------------------------|-------------------------|-----------------------|
|             |            |                |                       | Rated voltage Edc: 10V | Rated voltage Edc: 6.3V | Rated voltage Edc: 4V |
| 100 pF      | 0402       | 0.20±0.02      | ±10%                  | C0402X6S1A101K020BC    | C0402X6S0J101K020BC     | C0402X6S0G101K020BC   |
|             |            |                | ±20%                  | C0402X6S1A101M020BC    | C0402X6S0J101M020BC     | C0402X6S0G101M020BC   |
| 150 pF      | 0402       | 0.20±0.02      | ±10%                  | C0402X6S1A151K020BC    | C0402X6S0J151K020BC     | C0402X6S0G151K020BC   |
|             |            |                | ±20%                  | C0402X6S1A151M020BC    | C0402X6S0J151M020BC     | C0402X6S0G151M020BC   |
| 220 pF      | 0402       | 0.20±0.02      | ±10%                  | C0402X6S1A221K020BC    | C0402X6S0J221K020BC     | C0402X6S0G221K020BC   |
|             |            |                | ±20%                  | C0402X6S1A221M020BC    | C0402X6S0J221M020BC     | C0402X6S0G221M020BC   |
| 330 pF      | 0402       | 0.20±0.02      | ±10%                  | C0402X6S1A331K020BC    | C0402X6S0J331K020BC     | C0402X6S0G331K020BC   |
|             |            |                | ±20%                  | C0402X6S1A331M020BC    | C0402X6S0J331M020BC     | C0402X6S0G331M020BC   |

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

## MULTILAYER CERAMIC CHIP CAPACITORS


**Capacitance range table**      **Temperature characteristic: X6S (-55 to +105°C, ±22%)**

| Capacitance | Dimensions | Thickness (mm)  | Capacitance tolerance | Catalog number         |                         |                       |
|-------------|------------|-----------------|-----------------------|------------------------|-------------------------|-----------------------|
|             |            |                 |                       | Rated voltage Edc: 10V | Rated voltage Edc: 6.3V | Rated voltage Edc: 4V |
| 470 pF      | 0402       | 0.20±0.02       | ±10%                  | C0402X6S1A471K020BC    | C0402X6S0J471K020BC     | C0402X6S0G471K020BC   |
|             |            |                 | ±20%                  | C0402X6S1A471M020BC    | C0402X6S0J471M020BC     | C0402X6S0G471M020BC   |
| 680 pF      | 0402       | 0.20±0.02       | ±10%                  | C0402X6S1A681K020BC    | C0402X6S0J681K020BC     | C0402X6S0G681K020BC   |
|             |            |                 | ±20%                  | C0402X6S1A681M020BC    | C0402X6S0J681M020BC     | C0402X6S0G681M020BC   |
| 2.2 nF      | 0603       | 0.30±0.03       | ±10%                  | C0603X6S1A222K030BA    | C0603X6S0J222K030BA     |                       |
|             |            |                 | ±20%                  | C0603X6S1A222M030BA    | C0603X6S0J222M030BA     |                       |
| 4.7 nF      | 0603       | 0.30±0.03       | ±10%                  | C0603X6S1A472K030BA    | C0603X6S0J472K030BA     |                       |
|             |            |                 | ±20%                  | C0603X6S1A472M030BA    | C0603X6S0J472M030BA     |                       |
| 10 nF       | 0603       | 0.30±0.03       | ±10%                  | C0603X6S1A103K030BA    | C0603X6S0J103K030BA     |                       |
|             |            |                 | ±20%                  | C0603X6S1A103M030BA    | C0603X6S0J103M030BA     |                       |
| 22 nF       | 0603       | 0.30±0.03       | ±10%                  | C0603X6S1A223K030BB    |                         |                       |
|             |            |                 | ±20%                  | C0603X6S1A223M030BB    |                         |                       |
| 47 nF       | 0603       | 0.30±0.03       | ±10%                  | C0603X6S1A473K030BB    |                         |                       |
|             |            |                 | ±20%                  | C0603X6S1A473M030BB    |                         |                       |
| 100 nF      | 0603       | 0.30±0.03       | ±10%                  |                        | C0603X6S0J104K030BC     |                       |
|             |            |                 | ±20%                  |                        | C0603X6S0J104M030BC     |                       |
| 150 nF      | 1005       | 0.50±0.05       | ±10%                  |                        | C1005X6S0J104K050BA     | C1005X6S0G104K050BA   |
|             |            |                 | ±20%                  |                        | C1005X6S0J104M050BA     | C1005X6S0G104M050BA   |
| 150 nF      | 0603       | 0.30±0.03       | ±10%                  |                        | C0603X6S0J154K030BC     | C0603X6S0G154K030BB   |
|             |            |                 | ±20%                  |                        | C0603X6S0J154M030BC     | C0603X6S0G154M030BB   |
| 220 nF      | 0603       | 0.30±0.05       | ±10%                  | C0603X6S1A154K030BC    |                         |                       |
|             |            |                 | ±20%                  | C0603X6S1A154M030BC    |                         |                       |
| 220 nF      | 0603       | 0.30±0.03       | ±10%                  |                        | C0603X6S0J224K030BC     | C0603X6S0G224K030BB   |
|             |            |                 | ±20%                  |                        | C0603X6S0J224M030BC     | C0603X6S0G224M030BB   |
| 330 nF      | 0603       | 0.30±0.05       | ±10%                  |                        |                         | C0603X6S0G334K030BC   |
|             |            |                 | ±20%                  |                        |                         | C0603X6S0G334M030BC   |
| 470 nF      | 1005       | 0.50±0.05       | ±10%                  | C1005X6S1A334K050BC    | C1005X6S0J334K050BC     | C1005X6S0G334K050BB   |
|             |            |                 | ±20%                  | C1005X6S1A334M050BC    | C1005X6S0J334M050BC     | C1005X6S0G334M050BB   |
| 470 nF      | 0603       | 0.30±0.05       | ±10%                  |                        |                         | C0603X6S0G474K030BC   |
|             |            |                 | ±20%                  |                        |                         | C0603X6S0G474M030BC   |
| 680 nF      | 1005       | 0.50±0.05       | ±10%                  | C1005X6S1A474K050BC    |                         | C1005X6S0G474K050BB   |
|             |            |                 | ±20%                  | C1005X6S1A474M050BC    |                         | C1005X6S0G474M050BB   |
| 680 nF      | 1005       | 0.50±0.05       | ±10%                  | C1005X6S1A684K050BC    |                         | C1005X6S0G684K050BB   |
|             |            |                 | ±20%                  | C1005X6S1A684M050BC    |                         | C1005X6S0G684M050BB   |
| 1 µF        | 1005       | 0.50±0.05       | ±10%                  | C1005X6S1A105K050BC    |                         |                       |
|             |            |                 | ±20%                  | C1005X6S1A105M050BC    |                         |                       |
| 1.5 µF      | 1608       | 0.80+0.15,-0.10 | ±10%                  | C1608X6S1A105K080AC    | C1608X6S0J105K080AC     |                       |
|             |            |                 | ±20%                  | C1608X6S1A105M080AC    | C1608X6S0J105M080AC     |                       |
| 1.5 µF      | 1005       | 0.50±0.05       | ±10%                  |                        | C1005X6S0J155K050BC     | C1005X6S0G155K050BC   |
|             |            |                 | ±20%                  |                        | C1005X6S0J155M050BC     | C1005X6S0G155M050BC   |
| 1.5 µF      | 1005       | 0.50±0.10       | ±10%                  | C1005X6S1A155K050BC    |                         |                       |
|             |            |                 | ±20%                  | C1005X6S1A155M050BC    |                         |                       |
| 2.2 µF      | 1608       | 0.80±0.10       | ±10%                  | C1608X6S1A155K080AB    | C1608X6S0J155K080AB     |                       |
|             |            |                 | ±20%                  | C1608X6S1A155M080AB    | C1608X6S0J155M080AB     |                       |
| 2.2 µF      | 1005       | 0.50±0.05       | ±10%                  |                        | C1005X6S0J225K050BC     | C1005X6S0G225K050BC   |
|             |            |                 | ±20%                  |                        | C1005X6S0J225M050BC     | C1005X6S0G225M050BC   |
| 2.2 µF      | 1005       | 0.50±0.10       | ±10%                  | C1005X6S1A225K050BC    |                         |                       |
|             |            |                 | ±20%                  | C1005X6S1A225M050BC    |                         |                       |
| 3.3 µF      | 1608       | 0.80±0.10       | ±10%                  | C1608X6S1A225K080AB    | C1608X6S0J225K080AB     |                       |
|             |            |                 | ±20%                  | C1608X6S1A225M080AB    | C1608X6S0J225M080AB     |                       |
| 3.3 µF      | 1005       | 0.50±0.10       | ±10%                  |                        |                         | C1005X6S0G335K050BC   |
|             |            |                 | ±20%                  |                        |                         | C1005X6S0G335M050BC   |
| 4.7 µF      | 1608       | 0.80±0.10       | ±10%                  | C1608X6S1A335K080AC    | C1608X6S0J335K080AC     |                       |
|             |            |                 | ±20%                  | C1608X6S1A335M080AC    | C1608X6S0J335M080AC     |                       |
| 4.7 µF      | 1005       | 0.50+0.15,-0.10 | ±10%                  |                        |                         | C1005X6S0G475M050BC   |
|             |            |                 | ±20%                  |                        |                         |                       |
| 4.7 µF      | 1608       | 0.80±0.10       | ±10%                  | C1608X6S1A475K080AC    | C1608X6S0J475K080AC     |                       |
|             |            |                 | ±20%                  | C1608X6S1A475M080AC    | C1608X6S0J475M080AC     |                       |

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

## MULTILAYER CERAMIC CHIP CAPACITORS


**Capacitance range table**      **Temperature characteristic: X6S (-55 to +105°C, ±22%)**

| Capacitance | Dimensions | Thickness (mm)  | Capacitance tolerance | Catalog number         |                         |                       |
|-------------|------------|-----------------|-----------------------|------------------------|-------------------------|-----------------------|
|             |            |                 |                       | Rated voltage Edc: 10V | Rated voltage Edc: 6.3V | Rated voltage Edc: 4V |
| 4.7 µF      | 2012       | 0.85±0.15       | ±10%                  | C2012X6S1A475K085AB    |                         |                       |
|             |            |                 | ±20%                  | C2012X6S1A475M085AB    |                         |                       |
|             |            | 1.25±0.20       | ±10%                  |                        | C2012X6S0J475K125AB     |                       |
|             | ±20%       |                 |                       | C2012X6S0J475M125AB    |                         |                       |
|             | 1608       | 0.80±0.10       | ±10%                  |                        |                         | C1608X6S0G685K080AC   |
|             |            |                 | ±20%                  |                        |                         | C1608X6S0G685M080AC   |
| 0.80±0.20   |            | ±10%            | C1608X6S1A685K080AC   | C1608X6S0J685K080AB    |                         |                       |
| 6.8 µF      | 2012       | 0.85±0.15       | ±10%                  | C2012X6S1A685K085AC    | C2012X6S0J685K085AB     |                       |
|             |            |                 | ±20%                  | C2012X6S1A685M085AC    | C2012X6S0J685M085AB     |                       |
|             |            | 1.25±0.20       | ±10%                  | C2012X6S1A685K125AB    |                         |                       |
|             | ±20%       |                 | C2012X6S1A685M125AB   |                        |                         |                       |
|             | 3216       | 0.85±0.15       | ±10%                  | C3216X6S1A685K085AB    |                         |                       |
|             |            |                 | ±20%                  | C3216X6S1A685M085AB    |                         |                       |
| 1608        |            | 0.80±0.10       | ±10%                  |                        |                         | C1608X6S0G106K080AB   |
|             | ±20%       |                 |                       |                        | C1608X6S0G106M080AC     |                       |
|             | 0.80±0.20  | ±20%            | C1608X6S1A106M080AC   | C1608X6S0J106M080AC    |                         |                       |
| 10 µF       | 2012       | 0.85±0.15       | ±10%                  | C2012X6S1A106K085AC    | C2012X6S0J106K085AC     |                       |
|             |            |                 | ±20%                  | C2012X6S1A106M085AC    | C2012X6S0J106M085AC     |                       |
|             |            | 1.25±0.20       | ±10%                  | C2012X6S1A106K125AB    | C2012X6S0J106K125AB     |                       |
|             | ±20%       |                 | C2012X6S1A106M125AB   | C2012X6S0J106M125AB    |                         |                       |
|             | 3216       | 0.85±0.15       | ±10%                  | C3216X6S1A106K085AB    |                         |                       |
|             |            |                 | ±20%                  | C3216X6S1A106M085AB    |                         |                       |
| 1.60±0.20   |            | ±10%            |                       | C3216X6S0J106K160AC    |                         |                       |
|             | ±20%       |                 | C3216X6S0J106M160AC   |                        |                         |                       |
| 15 µF       | 2012       | 0.85±0.15       | ±20%                  |                        |                         | C2012X6S0G156M085AC   |
|             |            |                 | ±20%                  | C2012X6S1A156M125AC    | C2012X6S0J156M125AB     |                       |
|             | 3216       | 1.60±0.20       | ±20%                  | C3216X6S1A156M160AB    | C3216X6S0J156M160AB     |                       |
| 22 µF       | 1608       | 0.80±0.20       | ±20%                  |                        |                         | C1608X6S0G226M080AC   |
|             |            |                 | ±20%                  |                        |                         |                       |
|             | 2012       | 0.85±0.15       | ±20%                  |                        | C2012X6S0J226M085AC     | C2012X6S0G226M085AC   |
| ±20%        |            |                 | C2012X6S1A226M125AC   | C2012X6S0J226M125AB    | C2012X6S0G226M125AC     |                       |
| 3216        | 1.60±0.20  | ±20%            | C3216X6S1A226M160AB   | C3216X6S0J226M160AB    |                         |                       |
|             |            | ±20%            |                       |                        |                         |                       |
| 33 µF       | 2012       | 1.25±0.20       | ±20%                  |                        |                         | C2012X6S0G336M125AC   |
|             |            |                 | ±20%                  | C3216X6S1A336M160AC    | C3216X6S0J336M160AB     |                       |
| 47 µF       | 2012       | 1.25±0.20       | ±20%                  |                        |                         | C2012X6S0G476M125AC   |
|             |            |                 | ±20%                  | C3216X6S1A476M160AC    | C3216X6S0J476M160AB     | C3216X6S0G476M160AC   |
|             | 3225       | 2.50±0.30       | ±20%                  |                        | C3225X6S0J476M250AC     |                       |
| 68 µF       | 3216       | 1.60+0.30,-0.10 | ±20%                  |                        |                         | C3216X6S0G686M160AC   |
|             |            |                 | ±20%                  |                        |                         | C3216X6S0G107M160AC   |
| 100 µF      | 3225       | 2.50+0.40,-0.30 | ±20%                  | C3225X6S1A107M250AC    | C3225X6S0J107M250AB     | C3225X6S0G107M250AC   |
|             |            |                 | ±20%                  |                        |                         |                       |
|             | 4532       | 2.80±0.30       | ±20%                  | C4532X6S0J107M280KC    |                         |                       |

■ Gray items: These products are not recommended for new designs.

■ Red items: The product which are planning to stop production.

Click the part numbers for details.

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

| Capacitance | Dimensions | Thickness (mm) | Capacitance tolerance | Catalog number         |                        |
|-------------|------------|----------------|-----------------------|------------------------|------------------------|
|             |            |                |                       | Rated voltage Edc: 50V | Rated voltage Edc: 25V |
| 100 pF      | 0603       | 0.30±0.03      | ±10%                  |                        | C0603X7R1E101K030BA    |
|             |            |                | ±20%                  |                        | C0603X7R1E101M030BA    |
| 150 pF      | 0603       | 0.30±0.03      | ±10%                  |                        | C0603X7R1E151K030BA    |
|             |            |                | ±20%                  |                        | C0603X7R1E151M030BA    |
| 220 pF      | 0603       | 0.30±0.03      | ±10%                  |                        | C0603X7R1E221K030BA    |
|             |            |                | ±20%                  |                        | C0603X7R1E221M030BA    |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005X7R1H221K050BA    |                        |
|             |            |                | ±20%                  | C1005X7R1H221M050BA    |                        |
| 330 pF      | 0603       | 0.30±0.03      | ±10%                  |                        | C0603X7R1E331K030BA    |
|             |            |                | ±20%                  |                        | C0603X7R1E331M030BA    |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005X7R1H331K050BA    |                        |
|             |            |                | ±20%                  | C1005X7R1H331M050BA    |                        |
| 470 pF      | 0603       | 0.30±0.03      | ±10%                  |                        | C0603X7R1E471K030BA    |
|             |            |                | ±20%                  |                        | C0603X7R1E471M030BA    |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005X7R1H471K050BA    |                        |
|             |            |                | ±20%                  | C1005X7R1H471M050BA    |                        |

■ Gray items: These products are not recommended for new designs.

Click the part 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.

## 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: 50V | Rated voltage Edc: 35V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 680 pF      | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603X7R1E681K030BA    |                        |
|             |            |                | ±20%                  |                        |                        | C0603X7R1E681M030BA    |                        |
|             | 1005       | 0.50±0.05      | ±10%                  | C1005X7R1H681K050BA    |                        |                        |                        |
|             |            |                | ±20%                  | C1005X7R1H681M050BA    |                        |                        |                        |
| 1 nF        | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603X7R1E102K030BA    |                        |
|             |            |                | ±20%                  |                        |                        | C0603X7R1E102M030BA    |                        |
|             |            |                | ±10%                  | C1005X7R1H102K050BA    |                        | C1005X7R1E102K050BA    |                        |
|             | 1005       | 0.50±0.05      | ±20%                  | C1005X7R1H102M050BA    |                        |                        |                        |
|             |            |                | ±10%                  | C1608X7R1H102K080AA    |                        |                        |                        |
| 1.5 nF      | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603X7R1E152K030BA    |                        |
|             |            |                | ±20%                  |                        |                        | C0603X7R1E152M030BA    |                        |
|             |            |                | ±10%                  | C1005X7R1H152K050BA    |                        |                        |                        |
|             | 1005       | 0.50±0.05      | ±20%                  | C1005X7R1H152M050BA    |                        |                        |                        |
|             |            |                | ±10%                  |                        |                        | C0603X7R1E222K030BA    | C0603X7R1C222K030BA    |
| 2.2 nF      | 0603       | 0.30±0.03      | ±20%                  |                        |                        | C0603X7R1E222M030BA    | C0603X7R1C222M030BA    |
|             |            |                | ±10%                  | C1005X7R1H222K050BA    |                        |                        |                        |
|             |            |                | ±20%                  | C1005X7R1H222M050BA    |                        |                        |                        |
|             | 1005       | 0.50±0.05      | ±10%                  | C1608X7R1H222K080AA    |                        |                        |                        |
|             |            |                | ±10%                  |                        |                        |                        |                        |
| 3.3 nF      | 0603       | 0.30±0.03      | ±10%                  |                        |                        | C0603X7R1E332K030BA    |                        |
|             |            |                | ±20%                  |                        |                        | C0603X7R1E332M030BA    |                        |
|             |            |                | ±10%                  | C1005X7R1H332K050BA    |                        |                        |                        |
|             | 1005       | 0.50±0.05      | ±20%                  | C1005X7R1H332M050BA    |                        |                        |                        |
|             |            |                | ±10%                  |                        |                        |                        | C0603X7R1C472K030BA    |
| 4.7 nF      | 0603       | 0.30±0.03      | ±20%                  |                        |                        |                        | C0603X7R1C472M030BA    |
|             |            |                | ±10%                  | C1005X7R1H472K050BA    |                        |                        |                        |
|             |            |                | ±20%                  | C1005X7R1H472M050BA    |                        |                        |                        |
|             | 1005       | 0.50±0.05      | ±10%                  | C1608X7R1H472K080AA    |                        |                        |                        |
|             |            |                | ±10%                  |                        |                        |                        |                        |
| 6.8 nF      | 1005       | 0.50±0.05      | ±10%                  | C1005X7R1H682K050BA    |                        |                        |                        |
|             |            |                | ±20%                  | C1005X7R1H682M050BA    |                        |                        |                        |
|             |            |                | ±10%                  |                        |                        |                        |                        |
| 10 nF       | 1005       | 0.50±0.05      | ±10%                  | C1005X7R1H103K050BB    | C1005X7R1V103K050BB    | C1005X7R1E103K050BB    | C1005X7R1C103K050BA    |
|             |            |                | ±20%                  | C1005X7R1H103M050BB    | C1005X7R1V103M050BB    | C1005X7R1E103M050BB    |                        |
|             |            |                | ±10%                  | C1608X7R1H103K080AA    |                        | C1608X7R1E103K080AA    |                        |
|             | 1608       | 0.80±0.10      | ±20%                  | C1608X7R1H103M080AA    |                        |                        |                        |
|             |            |                | ±10%                  | C1005X7R1H153K050BB    | C1005X7R1V153K050BB    |                        |                        |
| 15 nF       | 1005       | 0.50±0.05      | ±20%                  | C1005X7R1H153M050BB    | C1005X7R1V153M050BB    |                        |                        |
|             |            |                | ±10%                  | C1608X7R1H153K080AA    |                        |                        |                        |
|             |            |                | ±20%                  | C1608X7R1H153M080AA    |                        |                        |                        |
| 22 nF       | 1005       | 0.50±0.05      | ±10%                  | C1005X7R1H223K050BB    | C1005X7R1V223K050BB    | C1005X7R1E223K050BB    |                        |
|             |            |                | ±20%                  | C1005X7R1H223M050BB    | C1005X7R1V223M050BB    | C1005X7R1E223M050BB    |                        |
|             |            |                | ±10%                  | C1608X7R1H223K080AA    |                        |                        |                        |
|             | 1608       | 0.80±0.10      | ±20%                  | C1608X7R1H223M080AA    |                        |                        |                        |
|             |            |                | ±10%                  | C1005X7R1H333K050BB    | C1005X7R1V333K050BB    |                        |                        |
| 33 nF       | 1005       | 0.50±0.05      | ±20%                  | C1005X7R1H333M050BB    | C1005X7R1V333M050BB    |                        |                        |
|             |            |                | ±10%                  | C1608X7R1H333K080AA    |                        |                        |                        |
|             |            |                | ±20%                  | C1608X7R1H333M080AA    |                        |                        |                        |
| 47 nF       | 1005       | 0.50±0.05      | ±10%                  | C1005X7R1H473K050BB    | C1005X7R1V473K050BB    | C1005X7R1E473K050BC    | C1005X7R1C473K050BC    |
|             |            |                | ±20%                  | C1005X7R1H473M050BB    | C1005X7R1V473M050BB    | C1005X7R1E473M050BC    | C1005X7R1C473M050BC    |
|             |            |                | ±10%                  | C1608X7R1H473K080AA    |                        |                        |                        |
|             | 1608       | 0.80±0.10      | ±20%                  | C1608X7R1H473M080AA    |                        |                        |                        |
|             |            |                | ±10%                  | C1005X7R1H683K050BB    | C1005X7R1V683K050BB    | C1005X7R1E683K050BB    | C1005X7R1C683K050BC    |
| 68 nF       | 1005       | 0.50±0.05      | ±20%                  | C1005X7R1H683M050BB    | C1005X7R1V683M050BB    | C1005X7R1E683M050BB    | C1005X7R1C683M050BC    |
|             |            |                | ±10%                  | C1608X7R1H683K080AA    |                        |                        |                        |
|             |            |                | ±20%                  | C1608X7R1H683M080AA    |                        |                        |                        |
| 100 nF      | 1005       | 0.50±0.05      | ±10%                  | C1005X7R1H104K050BB    | C1005X7R1V104K050BB    | C1005X7R1E104K050BB    | C1005X7R1C104K050BC    |
|             |            |                | ±20%                  | C1005X7R1H104M050BB    | C1005X7R1V104M050BB    | C1005X7R1E104M050BB    | C1005X7R1C104M050BC    |
|             |            |                | ±10%                  | C1608X7R1H104K080AA    |                        | C1608X7R1E104K080AA    |                        |
|             | 1608       | 0.80±0.10      | ±20%                  | C1608X7R1H104M080AA    |                        | C1608X7R1E104M080AA    |                        |
|             |            |                | ±10%                  | C2012X7R1H104K085AA    |                        |                        |                        |
| 150 nF      | 2012       | 0.85±0.15      | ±20%                  | C2012X7R1H104M085AA    |                        |                        |                        |
|             |            |                | ±10%                  |                        | C1005X7R1V154K050BC    | C1005X7R1E154K050BB    | C1005X7R1C154K050BC    |
|             |            |                | ±20%                  |                        | C1005X7R1V154M050BC    | C1005X7R1E154M050BB    | C1005X7R1C154M050BC    |
| 150 nF      | 1005       | 0.50±0.05      | ±10%                  | C1608X7R1H154K080AB    | C1608X7R1V154K080AB    | C1608X7R1E154K080AA    |                        |
|             |            |                | ±20%                  | C1608X7R1H154M080AB    | C1608X7R1V154M080AB    | C1608X7R1E154M080AA    |                        |
|             |            |                | ±10%                  | C2012X7R1H154K085AA    |                        |                        |                        |
|             | 2012       | 0.85±0.15      | ±20%                  | C2012X7R1H154M085AA    |                        |                        |                        |

■ 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: 50V | Rated voltage Edc: 35V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 150 nF      | 2012       | 1.25±0.20      | ±10%                  | C2012X7R1H154K125AA    |                        |                        |                        |
|             |            |                | ±20%                  | C2012X7R1H154M125AA    |                        |                        |                        |
| 220 nF      | 1005       | 0.50±0.05      | ±10%                  |                        | C1005X7R1V224K050BC    | C1005X7R1E224K050BB    | C1005X7R1C224K050BC    |
|             |            |                | ±20%                  |                        | C1005X7R1V224M050BC    | C1005X7R1E224M050BB    | C1005X7R1C224M050BC    |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608X7R1H224K080AB    | C1608X7R1V224K080AB    | C1608X7R1E224K080AC    | C1608X7R1C224K080AC    |
|             |            |                | ±20%                  | C1608X7R1H224M080AB    | C1608X7R1V224M080AB    | C1608X7R1E224M080AC    | C1608X7R1C224M080AC    |
| 2012        | 1.25±0.20  | ±10%           | C2012X7R1H224K125AA   |                        |                        |                        |                        |
|             |            | ±20%           | C2012X7R1H224M125AA   |                        |                        |                        |                        |
| 330 nF      | 3216       | 1.15±0.15      | ±10%                  | C3216X7R1H224K115AA    |                        |                        |                        |
|             |            |                | ±20%                  | C3216X7R1H224M115AA    |                        |                        |                        |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608X7R1H334K080AC    | C1608X7R1V334K080AB    | C1608X7R1E334K080AC    | C1608X7R1C334K080AC    |
|             |            |                | ±20%                  | C1608X7R1H334M080AC    | C1608X7R1V334M080AB    | C1608X7R1E334M080AC    | C1608X7R1C334M080AC    |
| 2012        | 1.25±0.20  | ±10%           | C2012X7R1H334K125AA   |                        |                        |                        |                        |
|             |            | ±20%           | C2012X7R1H334M125AA   |                        |                        |                        |                        |
| 470 nF      | 3216       | 1.60±0.20      | ±10%                  | C3216X7R1H334K160AA    |                        |                        |                        |
|             |            |                | ±20%                  | C3216X7R1H334M160AA    |                        |                        |                        |
|             | 1608       | 0.80±0.10      | ±10%                  | C1608X7R1H474K080AC    | C1608X7R1V474K080AB    | C1608X7R1E474K080AB    | C1608X7R1C474K080AC    |
|             |            |                | ±20%                  | C1608X7R1H474M080AC    | C1608X7R1V474M080AB    | C1608X7R1E474M080AB    | C1608X7R1C474M080AC    |
| 2012        | 1.25±0.20  | ±10%           | C2012X7R1H474K125AB   | C2012X7R1V474K125AB    | C2012X7R1E474K125AA    |                        |                        |
|             |            | ±20%           | C2012X7R1H474M125AB   | C2012X7R1V474M125AB    | C2012X7R1E474M125AA    |                        |                        |
| 680 nF      | 3216       | 1.60±0.20      | ±10%                  | C3216X7R1H474K160AA    |                        |                        |                        |
|             |            |                | ±20%                  | C3216X7R1H474M160AA    |                        |                        |                        |
|             | 1608       | 0.80±0.10      | ±10%                  |                        | C1608X7R1V684K080AC    | C1608X7R1E684K080AB    | C1608X7R1C684K080AC    |
|             |            |                | ±20%                  |                        | C1608X7R1V684M080AC    | C1608X7R1E684M080AB    | C1608X7R1C684M080AC    |
| 2012        | 1.25±0.20  | ±10%           | C2012X7R1H684K125AB   | C2012X7R1V684K125AB    | C2012X7R1E684K125AB    | C2012X7R1C684K125AA    |                        |
|             |            | ±20%           | C2012X7R1H684M125AB   | C2012X7R1V684M125AB    | C2012X7R1E684M125AB    | C2012X7R1C684M125AA    |                        |
| 1 µF        | 3216       | 1.60±0.20      | ±10%                  |                        |                        |                        |                        |
|             |            |                | ±20%                  |                        |                        |                        |                        |
|             | 1608       | 0.80±0.10      | ±10%                  |                        | C1608X7R1V105K080AC    | C1608X7R1E105K080AB    | C1608X7R1C105K080AC    |
|             |            |                | ±20%                  |                        | C1608X7R1V105M080AC    | C1608X7R1E105M080AB    | C1608X7R1C105M080AC    |
| 2012        | 0.85±0.15  | ±10%           | C2012X7R1H105K085AC   | C2012X7R1V105K085AB    | C2012X7R1E105K085AB    | C2012X7R1C105K085AC    |                        |
|             |            | ±20%           | C2012X7R1H105M085AC   | C2012X7R1V105M085AB    | C2012X7R1E105M085AB    | C2012X7R1C105M085AC    |                        |
| 1.5 µF      | 3216       | 1.60±0.20      | ±10%                  | C2012X7R1H105K125AB    | C2012X7R1V105K125AB    | C2012X7R1E105K125AB    | C2012X7R1C105K125AA    |
|             |            |                | ±20%                  | C2012X7R1H105M125AB    | C2012X7R1V105M125AB    | C2012X7R1E105M125AB    | C2012X7R1C105M125AA    |
|             | 3216       | 1.60±0.20      | ±10%                  |                        |                        |                        |                        |
|             |            |                | ±20%                  |                        |                        |                        |                        |
| 2.2 µF      | 3216       | 1.60±0.20      | ±10%                  | C3216X7R1H155K160AB    | C3216X7R1V155K160AB    | C3216X7R1E155K160AA    |                        |
|             |            |                | ±20%                  | C3216X7R1H155M160AB    | C3216X7R1V155M160AB    | C3216X7R1E155M160AA    |                        |
|             | 3225       | 2.00±0.20      | ±10%                  | C3225X7R1H155K200AA    |                        |                        |                        |
|             |            |                | ±20%                  | C3225X7R1H155M200AA    |                        |                        |                        |
| 2.2 µF      | 2012       | 0.85±0.15      | ±10%                  |                        | C2012X7R1V225K085AC    | C2012X7R1E225K085AB    | C2012X7R1C225K085AB    |
|             |            |                | ±20%                  |                        | C2012X7R1V225M085AC    | C2012X7R1E225M085AB    | C2012X7R1C225M085AB    |
|             | 3216       | 1.60±0.20      | ±10%                  | C2012X7R1H225K125AC    | C2012X7R1V225K125AB    | C2012X7R1E225K125AB    | C2012X7R1C225K125AB    |
|             |            |                | ±20%                  | C2012X7R1H225M125AC    | C2012X7R1V225M125AB    | C2012X7R1E225M125AB    | C2012X7R1C225M125AB    |
| 4532        | 3216       | 1.60±0.20      | ±10%                  | C3216X7R1H225K160AB    | C3216X7R1V225K160AB    | C3216X7R1E225K160AA    |                        |
|             |            |                | ±20%                  | C3216X7R1H225M160AB    | C3216X7R1V225M160AB    | C3216X7R1E225M160AA    |                        |
|             | 3225       | 2.00±0.20      | ±10%                  | C3225X7R1H225K200AB    |                        |                        |                        |
|             |            |                | ±20%                  | C3225X7R1H225M200AB    |                        |                        |                        |
| 4532        | 1.60±0.20  | ±10%           | C4532X7R1H225K160KA   |                        |                        |                        |                        |
|             |            | ±20%           | C4532X7R1H225M160KA   |                        |                        |                        |                        |

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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: 75V | Rated voltage Edc: 50V | Rated voltage Edc: 35V | Rated voltage Edc: 25V | Rated voltage Edc: 16V |
| 3.3 µF      | 2012       | 1.25±0.20      | ±10%                  |                        |                        | C2012X7R1V335K125AC    | C2012X7R1E335K125AB    | C2012X7R1C335K125AB    |
|             |            |                | ±20%                  |                        |                        | C2012X7R1V335M125AC    | C2012X7R1E335M125AB    | C2012X7R1C335M125AB    |
|             | 3216       | 1.60±0.20      | ±10%                  |                        | C3216X7R1H335K160AC    | C3216X7R1V335K160AB    | C3216X7R1E335K160AC    |                        |
|             |            |                | ±20%                  |                        | C3216X7R1H335M160AC    | C3216X7R1V335M160AB    | C3216X7R1E335M160AC    |                        |
|             | 3225       | 1.60±0.20      | ±10%                  |                        |                        |                        | C3225X7R1E335K160AA    |                        |
|             |            |                | ±20%                  |                        |                        |                        | C3225X7R1E335M160AA    |                        |
|             |            | 2.50±0.30      | ±10%                  |                        | C3225X7R1H335K250AB    |                        |                        |                        |
|             |            |                | ±20%                  |                        | C3225X7R1H335M250AB    |                        |                        |                        |
| 4.7 µF      | 2012       | 1.25±0.20      | ±10%                  |                        | C2012X7R1H475K125AC    | C2012X7R1V475K125AC    | C2012X7R1E475K125AB    | C2012X7R1C475K125AB    |
|             |            |                | ±20%                  |                        |                        | C2012X7R1V475M125AC    | C2012X7R1E475M125AB    | C2012X7R1C475M125AB    |
|             | 3216       | 0.85±0.15      | ±10%                  |                        |                        | C3216X7R1V475K085AC    | C3216X7R1E475K085AB    | C3216X7R1C475K085AB    |
|             |            |                | ±20%                  |                        |                        | C3216X7R1V475M085AC    | C3216X7R1E475M085AB    | C3216X7R1C475M085AB    |
|             | 3225       | 1.60±0.20      | ±10%                  |                        | C3216X7R1H475K160AC    | C3216X7R1V475K160AB    | C3216X7R1E475K160AC    | C3216X7R1C475K160AB    |
|             |            |                | ±20%                  |                        | C3216X7R1H475M160AC    | C3216X7R1V475M160AB    | C3216X7R1E475M160AC    | C3216X7R1C475M160AB    |
|             |            | 2.00±0.20      | ±10%                  |                        |                        | C3225X7R1E475K200AA    |                        |                        |
|             |            |                | ±20%                  |                        |                        | C3225X7R1E475M200AA    |                        |                        |
| 6.8 µF      | 3225       | 2.50±0.30      | ±10%                  |                        | C3225X7R1H475K250AB    |                        |                        |                        |
|             |            |                | ±20%                  |                        | C3225X7R1H475M250AB    |                        |                        |                        |
|             | 4532       | 2.00±0.20      | ±10%                  |                        | C4532X7R1H475K200KB    |                        |                        |                        |
|             |            |                | ±20%                  |                        | C4532X7R1H475M200KB    |                        | C4532X7R1E475M200KA    |                        |
|             | 5750       | 2.00±0.20      | ±10%                  |                        | C5750X7R1H475K200KA    |                        |                        |                        |
|             |            |                | ±20%                  |                        | C5750X7R1H475M200KA    |                        |                        |                        |
|             |            | 2.80±0.30      | ±10%                  |                        | C5750X7R1H475M280KA    |                        |                        |                        |
|             |            |                | ±20%                  |                        |                        |                        |                        |                        |
| 10 µF       | 3216       | 1.60±0.20      | ±10%                  |                        | C3216X7R1V685K160AC    | C3216X7R1E685K160AB    | C3216X7R1C685K160AC    |                        |
|             |            |                | ±20%                  |                        | C3216X7R1V685M160AC    | C3216X7R1E685M160AB    | C3216X7R1C685M160AC    |                        |
|             | 3225       | 2.50±0.30      | ±10%                  |                        |                        |                        | C3225X7R1E685K250AB    |                        |
|             |            |                | ±20%                  |                        |                        |                        | C3225X7R1E685M250AB    |                        |
|             | 4532       | 2.50±0.30      | ±10%                  |                        | C4532X7R1H685K250KB    |                        |                        |                        |
|             |            |                | ±20%                  |                        | C4532X7R1H685M250KB    |                        |                        |                        |
| 5750        | 2.50±0.30  | ±10%           |                       | C5750X7R1H685K250KA    |                        |                        |                        |                        |
|             |            | ±20%           |                       | C5750X7R1H685M250KA    |                        |                        |                        |                        |
| 15 µF       | 3216       | 1.60±0.20      | ±10%                  |                        | C3216X7R1V106K160AC    | C3216X7R1E106K160AB    | C3216X7R1C106K160AC    |                        |
|             |            |                | ±20%                  |                        | C3216X7R1V106M160AC    | C3216X7R1E106M160AB    | C3216X7R1C106M160AC    |                        |
|             | 3225       | 2.00±0.20      | ±10%                  |                        |                        |                        | C3225X7R1C106K200AB    |                        |
|             |            |                | ±20%                  |                        |                        |                        | C3225X7R1C106M200AB    |                        |
|             | 3225       | 2.50±0.30      | ±10%                  |                        | C3225X7R1N106K250AC    | C3225X7R1H106K250AC    | C3225X7R1E106K250AC    |                        |
|             |            |                | ±20%                  |                        | C3225X7R1N106M250AC    | C3225X7R1H106M250AC    | C3225X7R1E106M250AC    |                        |
| 4532        | 2.30±0.20  | ±10%           |                       |                        |                        | C4532X7R1C106K230KA    |                        |                        |
|             |            | ±20%           |                       |                        |                        | C4532X7R1C106M230KA    |                        |                        |
| 22 µF       | 4532       | 2.50±0.30      | ±10%                  |                        |                        | C4532X7R1E106K250KA    |                        |                        |
|             |            |                | ±20%                  |                        |                        | C4532X7R1E106M250KA    |                        |                        |
|             | 5750       | 2.00±0.20      | ±10%                  |                        | C5750X7R1H106K230KB    |                        |                        |                        |
|             |            |                | ±20%                  |                        | C5750X7R1H106M230KB    |                        |                        |                        |
|             | 3225       | 2.50±0.30      | ±10%                  |                        |                        |                        | C3225X7R1C156M250AB    |                        |
|             |            |                | ±20%                  |                        |                        |                        |                        |                        |
| 4532        | 2.50±0.30  | ±10%           |                       |                        |                        | C4532X7R1E156M250KC    |                        |                        |
|             |            | ±20%           |                       |                        |                        | C4532X7R1E156M280KB    |                        |                        |
| 5750        | 2.30±0.20  | ±10%           |                       |                        |                        | C5750X7R1E156M230KA    |                        |                        |
|             |            | ±20%           |                       |                        |                        |                        |                        |                        |
| 33 µF       | 3225       | 2.50±0.30      | ±10%                  |                        |                        |                        | C3225X7R1C226K250AC    |                        |
|             |            |                | ±20%                  |                        |                        |                        | C3225X7R1E226M250AB    |                        |
|             | 4532       | 2.00±0.20      | ±10%                  |                        |                        |                        | C4532X7R1C226M200KC    |                        |
|             |            |                | ±20%                  |                        |                        |                        | C4532X7R1C226M230KB    |                        |
|             | 4532       | 2.30±0.20      | ±10%                  |                        |                        |                        | C4532X7R1E226M250KC    |                        |
|             |            |                | ±20%                  |                        |                        |                        | C4532X7R1E226M250KA    |                        |
| 5750        | 2.50±0.30  | ±10%           |                       | C5750X7R1H226M250KB    |                        |                        |                        |                        |
|             |            | ±20%           |                       |                        |                        |                        |                        |                        |
| 4532        | 2.50±0.30  | ±10%           |                       |                        |                        | C5750X7R1C226M280KA    |                        |                        |
|             |            | ±20%           |                       |                        |                        | C4532X7R1C336M250KC    |                        |                        |
| 5750        | 2.00±0.20  | ±10%           |                       |                        |                        | C5750X7R1C336M200KB    |                        |                        |
|             |            | ±20%           |                       |                        |                        |                        |                        |                        |
| 47 µF       | 5750       | 2.30±0.20      | ±10%                  |                        | C5750X7R1V476M230KC    | C5750X7R1E476M230KB    | C5750X7R1C476M230KB    |                        |
|             |            |                | ±20%                  |                        |                        |                        |                        |                        |

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



## 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: 10V     | Rated voltage Edc: 6.3V    | Rated voltage Edc: 4V |
| 100 pF      | 0402       | 0.20±0.02       | ±10%                  | C0402X7R1A101K020BC        | C0402X7R0J101K020BC        | C0402X7R0G101K020BC   |
|             |            |                 | ±20%                  | C0402X7R1A101M020BC        | C0402X7R0J101M020BC        | C0402X7R0G101M020BC   |
| 150 pF      | 0402       | 0.20±0.02       | ±10%                  | C0402X7R1A151K020BC        | C0402X7R0J151K020BC        | C0402X7R0G151K020BC   |
|             |            |                 | ±20%                  | C0402X7R1A151M020BC        | C0402X7R0J151M020BC        | C0402X7R0G151M020BC   |
| 220 pF      | 0402       | 0.20±0.02       | ±10%                  | C0402X7R1A221K020BC        | C0402X7R0J221K020BC        | C0402X7R0G221K020BC   |
|             |            |                 | ±20%                  | C0402X7R1A221M020BC        | C0402X7R0J221M020BC        | C0402X7R0G221M020BC   |
| 330 pF      | 0402       | 0.20±0.02       | ±10%                  | C0402X7R1A331K020BC        | C0402X7R0J331K020BC        | C0402X7R0G331K020BC   |
|             |            |                 | ±20%                  | C0402X7R1A331M020BC        | C0402X7R0J331M020BC        | C0402X7R0G331M020BC   |
| 470 pF      | 0402       | 0.20±0.02       | ±10%                  | C0402X7R1A471K020BC        | C0402X7R0J471K020BC        | C0402X7R0G471K020BC   |
|             |            |                 | ±20%                  | C0402X7R1A471M020BC        | C0402X7R0J471M020BC        | C0402X7R0G471M020BC   |
| 680 pF      | 0402       | 0.20±0.02       | ±10%                  | C0402X7R1A681K020BC        | C0402X7R0J681K020BC        | C0402X7R0G681K020BC   |
|             |            |                 | ±20%                  | C0402X7R1A681M020BC        | C0402X7R0J681M020BC        | C0402X7R0G681M020BC   |
| 1 nF        | 0402       | 0.20±0.02       | ±10%                  | <b>C0402X7R1A102K020BC</b> |                            |                       |
|             |            |                 | ±20%                  | C0402X7R1A102M020BC        |                            |                       |
| 1.5 nF      | 0402       | 0.20±0.02       | ±10%                  | C0402X7R1A152K020BC        |                            |                       |
|             |            |                 | ±20%                  | C0402X7R1A152M020BC        |                            |                       |
| 2.2 nF      | 0603       | 0.30±0.03       | ±10%                  | C0603X7R1A222K030BA        | C0603X7R0J222K030BA        |                       |
|             |            |                 | ±20%                  | C0603X7R1A222M030BA        | C0603X7R0J222M030BA        |                       |
| 4.7 nF      | 0603       | 0.30±0.03       | ±10%                  | C0603X7R1A472K030BA        | C0603X7R0J472K030BA        |                       |
|             |            |                 | ±20%                  | C0603X7R1A472M030BA        | C0603X7R0J472M030BA        |                       |
| 10 nF       | 0603       | 0.30±0.03       | ±10%                  | <b>C0603X7R1A103K030BA</b> | C0603X7R0J103K030BA        |                       |
|             |            |                 | ±20%                  | C0603X7R1A103M030BA        | C0603X7R0J103M030BC        |                       |
| 100 nF      | 1005       | 0.50±0.05       | ±10%                  | C1005X7R1A104K050BB        |                            |                       |
|             |            |                 | ±20%                  | C1005X7R1A104M050BB        |                            |                       |
| 150 nF      | 1005       | 0.50±0.05       | ±10%                  | C1005X7R1A154K050BB        |                            |                       |
|             |            |                 | ±20%                  | C1005X7R1A154M050BB        |                            |                       |
| 220 nF      | 1005       | 0.50±0.05       | ±10%                  | <b>C1005X7R1A224K050BB</b> |                            |                       |
|             |            |                 | ±20%                  | C1005X7R1A224M050BB        |                            |                       |
| 680 nF      | 1608       | 0.80+0.15,-0.10 | ±10%                  | C1608X7R1A684K080AC        |                            |                       |
|             |            |                 | ±20%                  | C1608X7R1A684M080AC        |                            |                       |
| 1 µF        | 1608       | 0.80+0.15,-0.10 | ±10%                  | C1608X7R1A105K080AC        |                            |                       |
|             |            |                 | ±20%                  | C1608X7R1A105M080AC        |                            |                       |
| 1.5 µF      | 1608       | 0.80±0.10       | ±10%                  | C1608X7R1A155K080AC        | C1608X7R0J155K080AB        |                       |
|             |            |                 | ±20%                  | C1608X7R1A155M080AC        | C1608X7R0J155M080AB        |                       |
| 2.2 µF      | 1608       | 0.80±0.10       | ±10%                  | <b>C1608X7R1A225K080AC</b> | C1608X7R0J225K080AB        |                       |
|             |            |                 | ±20%                  | C1608X7R1A225M080AC        | C1608X7R0J225M080AB        |                       |
| 3.3 µF      | 2012       | 1.25±0.20       | ±10%                  | C2012X7R1A335K125AC        |                            |                       |
|             |            |                 | ±20%                  | C2012X7R1A335M125AC        |                            |                       |
| 4.7 µF      | 2012       | 0.85±0.15       | ±10%                  | C2012X7R1A475K085AC        | C2012X7R0J475K085AB        |                       |
|             |            |                 | ±20%                  | C2012X7R1A475M085AC        | C2012X7R0J475M085AB        |                       |
|             |            | 1.25±0.20       | ±10%                  | <b>C2012X7R1A475K125AC</b> |                            |                       |
|             |            |                 | ±20%                  | C2012X7R1A475M125AC        |                            |                       |
| 6.8 µF      | 2012       | 1.25±0.20       | ±10%                  | C2012X7R1A685K125AC        | C2012X7R0J685K125AB        |                       |
|             |            |                 | ±20%                  | C2012X7R1A685M125AC        | C2012X7R0J685M125AB        |                       |
| 10 µF       | 2012       | 1.25±0.20       | ±10%                  | <b>C2012X7R1A106K125AC</b> | <b>C2012X7R0J106K125AB</b> |                       |
|             |            |                 | ±20%                  | C2012X7R1A106M125AC        | C2012X7R0J106M125AB        |                       |
|             | 0.85±0.15  | ±10%            | C3216X7R1A106K085AC   | C3216X7R0J106K085AB        |                            |                       |
|             |            | ±20%            | C3216X7R1A106M085AC   | C3216X7R0J106M085AB        |                            |                       |
| 3216        | 1.60±0.20  | ±10%            | C3216X7R1A106K160AC   |                            |                            |                       |
|             |            | ±20%            | C3216X7R1A106M160AC   |                            |                            |                       |
| 22 µF       | 3225       | 2.30±0.20       | ±10%                  | C3225X7R1A226K230AC        |                            |                       |
|             |            |                 | ±20%                  | C3225X7R1A226M230AC        |                            |                       |

■ Gray items: These products are not recommended for new designs.  
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: 50V | Rated voltage Edc: 25V              | Rated voltage Edc: 16V              |  |
| 330 nF      | 1005       | 0.50±0.05      | ±10%                  |                        |                                     | C1005X7S1C334K050BC                 |  |
|             |            |                | ±20%                  |                        |                                     | C1005X7S1C334M050BC                 |  |
| 470 nF      | 1005       | 0.50±0.05      | ±10%                  |                        |                                     | <a href="#">C1005X7S1C474K050BC</a> |  |
|             |            |                | ±20%                  |                        |                                     | C1005X7S1C474M050BC                 |  |
| 1.5 µF      | 1608       | 0.80±0.10      | ±10%                  |                        |                                     | C1608X7S1C155K080AC                 |  |
|             |            |                | ±20%                  |                        |                                     | C1608X7S1C155M080AC                 |  |
| 2.2 µF      | 1608       | 0.80±0.10      | ±10%                  |                        |                                     | <a href="#">C1608X7S1C225K080AC</a> |  |
|             |            |                | ±20%                  |                        |                                     | C1608X7S1C225M080AC                 |  |
| 6.8 µF      | 2012       | 1.25±0.20      | ±10%                  |                        |                                     | C2012X7S1C685K125AC                 |  |
|             |            |                | ±20%                  |                        |                                     | C2012X7S1C685M125AC                 |  |
|             | 3225       | 2.50±0.30      | ±10%                  | C3225X7S1H685K250AB    |                                     |                                     |  |
|             |            |                | ±20%                  | C3225X7S1H685M250AB    |                                     |                                     |  |
| 10 µF       | 2012       | 1.25±0.20      | ±10%                  |                        | <a href="#">C2012X7S1E106K125AC</a> | <a href="#">C2012X7S1C106K125AC</a> |  |
|             |            |                | ±20%                  |                        |                                     | C2012X7S1C106M125AC                 |  |
|             | 3225       | 2.50±0.30      | ±10%                  | C3225X7S1H106K250AB    |                                     |                                     |  |
|             |            |                | ±20%                  | C3225X7S1H106M250AB    |                                     |                                     |  |

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



## MULTILAYER CERAMIC CHIP CAPACITORS


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

| Capacitance | Dimensions | Thickness (mm)  | Capacitance tolerance | Catalog number                      |                                     |                                     |
|-------------|------------|-----------------|-----------------------|-------------------------------------|-------------------------------------|-------------------------------------|
|             |            |                 |                       | Rated voltage Edc: 10V              | Rated voltage Edc: 6.3V             | Rated voltage Edc: 4V               |
| 22 nF       | 0603       | 0.30±0.03       | ±10%                  | <a href="#">C0603X7S1A223K030BC</a> | C0603X7S0J223K030BB                 |                                     |
|             |            |                 | ±20%                  | C0603X7S1A223M030BC                 | C0603X7S0J223M030BB                 |                                     |
| 47 nF       | 0603       | 0.30±0.03       | ±10%                  | <a href="#">C0603X7S1A473K030BC</a> | C0603X7S0J473K030BB                 |                                     |
|             |            |                 | ±20%                  | C0603X7S1A473M030BC                 | C0603X7S0J473M030BB                 |                                     |
| 100 nF      | 0603       | 0.30±0.03       | ±10%                  | <a href="#">C0603X7S1A104K030BC</a> |                                     | C0603X7S0G104K030BC                 |
|             |            |                 | ±20%                  | C0603X7S1A104M030BC                 |                                     | C0603X7S0G104M030BC                 |
| 150 nF      | 0603       | 0.30±0.05       | ±10%                  |                                     | C0603X7S0J154K030BC                 |                                     |
|             |            |                 | ±20%                  |                                     | C0603X7S0J154M030BC                 |                                     |
| 220 nF      | 0603       | 0.30±0.03       | ±10%                  |                                     |                                     | <a href="#">C0603X7S0G224K030BC</a> |
|             |            |                 | ±20%                  |                                     |                                     | C0603X7S0G224M030BC                 |
|             |            | 0.30±0.05       | ±10%                  |                                     | <a href="#">C0603X7S0J224K030BC</a> |                                     |
|             |            |                 | ±20%                  |                                     | C0603X7S0J224M030BC                 |                                     |
| 330 nF      | 1005       | 0.50±0.05       | ±10%                  | C1005X7S1A334K050BC                 | C1005X7S0J334K050BC                 |                                     |
|             |            |                 | ±20%                  | C1005X7S1A334M050BC                 | C1005X7S0J334M050BC                 |                                     |
| 470 nF      | 1005       | 0.50±0.05       | ±10%                  | <a href="#">C1005X7S1A474K050BC</a> | C1005X7S0J474K050BB                 |                                     |
|             |            |                 | ±20%                  | C1005X7S1A474M050BC                 | C1005X7S0J474M050BB                 |                                     |
| 680 nF      | 1005       | 0.50±0.05       | ±10%                  | C1005X7S1A684K050BC                 | C1005X7S0J684K050BC                 | C1005X7S0G684K050BC                 |
|             |            |                 | ±20%                  | C1005X7S1A684M050BC                 | C1005X7S0J684M050BC                 | C1005X7S0G684M050BC                 |
| 1 µF        | 1005       | 0.50±0.05       | ±10%                  | <a href="#">C1005X7S1A105K050BC</a> | <a href="#">C1005X7S0J105K050BC</a> | C1005X7S0G105K050BC                 |
|             |            |                 | ±20%                  | C1005X7S1A105M050BC                 | C1005X7S0J105M050BC                 | C1005X7S0G105M050BC                 |
|             |            | 0.50±0.05       | ±10%                  |                                     |                                     | C1005X7S0G155K050BC                 |
|             |            |                 | ±20%                  |                                     |                                     | C1005X7S0G155M050BC                 |
| 1.5 µF      | 1005       | 0.50±0.10       | ±10%                  |                                     | C1005X7S0J155K050BC                 |                                     |
|             |            |                 | ±20%                  |                                     | C1005X7S0J155M050BC                 |                                     |
|             |            | 0.50+0.15,-0.10 | ±10%                  | C1005X7S1A155K050BC                 |                                     |                                     |
|             |            |                 | ±20%                  | C1005X7S1A155M050BC                 |                                     |                                     |
|             |            | 0.50±0.05       | ±10%                  |                                     |                                     | <a href="#">C1005X7S0G225K050BC</a> |
|             |            |                 | ±20%                  |                                     |                                     | C1005X7S0G225M050BC                 |
| 2.2 µF      | 1005       | 0.50±0.10       | ±10%                  |                                     | <a href="#">C1005X7S0J225K050BC</a> |                                     |
|             |            |                 | ±20%                  |                                     | C1005X7S0J225M050BC                 |                                     |
|             |            | 0.50+0.15,-0.10 | ±10%                  | <a href="#">C1005X7S1A225K050BC</a> |                                     |                                     |
|             |            |                 | ±20%                  | C1005X7S1A225M050BC                 |                                     |                                     |
|             | 1608       | 0.80±0.10       | ±10%                  | <a href="#">C1608X7S1A225K080AC</a> | C1608X7S0J225K080AB                 |                                     |
|             |            |                 | ±20%                  | C1608X7S1A225M080AC                 | C1608X7S0J225M080AB                 |                                     |
| 3.3 µF      | 1608       | 0.80±0.10       | ±10%                  |                                     | C1608X7S0J335K080AC                 | C1608X7S0G335K080AC                 |
|             |            |                 | ±20%                  |                                     | C1608X7S0J335M080AC                 | C1608X7S0G335M080AC                 |
|             |            | 0.80±0.20       | ±10%                  | C1608X7S1A335K080AC                 |                                     |                                     |
|             |            |                 | ±20%                  | C1608X7S1A335M080AC                 |                                     |                                     |
| 4.7 µF      | 1608       | 0.80±0.10       | ±10%                  |                                     | C1608X7S0J475K080AC                 | C1608X7S0G475K080AC                 |
|             |            |                 | ±20%                  |                                     | C1608X7S0J475M080AC                 | C1608X7S0G475M080AC                 |
|             |            | 0.80±0.20       | ±10%                  | <a href="#">C1608X7S1A475K080AC</a> |                                     |                                     |
|             |            |                 | ±20%                  | C1608X7S1A475M080AC                 |                                     |                                     |
| 6.8 µF      | 1608       | 0.80±0.20       | ±10%                  |                                     | C1608X7S0J685K080AC                 | C1608X7S0G685K080AB                 |
|             |            |                 | ±20%                  |                                     | C1608X7S0J685M080AC                 | C1608X7S0G685M080AB                 |
|             |            | 0.80±0.20       | ±20%                  |                                     | <a href="#">C1608X7S0J106M080AC</a> | C1608X7S0G106M080AB                 |
|             |            |                 |                       |                                     |                                     |                                     |
| 10 µF       | 2012       | 0.85±0.15       | ±10%                  |                                     | C2012X7S0J106K085AC                 | C2012X7S0G106K085AC                 |
|             |            |                 | ±20%                  |                                     | C2012X7S0J106M085AC                 | C2012X7S0G106M085AC                 |
| 15 µF       | 2012       | 1.25±0.20       | ±20%                  | <a href="#">C2012X7S1A156M125AC</a> | <a href="#">C2012X7S0J156M125AC</a> | C2012X7S0G156M125AC                 |
|             |            |                 |                       |                                     |                                     |                                     |
| 22 µF       | 3216       | 1.60±0.20       | ±20%                  | <a href="#">C3216X7S1A156M160AC</a> | C3216X7S0J156M160AB                 |                                     |
|             |            |                 |                       |                                     |                                     |                                     |
| 22 µF       | 2012       | 1.25±0.20       | ±20%                  | <a href="#">C2012X7S1A226M125AC</a> | <a href="#">C2012X7S0J226M125AC</a> | <a href="#">C2012X7S0G226M125AC</a> |
|             |            |                 |                       |                                     |                                     |                                     |
| 33 µF       | 3216       | 1.60±0.20       | ±20%                  | <a href="#">C3216X7S1A226M160AC</a> | <a href="#">C3216X7S0J226M160AB</a> |                                     |
|             |            |                 |                       |                                     |                                     |                                     |
| 33 µF       | 3216       | 1.60±0.20       | ±20%                  |                                     | <a href="#">C3216X7S0J336M160AC</a> | <a href="#">C3216X7S0G336M160AB</a> |
|             |            |                 |                       |                                     |                                     |                                     |
| 47 µF       | 3216       | 1.60±0.20       | ±20%                  |                                     | <a href="#">C3216X7S0J476M160AC</a> | <a href="#">C3216X7S0G476M160AB</a> |
|             |            |                 |                       |                                     |                                     |                                     |
|             | 3225       | 2.50±0.30       | ±20%                  | <a href="#">C3225X7S1A476M250AC</a> | C3225X7S0J476M250AC                 |                                     |

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

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

| Capacitance | Dimensions | Thickness (mm)  | Capacitance tolerance | Catalog number                      |                                     |
|-------------|------------|-----------------|-----------------------|-------------------------------------|-------------------------------------|
|             |            |                 |                       | Rated voltage Edc: 10V              | Rated voltage Edc: 6.3V             |
| 100µF       | 3225       | 2.50+0.40,-0.30 | ±20%                  | <a href="#">C3225X7T1A107M250AC</a> | <a href="#">C3225X7T0J107M250AB</a> |

■ Gray items: These products are not recommended for new designs.  
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Please note that the contents may change without any prior notice due to reasons such as upgrading.