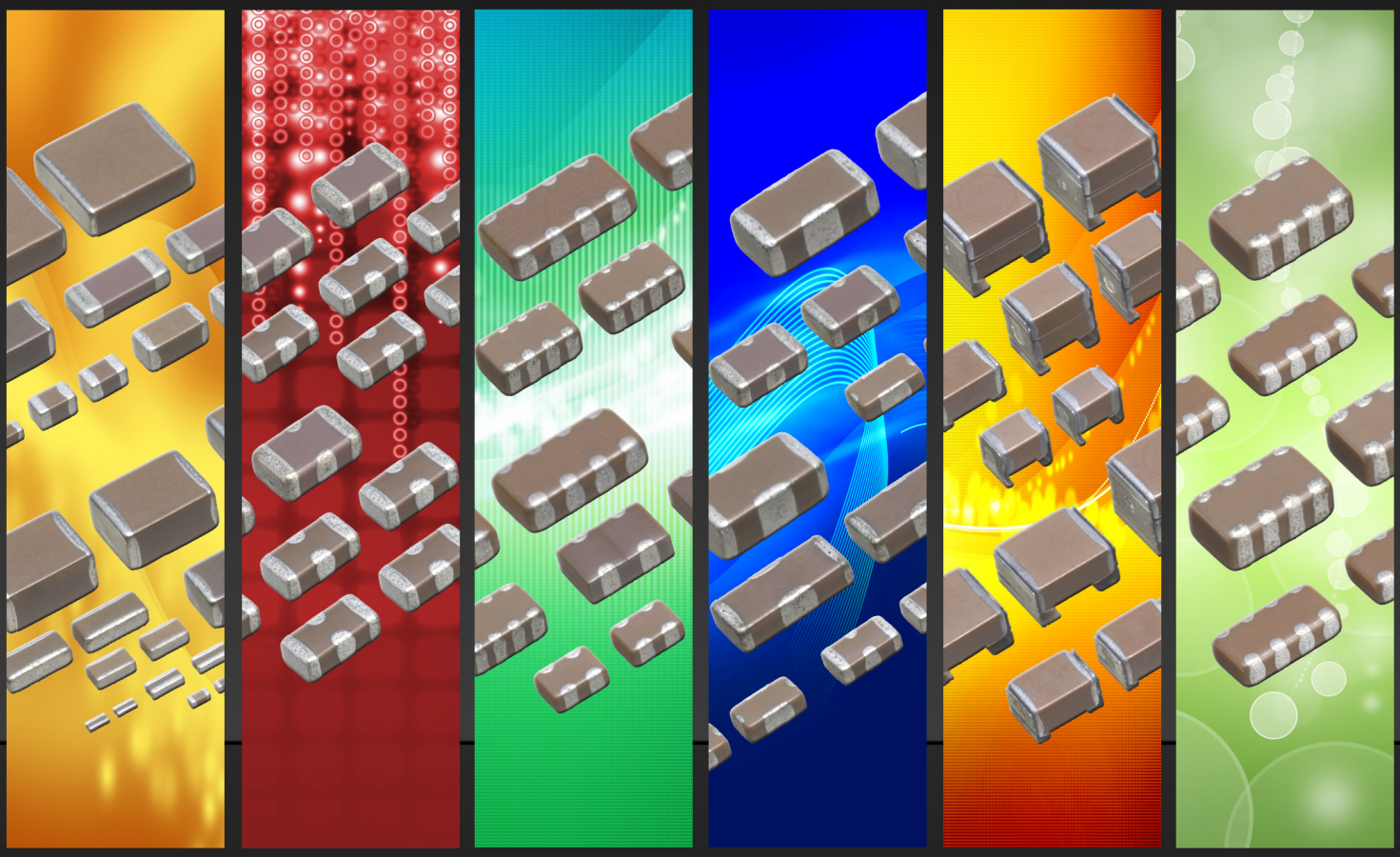
TDK

MULTILAYER CERAMIC CHIP CAPACITORS

C Series | CER Series | CKC Series | CKD Series | CKG Series | CLL Series



TDK MLCC
US Catalog

Version A10

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REMINDERS

Please read before using this product

SAFETY REMINDERS

REMINDERS

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TDK

MULTILAYER CERAMIC CHIP CAPACITORS

C Series
General Application

Type:
C0402 [EIA CC01005]
C0603 [EIA CC0201]
C1005 [EIA CC0402]
C1608 [EIA CC0603]
C2012 [EIA CC0805]
C3216 [EIA CC1206]
C3225 [EIA CC1210]
C4532 [EIA CC1812]
C5750 [EIA CC2220]

Issue date: October 2010

TDK MLCC
US Catalog

Version A10

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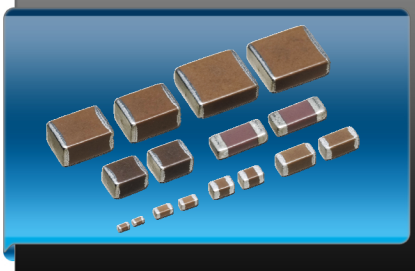


C Series

General Application

Type: C0402, C0603, C1005, C1608, C2012, C3216, C3225, C4532, C5750

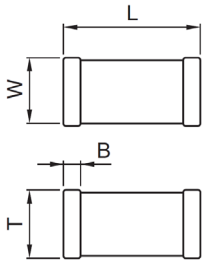
Features

- High capacitance has been achieved through precision technologies that enable the use of multiple thinner ceramic dielectric layers.
- A monolithic structure ensures superior mechanical strength and reliability.
- High-accuracy automatic mounting is facilitated through the maintenance of very precise dimensional tolerances.
- Composed of only ceramics and metals, these capacitors provide extremely dependable performance, exhibiting virtually no degradation even when subjected to temperature extremes.
- Low stray capacitance ensures high conformity with nominal values, thereby simplifying the circuit design process.
- Low residual inductance assures superior frequency characteristics.
- Because electrostatic capacity has been obtained up to the electrolytic capacitor range, these capacitors offer long service life and are optimally suited for power supply designs that require high levels of reliability.
- Owing to their low ESR and excellent frequency characteristics, these products are optimally suited for high frequency and high-density type power supplies.

Applications

- Electronics equipment
- Mobile communications equipment
- Office automation equipment
- Automotive electronics
- Test and measurement equipment
- Hybrid ICs, etc.
- Decoupling
- Smoothing
- Charge pump

Shape & Dimensions



Dimensions in mm

L	Body Length
W	Body Width
T	Body Height
B	Terminal Width

Part Number Construction

C 3225 X7S 1H 106 K T XXXX

Series Name

Dimensions L x W (mm)

Case Code	Length	Width
C0402	0.40±0.02	0.20±0.02
C0603	0.60±0.03	0.30±0.03
C1005	1.00 ± 0.05	0.50 ± 0.05
C1608	1.60 ± 0.10	0.80 ± 0.10
C2012	2.00 ± 0.20	1.25 ± 0.20
C3216	3.20 ± 0.20	1.60 ± 0.20
C3225	3.20 ± 0.40	2.50 ± 0.30
C4532	4.50 ± 0.40	3.20 ± 0.40
C5750	5.70 ± 0.40	5.00 ± 0.40

Temperature Characteristic

Temperature Characteristics	Capacitance Change	Temperature Range
C0G	0±30 ppm/ºC	-55 to +125ºC
SL	+350/-1000 ppm/ºC	-25 to +85ºC
X5R	±15%	-55 to +85ºC
X6S	±22%	-55 to +105ºC
X7R	±15%	-55 to +125ºC
X7S	±22%	-55 to +125ºC
Y5V	+22/-82%	-30 to +85ºC

Rated Voltage (DC)

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

Internal Codes

Packaging Style

Packaging Code	Style
T	Tape and Reel

Capacitance Tolerance

Tolerance Code	Tolerance
B	± 0.10pF
C	± 0.25pF
D	± 0.50pF
E	± 0.20pF
G	± 2%
J	± 5%
K	± 10%
M	± 20%
Z	+80/-20%

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.

Capacitance Code	Capacitance
0R5	0.5pF
010	1pF
102	1,000pF (1nF)
105	1,000,000pF (1µF)

Capacitance Range Chart

C0402 [EIA CC01005]

Available Through Distribution Only*

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC), X5R (± 15%), X7R (± 15%)
Rated Voltage: 16V(1C), 10V(1A), 6.3V(0J)

Capacitance (pF)	Cap Code	Tolerance	C0G	X5R			X7R
			1C (16V)	1C (16V)	1A (10V)	0J (6.3V)	1A (10V)
0.5	0R5	B: ± 0.1pF	■				
1.0	010	C: ± 0.25pF	■				
1.1	1R1	D: ± 0.5pF	■				
1.2	1R2		■				
1.3	1R3		■				
1.5	1R5		■				
1.6	1R6		■				
1.8	1R8		■				
2.0	020		■				
2.2	2R2		■				
2.4	2R4		■				
2.7	2R7		■				
3.0	030		■				
3.3	3R3		■				
3.6	3R6		■				
3.9	3R9		■				
4.3	4R3		■				
4.7	4R7		■				
5.1	5R1		■				
5.6	5R6		■				
6.2	6R2		■				
6.8	6R8		■				
7.5	7R5		■				
8.2	8R2		■				
9.1	9R1		■				
10	100	D & E: ± 0.2pF)	■				
12	120	G: ± 2%	■				
15	150	J: ± 5%	■				
100	101	K: ± 10%		■	■		■
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					■	

• Standard capacitance is shown. Please refer to Capacitance Range Table for additional values.

Standard Thickness

■ 0.20 ± 0.02 mm

*** This series is available through the distribution channel only. Please see www.tdk.com/distributor.php for a list of authorized distributors.**

• All specifications are subject to change without notice. Please read the precautions before using the product.

Capacitance Range Table

C0402 [EIA CC01005]

Available Through Distribution Only*

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C0402C0G1C0R5C	C0G	16V	0.5	± 0.25pF	0.20 ± 0.02
C0402C0G1C010B	C0G	16V	1.0	± 0.10pF	0.20 ± 0.02
C0402C0G1C010C	C0G	16V	1.0	± 0.25pF	0.20 ± 0.02
C0402C0G1C1R1B	C0G	16V	1.1	± 0.10pF	0.20 ± 0.02
C0402C0G1C1R1C	C0G	16V	1.1	± 0.25pF	0.20 ± 0.02
C0402C0G1C1R2B	C0G	16V	1.2	± 0.10pF	0.20 ± 0.02
C0402C0G1C1R2C	C0G	16V	1.2	± 0.25pF	0.20 ± 0.02
C0402C0G1C1R3B	C0G	16V	1.3	± 0.10pF	0.20 ± 0.02
C0402C0G1C1R3C	C0G	16V	1.3	± 0.25pF	0.20 ± 0.02
C0402C0G1C1R5B	C0G	16V	1.5	± 0.10pF	0.20 ± 0.02
C0402C0G1C1R5C	C0G	16V	1.5	± 0.25pF	0.20 ± 0.02
C0402C0G1C1R6B	C0G	16V	1.6	± 0.10pF	0.20 ± 0.02
C0402C0G1C1R6C	C0G	16V	1.6	± 0.25pF	0.20 ± 0.02
C0402C0G1C1R8B	C0G	16V	1.8	± 0.10pF	0.20 ± 0.02
C0402C0G1C1R8C	C0G	16V	1.8	± 0.25pF	0.20 ± 0.02
C0402C0G1C020B	C0G	16V	2.0	± 0.10pF	0.20 ± 0.02
C0402C0G1C020C	C0G	16V	2.0	± 0.25pF	0.20 ± 0.02
C0402C0G1C2R2B	C0G	16V	2.2	± 0.10pF	0.20 ± 0.02
C0402C0G1C2R2C	C0G	16V	2.2	± 0.25pF	0.20 ± 0.02
C0402C0G1C2R4B	C0G	16V	2.4	± 0.10pF	0.20 ± 0.02
C0402C0G1C2R4C	C0G	16V	2.4	± 0.25pF	0.20 ± 0.02
C0402C0G1C2R7B	C0G	16V	2.7	± 0.10pF	0.20 ± 0.02
C0402C0G1C2R7C	C0G	16V	2.7	± 0.25pF	0.20 ± 0.02
C0402C0G1C030B	C0G	16V	3.0	± 0.10pF	0.20 ± 0.02
C0402C0G1C030C	C0G	16V	3.0	± 0.25pF	0.20 ± 0.02
C0402C0G1C3R3B	C0G	16V	3.3	± 0.10pF	0.20 ± 0.02
C0402C0G1C3R3C	C0G	16V	3.3	± 0.25pF	0.20 ± 0.02
C0402C0G1C3R6B	C0G	16V	3.6	± 0.10pF	0.20 ± 0.02
C0402C0G1C3R6C	C0G	16V	3.6	± 0.25pF	0.20 ± 0.02
C0402C0G1C3R9B	C0G	16V	3.9	± 0.10pF	0.20 ± 0.02
C0402C0G1C3R9C	C0G	16V	3.9	± 0.25pF	0.20 ± 0.02
C0402C0G1C040B	C0G	16V	4.0	± 0.10pF	0.20 ± 0.02
C0402C0G1C040C	C0G	16V	4.0	± 0.25pF	0.20 ± 0.02
C0402C0G1C4R3B	C0G	16V	4.3	± 0.10pF	0.20 ± 0.02
C0402C0G1C4R3C	C0G	16V	4.3	± 0.25pF	0.20 ± 0.02
C0402C0G1C4R7B	C0G	16V	4.7	± 0.10pF	0.20 ± 0.02
C0402C0G1C4R7C	C0G	16V	4.7	± 0.25pF	0.20 ± 0.02
C0402C0G1C050B	C0G	16V	5.0	± 0.10pF	0.20 ± 0.02
C0402C0G1C050C	C0G	16V	5.0	± 0.25pF	0.20 ± 0.02
C0402C0G1C5R1B	C0G	16V	5.1	± 0.10pF	0.20 ± 0.02
C0402C0G1C5R1C	C0G	16V	5.1	± 0.25pF	0.20 ± 0.02
C0402C0G1C5R1D	C0G	16V	5.1	± 0.50pF	0.20 ± 0.02
C0402C0G1C5R6B	C0G	16V	5.6	± 0.10pF	0.20 ± 0.02
C0402C0G1C5R6C	C0G	16V	5.6	± 0.25pF	0.20 ± 0.02
C0402C0G1C5R6D	C0G	16V	5.6	± 0.50pF	0.20 ± 0.02
C0402C0G1C060B	C0G	16V	6.0	± 0.10pF	0.20 ± 0.02
C0402C0G1C060C	C0G	16V	6.0	± 0.25pF	0.20 ± 0.02
C0402C0G1C060D	C0G	16V	6.0	± 0.50pF	0.20 ± 0.02
C0402C0G1C6R2B	C0G	16V	6.2	± 0.10pF	0.20 ± 0.02
C0402C0G1C6R2C	C0G	16V	6.2	± 0.25pF	0.20 ± 0.02
C0402C0G1C6R2D	C0G	16V	6.2	± 0.50pF	0.20 ± 0.02
C0402C0G1C6R8B	C0G	16V	6.8	± 0.10pF	0.20 ± 0.02
C0402C0G1C6R8C	C0G	16V	6.8	± 0.25pF	0.20 ± 0.02
C0402C0G1C6R8D	C0G	16V	6.8	± 0.50pF	0.20 ± 0.02
C0402C0G1C070B	C0G	16V	7.0	± 0.10pF	0.20 ± 0.02
C0402C0G1C070C	C0G	16V	7.0	± 0.25pF	0.20 ± 0.02

Capacitance Range Table

C0402 [EIA CC01005]

Available Through Distribution Only*

Class 1 (Temperature Compensating) (Continued)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C0402C0G1C070D	C0G	16V	7.0	± 0.50pF	0.20 ± 0.02
C0402C0G1C7R5B	C0G	16V	7.5	± 0.10pF	0.20 ± 0.02
C0402C0G1C7R5C	C0G	16V	7.5	± 0.25pF	0.20 ± 0.02
C0402C0G1C7R5D	C0G	16V	7.5	± 0.50pF	0.20 ± 0.02
C0402C0G1C080B	C0G	16V	8.0	± 0.10pF	0.20 ± 0.02
C0402C0G1C080C	C0G	16V	8.0	± 0.25pF	0.20 ± 0.02
C0402C0G1C080D	C0G	16V	8.0	± 0.50pF	0.20 ± 0.02
C0402C0G1C8R2B	C0G	16V	8.2	± 0.10pF	0.20 ± 0.02
C0402C0G1C8R2C	C0G	16V	8.2	± 0.25pF	0.20 ± 0.02
C0402C0G1C8R2D	C0G	16V	8.2	± 0.50pF	0.20 ± 0.02
C0402C0G1C090B	C0G	16V	9.0	± 0.10pF	0.20 ± 0.02
C0402C0G1C090C	C0G	16V	9.0	± 0.25pF	0.20 ± 0.02
C0402C0G1C090D	C0G	16V	9.0	± 0.50pF	0.20 ± 0.02
C0402C0G1C9R1B	C0G	16V	9.1	± 0.10pF	0.20 ± 0.02
C0402C0G1C9R1C	C0G	16V	9.1	± 0.25pF	0.20 ± 0.02
C0402C0G1C9R1D	C0G	16V	9.1	± 0.50pF	0.20 ± 0.02
C0402C0G1C100E	C0G	16V	10	± 0.20pF	0.20 ± 0.02
C0402C0G1C100D	C0G	16V	10	± 0.50pF	0.20 ± 0.02
C0402C0G1C110G	C0G	16V	11	± 2%	0.20 ± 0.02
C0402C0G1C110J	C0G	16V	11	± 5%	0.20 ± 0.02
C0402C0G1C120G	C0G	16V	12	± 2%	0.20 ± 0.02
C0402C0G1C120J	C0G	16V	12	± 5%	0.20 ± 0.02
C0402C0G1C130G	C0G	16V	13	± 2%	0.20 ± 0.02
C0402C0G1C130J	C0G	16V	13	± 5%	0.20 ± 0.02
C0402C0G1C150G	C0G	16V	15	± 2%	0.20 ± 0.02
C0402C0G1C150J	C0G	16V	15	± 5%	0.20 ± 0.02

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C0402X5R1C101K	X5R	16V	100	± 10%	0.20 ± 0.02
C0402X5R1C151K	X5R	16V	150	± 10%	0.20 ± 0.02
C0402X5R1C221K	X5R	16V	220	± 10%	0.20 ± 0.02
C0402X5R1C331K	X5R	16V	330	± 10%	0.20 ± 0.02
C0402X5R1C471K	X5R	16V	470	± 10%	0.20 ± 0.02
C0402X5R1C681K	X5R	16V	680	± 10%	0.20 ± 0.02
C0402X5R1A101K	X5R	10V	100	± 10%	0.20 ± 0.02
C0402X5R1A221K	X5R	10V	220	± 10%	0.20 ± 0.02
C0402X5R1A471K	X5R	10V	470	± 10%	0.20 ± 0.02
C0402X7R1A101K	X7R	10V	100	± 10%	0.20 ± 0.02
C0402X7R1A151K	X7R	10V	150	± 10%	0.20 ± 0.02
C0402X7R1A221K	X7R	10V	220	± 10%	0.20 ± 0.02
C0402X7R1A331K	X7R	10V	330	± 10%	0.20 ± 0.02
C0402X7R1A471K	X7R	10V	470	± 10%	0.20 ± 0.02
C0402X7R1A681K	X7R	10V	680	± 10%	0.20 ± 0.02
C0402X5R1A102K	X5R	10V	1,000	± 10%	0.20 ± 0.02
C0402X5R1A152K	X5R	10V	1,500	± 10%	0.20 ± 0.02
C0402X5R1A222K	X5R	10V	2,200	± 10%	0.20 ± 0.02
C0402X5R0J681K	X5R	6.3V	680	± 10%	0.20 ± 0.02
C0402X5R0J102K	X5R	6.3V	1,000	± 10%	0.20 ± 0.02
C0402X5R0J152K	X5R	6.3V	1,500	± 10%	0.20 ± 0.02
C0402X5R0J222K	X5R	6.3V	2,200	± 10%	0.20 ± 0.02
C0402X5R0J332K	X5R	6.3V	3,300	± 10%	0.20 ± 0.02
C0402X5R0J472K	X5R	6.3V	4,700	± 10%	0.20 ± 0.02
C0402X5R0J682K	X5R	6.3V	6,800	± 10%	0.20 ± 0.02
C0402X5R0J103K	X5R	6.3V	10,000	± 10%	0.20 ± 0.02

Capacitance Range Chart

C0603 [EIA CC0201]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC)
Rated Voltage: 50V (1H), 25V (1E)

Capacitance (pF)	Cap Code	Tolerance	C0G	
			1H (50V)	1E (25V)
0.50	0R5	B: ± 0.1pF	■	■
0.75	R75	C: ± 0.25pF		■
1.0	010		■	■
1.1	1R1			■
1.2	1R2		■	■
1.3	1R3			■
1.5	1R5		■	■
1.6	1R6			■
1.8	1R8		■	■
2.0	020		■	■
2.2	2R2		■	■
2.4	2R4			■
2.7	2R7		■	■
3.0	030		■	■
3.3	3R3		■	■
3.6	3R6			■
3.9	3R9		■	■
4.3	4R3			■
4.7	4R7		■	■
5.1	5R1	C: ± 0.25pF		■
5.6	5R6	D: ± 0.5pF	■	■
6.2	6R2			■
6.8	6R8		■	■
7.5	7R5			■
8.2	8R2		■	■
9.1	9R1			■
10	100		■	■
12	120	J: ± 5%	■	■
15	150		■	■
18	180		■	■
22	220		■	■
27	270		■	■
33	330		■	■
39	390		■	■
47	470		■	■
56	560		■	■
68	680		■	■
82	820		■	■
100	101		■	■

• Standard capacitance is shown. Please refer to Capacitance Range Table for additional values.

Standard Thickness

■ 0.30 ± 0.03 mm

Capacitance Range Chart

C0603 [EIA CC0201]

Capacitance Range Chart

Temperature Characteristics: X5R (± 15%), X6S (± 22%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J), 4V (0G)

Capacitance (pF)	Cap Code	Tolerance	X5R					X6S
			1H (50V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)	0G (4V)
100	101	K: ± 10%	■	■				
150	151	M: ± 20%	■	■				
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						■	■
220,000	224				■	■	■	

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), Y5V (+22/-82%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

Capacitance (pF)	Cap Code	Tolerance	X7R					Y5V
			1H (50V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)	1C (16V)
100	101	K: ± 10%	■	■	■			
150	151	M: ± 20%	■	■	■			
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	K: ± 10%				■	■	■
15,000	153	M: ± 20%						
22,000	223	Z: +80/-20%						
33,000	333							
47,000	473							
68,000	683							
100,000	104							

• **Z (+80/-20%) tolerance is standard for Y5V temperature characteristic. Does not applies to Class 2 temperature characteristics (X5R, X7R, etc.)**

Standard Thickness

■ 0.30 ± 0.03 mm

• All specifications are subject to change without notice. Please read the precautions before using the product.

Capacitance Range Table

C0603 [EIA CC0201]

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C0603C0G1H0R5B	C0G	50V	0.5	± 0.10pF	0.30 ± 0.03
C0603C0G1H0R5C	C0G	50V	0.5	± 0.25pF	0.30 ± 0.03
C0603C0G1H010B	C0G	50V	1.0	± 0.10pF	0.30 ± 0.03
C0603C0G1H010C	C0G	50V	1.0	± 0.25pF	0.30 ± 0.03
C0603C0G1H1R2C	C0G	50V	1.2	± 0.25pF	0.30 ± 0.03
C0603C0G1H1R5B	C0G	50V	1.5	± 0.10pF	0.30 ± 0.03
C0603C0G1H1R5C	C0G	50V	1.5	± 0.25pF	0.30 ± 0.03
C0603C0G1H1R8C	C0G	50V	1.8	± 0.25pF	0.30 ± 0.03
C0603C0G1H020B	C0G	50V	2.0	± 0.10pF	0.30 ± 0.03
C0603C0G1H020C	C0G	50V	2.0	± 0.25pF	0.30 ± 0.03
C0603C0G1H2R2B	C0G	50V	2.2	± 0.10pF	0.30 ± 0.03
C0603C0G1H2R2C	C0G	50V	2.2	± 0.25pF	0.30 ± 0.03
C0603C0G1H2R7C	C0G	50V	2.7	± 0.25pF	0.30 ± 0.03
C0603C0G1H030B	C0G	50V	3.0	± 0.10pF	0.30 ± 0.03
C0603C0G1H030C	C0G	50V	3.0	± 0.25pF	0.30 ± 0.03
C0603C0G1H3R3B	C0G	50V	3.3	± 0.10pF	0.30 ± 0.03
C0603C0G1H3R3C	C0G	50V	3.3	± 0.25pF	0.30 ± 0.03
C0603C0G1H3R9C	C0G	50V	3.9	± 0.25pF	0.30 ± 0.03
C0603C0G1H040B	C0G	50V	4.0	± 0.10pF	0.30 ± 0.03
C0603C0G1H040C	C0G	50V	4.0	± 0.25pF	0.30 ± 0.03
C0603C0G1H4R7B	C0G	50V	4.7	± 0.10pF	0.30 ± 0.03
C0603C0G1H4R7C	C0G	50V	4.7	± 0.25pF	0.30 ± 0.03
C0603C0G1H050B	C0G	50V	5.0	± 0.10pF	0.30 ± 0.03
C0603C0G1H050C	C0G	50V	5.0	± 0.25pF	0.30 ± 0.03
C0603C0G1H5R6C	C0G	50V	5.6	± 0.25pF	0.30 ± 0.03
C0603C0G1H060C	C0G	50V	6.0	± 0.25pF	0.30 ± 0.03
C0603C0G1H060D	C0G	50V	6.0	± 0.50pF	0.30 ± 0.03
C0603C0G1H6R8C	C0G	50V	6.8	± 0.25pF	0.30 ± 0.03
C0603C0G1H6R8D	C0G	50V	6.8	± 0.50pF	0.30 ± 0.03
C0603C0G1H070C	C0G	50V	7.0	± 0.25pF	0.30 ± 0.03
C0603C0G1H070D	C0G	50V	7.0	± 0.50pF	0.30 ± 0.03
C0603C0G1H080C	C0G	50V	8.0	± 0.25pF	0.30 ± 0.03
C0603C0G1H080D	C0G	50V	8.0	± 0.50pF	0.30 ± 0.03
C0603C0G1H8R2C	C0G	50V	8.2	± 0.25pF	0.30 ± 0.03
C0603C0G1H090C	C0G	50V	9.0	± 0.25pF	0.30 ± 0.03
C0603C0G1H090D	C0G	50V	9.0	± 0.50pF	0.30 ± 0.03
C0603C0G1H100C	C0G	50V	10	± 0.25pF	0.30 ± 0.03
C0603C0G1H100D	C0G	50V	10	± 0.50pF	0.30 ± 0.03
C0603C0G1H110J	C0G	50V	11	± 5%	0.30 ± 0.03
C0603C0G1H120J	C0G	50V	12	± 5%	0.30 ± 0.03
C0603C0G1H130J	C0G	50V	13	± 5%	0.30 ± 0.03
C0603C0G1H150J	C0G	50V	15	± 5%	0.30 ± 0.03
C0603C0G1H160J	C0G	50V	16	± 5%	0.30 ± 0.03
C0603C0G1H180J	C0G	50V	18	± 5%	0.30 ± 0.03
C0603C0G1H200J	C0G	50V	20	± 5%	0.30 ± 0.03
C0603C0G1H220J	C0G	50V	22	± 5%	0.30 ± 0.03
C0603C0G1H240J	C0G	50V	24	± 5%	0.30 ± 0.03
C0603C0G1H270J	C0G	50V	27	± 5%	0.30 ± 0.03
C0603C0G1H300J	C0G	50V	30	± 5%	0.30 ± 0.03
C0603C0G1H330J	C0G	50V	33	± 5%	0.30 ± 0.03
C0603C0G1H360J	C0G	50V	36	± 5%	0.30 ± 0.03
C0603C0G1H390J	C0G	50V	39	± 5%	0.30 ± 0.03
C0603C0G1H430J	C0G	50V	43	± 5%	0.30 ± 0.03
C0603C0G1H470J	C0G	50V	47	± 5%	0.30 ± 0.03
C0603C0G1H510J	C0G	50V	51	± 5%	0.30 ± 0.03
C0603C0G1H560J	C0G	50V	56	± 5%	0.30 ± 0.03

Capacitance Range Table

C0603 [EIA CC0201]

Class 1 (Temperature Compensating) (Continued)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C0603C0G1H620J	C0G	50V	62	± 5%	0.30 ± 0.03
C0603C0G1H680J	C0G	50V	68	± 5%	0.30 ± 0.03
C0603C0G1H750J	C0G	50V	75	± 5%	0.30 ± 0.03
C0603C0G1H820J	C0G	50V	82	± 5%	0.30 ± 0.03
C0603C0G1H910J	C0G	50V	91	± 5%	0.30 ± 0.03
C0603C0G1H101J	C0G	50V	100	± 5%	0.30 ± 0.03
C0603C0G1E0R5B	C0G	25V	0.5	± 0.10pF	0.30 ± 0.03
C0603C0G1E0R5C	C0G	25V	0.5	± 0.25pF	0.30 ± 0.03
C0603C0G1ER75B	C0G	25V	0.8	± 0.10pF	0.30 ± 0.03
C0603C0G1ER75C	C0G	25V	0.8	± 0.25pF	0.30 ± 0.03
C0603C0G1E010B	C0G	25V	1.0	± 0.10pF	0.30 ± 0.03
C0603C0G1E010C	C0G	25V	1.0	± 0.25pF	0.30 ± 0.03
C0603C0G1E1R1B	C0G	25V	1.1	± 0.10pF	0.30 ± 0.03
C0603C0G1E1R1C	C0G	25V	1.1	± 0.25pF	0.30 ± 0.03
C0603C0G1E1R2B	C0G	25V	1.2	± 0.10pF	0.30 ± 0.03
C0603C0G1E1R2C	C0G	25V	1.2	± 0.25pF	0.30 ± 0.03
C0603C0G1E1R3B	C0G	25V	1.3	± 0.10pF	0.30 ± 0.03
C0603C0G1E1R3C	C0G	25V	1.3	± 0.25pF	0.30 ± 0.03
C0603C0G1E1R5B	C0G	25V	1.5	± 0.10pF	0.30 ± 0.03
C0603C0G1E1R5C	C0G	25V	1.5	± 0.25pF	0.30 ± 0.03
C0603C0G1E1R6B	C0G	25V	1.6	± 0.10pF	0.30 ± 0.03
C0603C0G1E1R6C	C0G	25V	1.6	± 0.25pF	0.30 ± 0.03
C0603C0G1E1R8B	C0G	25V	1.8	± 0.10pF	0.30 ± 0.03
C0603C0G1E1R8C	C0G	25V	1.8	± 0.25pF	0.30 ± 0.03
C0603C0G1E020B	C0G	25V	2.0	± 0.10pF	0.30 ± 0.03
C0603C0G1E020C	C0G	25V	2.0	± 0.25pF	0.30 ± 0.03
C0603C0G1E2R2B	C0G	25V	2.2	± 0.10pF	0.30 ± 0.03
C0603C0G1E2R2C	C0G	25V	2.2	± 0.25pF	0.30 ± 0.03
C0603C0G1E2R4B	C0G	25V	2.4	± 0.10pF	0.30 ± 0.03
C0603C0G1E2R4C	C0G	25V	2.4	± 0.25pF	0.30 ± 0.03
C0603C0G1E2R7B	C0G	25V	2.7	± 0.10pF	0.30 ± 0.03
C0603C0G1E2R7C	C0G	25V	2.7	± 0.25pF	0.30 ± 0.03
C0603C0G1E030B	C0G	25V	3.0	± 0.10pF	0.30 ± 0.03
C0603C0G1E030C	C0G	25V	3.0	± 0.25pF	0.30 ± 0.03
C0603C0G1E3R3B	C0G	25V	3.3	± 0.10pF	0.30 ± 0.03
C0603C0G1E3R3C	C0G	25V	3.3	± 0.25pF	0.30 ± 0.03
C0603C0G1E3R6B	C0G	25V	3.6	± 0.10pF	0.30 ± 0.03
C0603C0G1E3R6C	C0G	25V	3.6	± 0.25pF	0.30 ± 0.03
C0603C0G1E3R9B	C0G	25V	3.9	± 0.10pF	0.30 ± 0.03
C0603C0G1E3R9C	C0G	25V	3.9	± 0.25pF	0.30 ± 0.03
C0603C0G1E040B	C0G	25V	4.0	± 0.10pF	0.30 ± 0.03
C0603C0G1E040C	C0G	25V	4.0	± 0.25pF	0.30 ± 0.03
C0603C0G1E4R3B	C0G	25V	4.3	± 0.10pF	0.30 ± 0.03
C0603C0G1E4R3C	C0G	25V	4.3	± 0.25pF	0.30 ± 0.03
C0603C0G1E4R7B	C0G	25V	4.7	± 0.10pF	0.30 ± 0.03
C0603C0G1E4R7C	C0G	25V	4.7	± 0.25pF	0.30 ± 0.03
C0603C0G1E050B	C0G	25V	5.0	± 0.10pF	0.30 ± 0.03
C0603C0G1E050C	C0G	25V	5.0	± 0.25pF	0.30 ± 0.03
C0603C0G1E5R1C	C0G	25V	5.1	± 0.25pF	0.30 ± 0.03
C0603C0G1E5R1D	C0G	25V	5.1	± 0.50pF	0.30 ± 0.03
C0603C0G1E5R6C	C0G	25V	5.6	± 0.25pF	0.30 ± 0.03
C0603C0G1E5R6D	C0G	25V	5.6	± 0.50pF	0.30 ± 0.03
C0603C0G1E060C	C0G	25V	6.0	± 0.25pF	0.30 ± 0.03
C0603C0G1E060D	C0G	25V	6.0	± 0.50pF	0.30 ± 0.03
C0603C0G1E6R2C	C0G	25V	6.2	± 0.25pF	0.30 ± 0.03
C0603C0G1E6R2D	C0G	25V	6.2	± 0.50pF	0.30 ± 0.03

Capacitance Range Table

C0603 [EIA CC0201]

Class 1 (Temperature Compensating) (Continued)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C0603C0G1E6R8C	C0G	25V	6.8	± 0.25pF	0.30 ± 0.03
C0603C0G1E6R8D	C0G	25V	6.8	± 0.50pF	0.30 ± 0.03
C0603C0G1E070C	C0G	25V	7.0	± 0.25pF	0.30 ± 0.03
C0603C0G1E070D	C0G	25V	7.0	± 0.50pF	0.30 ± 0.03
C0603C0G1E7R5C	C0G	25V	7.5	± 0.25pF	0.30 ± 0.03
C0603C0G1E7R5D	C0G	25V	7.5	± 0.50pF	0.30 ± 0.03
C0603C0G1E080C	C0G	25V	8.0	± 0.25pF	0.30 ± 0.03
C0603C0G1E080D	C0G	25V	8.0	± 0.50pF	0.30 ± 0.03
C0603C0G1E8R2C	C0G	25V	8.2	± 0.25pF	0.30 ± 0.03
C0603C0G1E8R2D	C0G	25V	8.2	± 0.50pF	0.30 ± 0.03
C0603C0G1E090C	C0G	25V	9.0	± 0.25pF	0.30 ± 0.03
C0603C0G1E090D	C0G	25V	9.0	± 0.50pF	0.30 ± 0.03
C0603C0G1E9R1C	C0G	25V	9.1	± 0.25pF	0.30 ± 0.03
C0603C0G1E9R1D	C0G	25V	9.1	± 0.50pF	0.30 ± 0.03
C0603C0G1E100C	C0G	25V	10	± 0.25pF	0.30 ± 0.03
C0603C0G1E100D	C0G	25V	10	± 0.50pF	0.30 ± 0.03
C0603C0G1E110J	C0G	25V	11	± 5%	0.30 ± 0.03
C0603C0G1E120J	C0G	25V	12	± 5%	0.30 ± 0.03
C0603C0G1E130J	C0G	25V	13	± 5%	0.30 ± 0.03
C0603C0G1E150J	C0G	25V	15	± 5%	0.30 ± 0.03
C0603C0G1E160J	C0G	25V	16	± 5%	0.30 ± 0.03
C0603C0G1E180J	C0G	25V	18	± 5%	0.30 ± 0.03
C0603C0G1E200J	C0G	25V	20	± 5%	0.30 ± 0.03
C0603C0G1E220J	C0G	25V	22	± 5%	0.30 ± 0.03
C0603C0G1E240J	C0G	25V	24	± 5%	0.30 ± 0.03
C0603C0G1E270J	C0G	25V	27	± 5%	0.30 ± 0.03
C0603C0G1E300J	C0G	25V	30	± 5%	0.30 ± 0.03
C0603C0G1E330J	C0G	25V	33	± 5%	0.30 ± 0.03
C0603C0G1E360J	C0G	25V	36	± 5%	0.30 ± 0.03
C0603C0G1E390J	C0G	25V	39	± 5%	0.30 ± 0.03
C0603C0G1E430J	C0G	25V	43	± 5%	0.30 ± 0.03
C0603C0G1E470J	C0G	25V	47	± 5%	0.30 ± 0.03
C0603C0G1E510J	C0G	25V	51	± 5%	0.30 ± 0.03
C0603C0G1E560J	C0G	25V	56	± 5%	0.30 ± 0.03
C0603C0G1E620J	C0G	25V	62	± 5%	0.30 ± 0.03
C0603C0G1E680J	C0G	25V	68	± 5%	0.30 ± 0.03
C0603C0G1E750J	C0G	25V	75	± 5%	0.30 ± 0.03
C0603C0G1E820J	C0G	25V	82	± 5%	0.30 ± 0.03
C0603C0G1E910J	C0G	25V	91	± 5%	0.30 ± 0.03
C0603C0G1E101J	C0G	25V	100	± 5%	0.30 ± 0.03

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C0603X7R1H101K	X7R	50V	100	± 10%	0.30 ± 0.03
C0603X7R1H101M	X7R	50V	100	± 20%	0.30 ± 0.03
C0603X7R1H151K	X7R	50V	150	± 10%	0.30 ± 0.03
C0603X7R1H151M	X7R	50V	150	± 20%	0.30 ± 0.03
C0603X7R1H221K	X7R	50V	220	± 10%	0.30 ± 0.03
C0603X7R1H221M	X7R	50V	220	± 20%	0.30 ± 0.03
C0603X7R1H331K	X7R	50V	330	± 10%	0.30 ± 0.03
C0603X7R1H331M	X7R	50V	330	± 20%	0.30 ± 0.03
C0603X7R1H471K	X7R	50V	470	± 10%	0.30 ± 0.03
C0603X7R1H471M	X7R	50V	470	± 20%	0.30 ± 0.03

Capacitance Range Table

C0603 [EIA CC0201]

Class 2 (Temperature Stable) (Continued)

Temperature Characteristics: X7R (± 15%), X5R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C0603X7R1E101K	X7R	25V	100	± 10%	0.30 ± 0.03
C0603X7R1E101M	X7R	25V	100	± 20%	0.30 ± 0.03
C0603X7R1E151K	X7R	25V	150	± 10%	0.30 ± 0.03
C0603X7R1E151M	X7R	25V	150	± 20%	0.30 ± 0.03
C0603X7R1E221K	X7R	25V	220	± 10%	0.30 ± 0.03
C0603X7R1E221M	X7R	25V	220	± 20%	0.30 ± 0.03
C0603X7R1E331K	X7R	25V	330	± 10%	0.30 ± 0.03
C0603X7R1E331M	X7R	25V	330	± 20%	0.30 ± 0.03
C0603X7R1E471K	X7R	25V	470	± 10%	0.30 ± 0.03
C0603X7R1E471M	X7R	25V	470	± 20%	0.30 ± 0.03
C0603X7R1E681K	X7R	25V	680	± 10%	0.30 ± 0.03
C0603X7R1E681M	X7R	25V	680	± 20%	0.30 ± 0.03
C0603X7R1E102K	X7R	25V	1,000	± 10%	0.30 ± 0.03
C0603X7R1E102M	X7R	25V	1,000	± 20%	0.30 ± 0.03
C0603X7R1E152K	X7R	25V	1,500	± 10%	0.30 ± 0.03
C0603X7R1E152M	X7R	25V	1,500	± 20%	0.30 ± 0.03
C0603X7R1E222K	X7R	25V	2,200	± 10%	0.30 ± 0.03
C0603X7R1E222M	X7R	25V	2,200	± 20%	0.30 ± 0.03
C0603X7R1E332K	X7R	25V	3,300	± 10%	0.30 ± 0.03
C0603X7R1E332M	X7R	25V	3,300	± 20%	0.30 ± 0.03
C0603X7R1C101K	X7R	16V	100	± 10%	0.30 ± 0.03
C0603X7R1C101M	X7R	16V	100	± 20%	0.30 ± 0.03
C0603X7R1C151K	X7R	16V	150	± 10%	0.30 ± 0.03
C0603X7R1C151M	X7R	16V	150	± 20%	0.30 ± 0.03
C0603X7R1C221K	X7R	16V	220	± 10%	0.30 ± 0.03
C0603X7R1C221M	X7R	16V	220	± 20%	0.30 ± 0.03
C0603X7R1C331K	X7R	16V	330	± 10%	0.30 ± 0.03
C0603X7R1C331M	X7R	16V	330	± 20%	0.30 ± 0.03
C0603X7R1C471K	X7R	16V	470	± 10%	0.30 ± 0.03
C0603X7R1C471M	X7R	16V	470	± 20%	0.30 ± 0.03
C0603X7R1C681K	X7R	16V	680	± 10%	0.30 ± 0.03
C0603X7R1C681M	X7R	16V	680	± 20%	0.30 ± 0.03
C0603X7R1C102K	X7R	16V	1,000	± 10%	0.30 ± 0.03
C0603X7R1C102M	X7R	16V	1,000	± 20%	0.30 ± 0.03
C0603X7R1C152K	X7R	16V	1,500	± 10%	0.30 ± 0.03
C0603X7R1C152M	X7R	16V	1,500	± 20%	0.30 ± 0.03
C0603X7R1C222K	X7R	16V	2,200	± 10%	0.30 ± 0.03
C0603X7R1C222M	X7R	16V	2,200	± 20%	0.30 ± 0.03
C0603X7R1C332K	X7R	16V	3,300	± 10%	0.30 ± 0.03
C0603X7R1C332M	X7R	16V	3,300	± 20%	0.30 ± 0.03
C0603X7R1C472K	X7R	16V	4,700	± 10%	0.30 ± 0.03
C0603X7R1C472M	X7R	16V	4,700	± 20%	0.30 ± 0.03
C0603X7R1A682K	X7R	10V	6,800	± 10%	0.30 ± 0.03
C0603X7R1A682M	X7R	10V	6,800	± 20%	0.30 ± 0.03
C0603X7R1A103K	X7R	10V	10,000	± 10%	0.30 ± 0.03
C0603X7R1A103M	X7R	10V	10,000	± 20%	0.30 ± 0.03
C0603X7R0J103K	X7R	6.3V	10,000	± 10%	0.30 ± 0.03
C0603X7R0J103M	X7R	6.3V	10,000	± 20%	0.30 ± 0.03
C0603X5R1H101K	X5R	50V	100	± 10%	0.30 ± 0.03
C0603X5R1H101M	X5R	50V	100	± 20%	0.30 ± 0.03
C0603X5R1H151K	X5R	50V	150	± 10%	0.30 ± 0.03
C0603X5R1H151M	X5R	50V	150	± 20%	0.30 ± 0.03
C0603X5R1H221K	X5R	50V	220	± 10%	0.30 ± 0.03
C0603X5R1H221M	X5R	50V	220	± 20%	0.30 ± 0.03
C0603X5R1H331K	X5R	50V	330	± 10%	0.30 ± 0.03
C0603X5R1H331M	X5R	50V	330	± 20%	0.30 ± 0.03

Capacitance Range Table

C0603 [EIA CC0201]

Class 2 (Temperature Stable) (Continued)

Temperature Characteristics: X5R (± 15%), X6S (± 22%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C0603X5R1H471K	X5R	50V	470	± 10%	0.30 ± 0.03
C0603X5R1H471M	X5R	50V	470	± 20%	0.30 ± 0.03
C0603X5R1E101K	X5R	25V	100	± 10%	0.30 ± 0.03
C0603X5R1E101M	X5R	25V	100	± 20%	0.30 ± 0.03
C0603X5R1E151K	X5R	25V	150	± 10%	0.30 ± 0.03
C0603X5R1E151M	X5R	25V	150	± 20%	0.30 ± 0.03
C0603X5R1E221K	X5R	25V	220	± 10%	0.30 ± 0.03
C0603X5R1E221M	X5R	25V	220	± 20%	0.30 ± 0.03
C0603X5R1E331K	X5R	25V	330	± 10%	0.30 ± 0.03
C0603X5R1E331M	X5R	25V	330	± 20%	0.30 ± 0.03
C0603X5R1E471K	X5R	25V	470	± 10%	0.30 ± 0.03
C0603X5R1E471M	X5R	25V	470	± 20%	0.30 ± 0.03
C0603X5R1E681K	X5R	25V	680	± 10%	0.30 ± 0.03
C0603X5R1E681M	X5R	25V	680	± 20%	0.30 ± 0.03
C0603X5R1E102K	X5R	25V	1,000	± 10%	0.30 ± 0.03
C0603X5R1E102M	X5R	25V	1,000	± 20%	0.30 ± 0.03
C0603X5R1E152K	X5R	25V	1,500	± 10%	0.30 ± 0.03
C0603X5R1E152M	X5R	25V	1,500	± 20%	0.30 ± 0.03
C0603X5R1E222K	X5R	25V	2,200	± 10%	0.30 ± 0.03
C0603X5R1E222M	X5R	25V	2,200	± 20%	0.30 ± 0.03
C0603X5R1E332K	X5R	25V	3,300	± 10%	0.30 ± 0.03
C0603X5R1E332M	X5R	25V	3,300	± 20%	0.30 ± 0.03
C0603X5R1C222K	X5R	16V	2,200	± 10%	0.30 ± 0.03
C0603X5R1C222M	X5R	16V	2,200	± 20%	0.30 ± 0.03
C0603X5R1C332K	X5R	16V	3,300	± 10%	0.30 ± 0.03
C0603X5R1C332M	X5R	16V	3,300	± 20%	0.30 ± 0.03
C0603X5R1C472K	X5R	16V	4,700	± 10%	0.30 ± 0.03
C0603X5R1C472M	X5R	16V	4,700	± 20%	0.30 ± 0.03
C0603X5R1C224M	X5R	16V	220,000	± 20%	0.30 ± 0.03
C0603X5R1A682K	X5R	10V	6,800	± 10%	0.30 ± 0.03
C0603X5R1A682M	X5R	10V	6,800	± 20%	0.30 ± 0.03
C0603X5R1A103K	X5R	10V	10,000	± 10%	0.30 ± 0.03
C0603X5R1A103M	X5R	10V	10,000	± 20%	0.30 ± 0.03
C0603X5R1A224M	X5R	10V	220,000	± 20%	0.30 ± 0.03
C0603X5R0J103K	X5R	6.3V	10,000	± 10%	0.30 ± 0.03
C0603X5R0J103M	X5R	6.3V	10,000	± 20%	0.30 ± 0.03
C0603X5R0J153K	X5R	6.3V	15,000	± 10%	0.30 ± 0.03
C0603X5R0J153M	X5R	6.3V	15,000	± 20%	0.30 ± 0.03
C0603X5R0J223K	X5R	6.3V	22,000	± 10%	0.30 ± 0.03
C0603X5R0J223M	X5R	6.3V	22,000	± 20%	0.30 ± 0.03
C0603X5R0J333K	X5R	6.3V	33,000	± 10%	0.30 ± 0.03
C0603X5R0J333M	X5R	6.3V	33,000	± 20%	0.30 ± 0.03
C0603X5R0J473K	X5R	6.3V	47,000	± 10%	0.30 ± 0.03
C0603X5R0J473M	X5R	6.3V	47,000	± 20%	0.30 ± 0.03
C0603X5R0J683K	X5R	6.3V	68,000	± 10%	0.30 ± 0.03
C0603X5R0J683M	X5R	6.3V	68,000	± 20%	0.30 ± 0.03
C0603X5R0J104K	X5R	6.3V	100,000	± 10%	0.30 ± 0.03
C0603X5R0J104M	X5R	6.3V	100,000	± 20%	0.30 ± 0.03
C0603X5R0J224M	X5R	6.3V	220,000	± 20%	0.30 ± 0.03
C0603X6S0G104K	X6S	4V	100,000	± 10%	0.30 ± 0.03
C0603X6S0G104M	X6S	4V	100,000	± 20%	0.30 ± 0.03

Capacitance Range Table

C0603 [EIA CC0201]

Class 3 (General Purpose)

Temperature Characteristics: Y5V (+22/-82%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C0603Y5V1C103Z	Y5V	16V	10,000	+80/-20%	0.30 ± 0.03

Capacitance Range Chart

C1005 [EIA CC0402]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC)
Rated Voltage: 50V (1H), 25V (1E)

Capacitance (pF)	Cap Code	Tolerance	C0G	
			1H (50V)	1E (25V)
0.50	0R5	B: ± 0.1pF		
0.75	R75	C: ± 0.25pF		
1.0	010			
1.2	1R2			
1.5	1R5			
1.8	1R8			
2.2	2R2			
2.7	2R7			
3.3	3R3			
3.9	3R9			
4.7	4R7			
5.6	5R6	C: ± 0.25pF		
6.8	6R8	D: ± 0.5pF		
8.2	8R2			
10	100			
12	120	J: ± 5%		
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 capacitance is shown. Please refer to Capacitance Range Table for additional values.

Standard Thickness

0.50 ± 0.05 mm

Capacitance Range Chart

C1005 [EIA CC0402]

Capacitance Range Chart

Temperature Characteristics: X5R (± 15%), X6S (± 22%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J), 4V (0G)

Capacitance (pF)	Cap Code	Tolerance	X5R						X6S		
			1H (50V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)	0G (4V)	1A (10V)	0J (6.3V)	0G (4V)
220	221	K: ± 10%									
330	331	M: ± 20%									
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										
220,000	224										
330,000	334										
470,000	474										
1,000,000	105										
1,500,000	155										
2,200,000	225										
3,300,000	335										
4,700,000	475										

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), Y5V (+22/-82%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

Capacitance (pF)	Cap Code	Tolerance	X7R				Y5V				
			1H (50V)	1E (25V)	1C (16V)	1A (10V)	1H (50V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)
220	221	K: ± 10%									
330	331	M: ± 20%									
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	J: ± 5%									
15,000	153	K: ± 10%									
22,000	223	M: ± 20%									
33,000	333	Z: +80/-20%									
47,000	473										
68,000	683										
100,000	104										
220,000	224										
330,000	334										
470,000	474										
1,000,000	105										

• **Z (+80/-20%) tolerance is standard for Y5V temperature characteristic. Does not applies to Class 2 temperature characteristics (X5R, X7R, etc.)**

Standard Thickness

0.50 ± 0.05 mm

• All specifications are subject to change without notice. Please read the precautions before using the product.

Capacitance Range Table

C1005 [EIA CC0402]

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1005C0G1H0R5B	C0G	50V	0.5	± 0.10pF	0.50 ± 0.05
C1005C0G1H0R5C	C0G	50V	0.5	± 0.25pF	0.50 ± 0.05
C1005C0G1HR75C	C0G	50V	0.8	± 0.25pF	0.50 ± 0.05
C1005C0G1H010B	C0G	50V	1.0	± 0.10pF	0.50 ± 0.05
C1005C0G1H010C	C0G	50V	1.0	± 0.25pF	0.50 ± 0.05
C1005C0G1H1R2B	C0G	50V	1.2	± 0.10pF	0.50 ± 0.05
C1005C0G1H1R2C	C0G	50V	1.2	± 0.25pF	0.50 ± 0.05
C1005C0G1H1R5B	C0G	50V	1.5	± 0.10pF	0.50 ± 0.05
C1005C0G1H1R5C	C0G	50V	1.5	± 0.25pF	0.50 ± 0.05
C1005C0G1H1R8B	C0G	50V	1.8	± 0.10pF	0.50 ± 0.05
C1005C0G1H1R8C	C0G	50V	1.8	± 0.25pF	0.50 ± 0.05
C1005C0G1H020B	C0G	50V	2.0	± 0.10pF	0.50 ± 0.05
C1005C0G1H020C	C0G	50V	2.0	± 0.25pF	0.50 ± 0.05
C1005C0G1H2R2B	C0G	50V	2.2	± 0.10pF	0.50 ± 0.05
C1005C0G1H2R2C	C0G	50V	2.2	± 0.25pF	0.50 ± 0.05
C1005C0G1H2R5C	C0G	50V	2.5	± 0.25pF	0.50 ± 0.05
C1005C0G1H2R7B	C0G	50V	2.7	± 0.10pF	0.50 ± 0.05
C1005C0G1H2R7C	C0G	50V	2.7	± 0.25pF	0.50 ± 0.05
C1005C0G1H030B	C0G	50V	3.0	± 0.10pF	0.50 ± 0.05
C1005C0G1H030C	C0G	50V	3.0	± 0.25pF	0.50 ± 0.05
C1005C0G1H3R3B	C0G	50V	3.3	± 0.10pF	0.50 ± 0.05
C1005C0G1H3R3C	C0G	50V	3.3	± 0.25pF	0.50 ± 0.05
C1005C0G1H3R5C	C0G	50V	3.5	± 0.25pF	0.50 ± 0.05
C1005C0G1H3R9B	C0G	50V	3.9	± 0.10pF	0.50 ± 0.05
C1005C0G1H3R9C	C0G	50V	3.9	± 0.25pF	0.50 ± 0.05
C1005C0G1H040B	C0G	50V	4.0	± 0.10pF	0.50 ± 0.05
C1005C0G1H040C	C0G	50V	4.0	± 0.25pF	0.50 ± 0.05
C1005C0G1H4R7B	C0G	50V	4.7	± 0.10pF	0.50 ± 0.05
C1005C0G1H4R7C	C0G	50V	4.7	± 0.25pF	0.50 ± 0.05
C1005C0G1H050B	C0G	50V	5.0	± 0.10pF	0.50 ± 0.05
C1005C0G1H050C	C0G	50V	5.0	± 0.25pF	0.50 ± 0.05
C1005C0G1H5R6C	C0G	50V	5.6	± 0.25pF	0.50 ± 0.05
C1005C0G1H5R6D	C0G	50V	5.6	± 0.50pF	0.50 ± 0.05
C1005C0G1H060C	C0G	50V	6.0	± 0.25pF	0.50 ± 0.05
C1005C0G1H060D	C0G	50V	6.0	± 0.50pF	0.50 ± 0.05
C1005C0G1H6R8C	C0G	50V	6.8	± 0.25pF	0.50 ± 0.05
C1005C0G1H6R8D	C0G	50V	6.8	± 0.50pF	0.50 ± 0.05
C1005C0G1H070C	C0G	50V	7.0	± 0.25pF	0.50 ± 0.05
C1005C0G1H070D	C0G	50V	7.0	± 0.50pF	0.50 ± 0.05
C1005C0G1H080C	C0G	50V	8.0	± 0.25pF	0.50 ± 0.05
C1005C0G1H080D	C0G	50V	8.0	± 0.50pF	0.50 ± 0.05
C1005C0G1H8R2C	C0G	50V	8.2	± 0.25pF	0.50 ± 0.05
C1005C0G1H8R2D	C0G	50V	8.2	± 0.50pF	0.50 ± 0.05
C1005C0G1H090C	C0G	50V	9.0	± 0.25pF	0.50 ± 0.05
C1005C0G1H090D	C0G	50V	9.0	± 0.50pF	0.50 ± 0.05
C1005C0G1H100C	C0G	50V	10	± 0.25pF	0.50 ± 0.05
C1005C0G1H100D	C0G	50V	10	± 0.50pF	0.50 ± 0.05
C1005C0G1H110J	C0G	50V	11	± 5%	0.50 ± 0.05
C1005C0G1H120J	C0G	50V	12	± 5%	0.50 ± 0.05
C1005C0G1H130J	C0G	50V	13	± 5%	0.50 ± 0.05
C1005C0G1H150J	C0G	50V	15	± 5%	0.50 ± 0.05
C1005C0G1H160J	C0G	50V	16	± 5%	0.50 ± 0.05
C1005C0G1H180J	C0G	50V	18	± 5%	0.50 ± 0.05
C1005C0G1H200J	C0G	50V	20	± 5%	0.50 ± 0.05
C1005C0G1H220J	C0G	50V	22	± 5%	0.50 ± 0.05
C1005C0G1H240J	C0G	50V	24	± 5%	0.50 ± 0.05

Capacitance Range Table

C1005 [EIA CC0402]

Class 1 (Temperature Compensating) (Continued)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1005C0G1H270J	C0G	50V	27	± 5%	0.50 ± 0.05
C1005C0G1H300J	C0G	50V	30	± 5%	0.50 ± 0.05
C1005C0G1H330J	C0G	50V	33	± 5%	0.50 ± 0.05
C1005C0G1H360J	C0G	50V	36	± 5%	0.50 ± 0.05
C1005C0G1H390J	C0G	50V	39	± 5%	0.50 ± 0.05
C1005C0G1H430J	C0G	50V	43	± 5%	0.50 ± 0.05
C1005C0G1H470J	C0G	50V	47	± 5%	0.50 ± 0.05
C1005C0G1H510J	C0G	50V	51	± 5%	0.50 ± 0.05
C1005C0G1H560J	C0G	50V	56	± 5%	0.50 ± 0.05
C1005C0G1H620J	C0G	50V	62	± 5%	0.50 ± 0.05
C1005C0G1H680J	C0G	50V	68	± 5%	0.50 ± 0.05
C1005C0G1H750J	C0G	50V	75	± 5%	0.50 ± 0.05
C1005C0G1H820J	C0G	50V	82	± 5%	0.50 ± 0.05
C1005C0G1H910J	C0G	50V	91	± 5%	0.50 ± 0.05
C1005C0G1H101J	C0G	50V	100	± 5%	0.50 ± 0.05
C1005C0G1H121J	C0G	50V	120	± 5%	0.50 ± 0.05
C1005C0G1H151J	C0G	50V	150	± 5%	0.50 ± 0.05
C1005C0G1H181J	C0G	50V	180	± 5%	0.50 ± 0.05
C1005C0G1H221J	C0G	50V	220	± 5%	0.50 ± 0.05
C1005C0G1H271J	C0G	50V	270	± 5%	0.50 ± 0.05
C1005C0G1H331J	C0G	50V	330	± 5%	0.50 ± 0.05
C1005C0G1H391J	C0G	50V	390	± 5%	0.50 ± 0.05
C1005C0G1H471J	C0G	50V	470	± 5%	0.50 ± 0.05
C1005C0G1H561J	C0G	50V	560	± 5%	0.50 ± 0.05
C1005C0G1H681J	C0G	50V	680	± 5%	0.50 ± 0.05
C1005C0G1H821J	C0G	50V	820	± 5%	0.50 ± 0.05
C1005C0G1H102J	C0G	50V	1,000	± 5%	0.50 ± 0.05
C1005C0G1E561J	C0G	25V	560	± 5%	0.50 ± 0.05
C1005C0G1E681J	C0G	25V	680	± 5%	0.50 ± 0.05
C1005C0G1E821J	C0G	25V	820	± 5%	0.50 ± 0.05
C1005C0G1E102J	C0G	25V	1,000	± 5%	0.50 ± 0.05

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1005X7R1H221K	X7R	50V	220	± 10%	0.50 ± 0.05
C1005X7R1H221M	X7R	50V	220	± 20%	0.50 ± 0.05
C1005X7R1H331K	X7R	50V	330	± 10%	0.50 ± 0.05
C1005X7R1H331M	X7R	50V	330	± 20%	0.50 ± 0.05
C1005X7R1H471K	X7R	50V	470	± 10%	0.50 ± 0.05
C1005X7R1H471M	X7R	50V	470	± 20%	0.50 ± 0.05
C1005X7R1H681K	X7R	50V	680	± 10%	0.50 ± 0.05
C1005X7R1H681M	X7R	50V	680	± 20%	0.50 ± 0.05
C1005X7R1H102K	X7R	50V	1,000	± 10%	0.50 ± 0.05
C1005X7R1H102M	X7R	50V	1,000	± 20%	0.50 ± 0.05
C1005X7R1H152K	X7R	50V	1,500	± 10%	0.50 ± 0.05
C1005X7R1H152M	X7R	50V	1,500	± 20%	0.50 ± 0.05
C1005X7R1H222K	X7R	50V	2,200	± 10%	0.50 ± 0.05
C1005X7R1H222M	X7R	50V	2,200	± 20%	0.50 ± 0.05
C1005X7R1H332K	X7R	50V	3,300	± 10%	0.50 ± 0.05
C1005X7R1H332M	X7R	50V	3,300	± 20%	0.50 ± 0.05
C1005X7R1H472K	X7R	50V	4,700	± 10%	0.50 ± 0.05
C1005X7R1H472M	X7R	50V	4,700	± 20%	0.50 ± 0.05
C1005X7R1H682K	X7R	50V	6,800	± 10%	0.50 ± 0.05
C1005X7R1H682M	X7R	50V	6,800	± 20%	0.50 ± 0.05

Capacitance Range Table

C1005 [EIA CC0402]

Class 2 (Temperature Stable) (Continued)

Temperature Characteristics: X7R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1005X7R1H103K	X7R	50V	10,000	± 10%	0.50 ± 0.05
C1005X7R1H103M	X7R	50V	10,000	± 20%	0.50 ± 0.05
C1005X7R1H153K	X7R	50V	15,000	± 10%	0.50 ± 0.05
C1005X7R1H153M	X7R	50V	15,000	± 20%	0.50 ± 0.05
C1005X7R1H223K	X7R	50V	22,000	± 10%	0.50 ± 0.05
C1005X7R1H223M	X7R	50V	22,000	± 20%	0.50 ± 0.05
C1005X7R1H333K	X7R	50V	33,000	± 10%	0.50 ± 0.05
C1005X7R1H333M	X7R	50V	33,000	± 20%	0.50 ± 0.05
C1005X7R1H473K	X7R	50V	47,000	± 10%	0.50 ± 0.05
C1005X7R1H473M	X7R	50V	47,000	± 20%	0.50 ± 0.05
C1005X7R1H683K	X7R	50V	68,000	± 10%	0.50 ± 0.05
C1005X7R1H683M	X7R	50V	68,000	± 20%	0.50 ± 0.05
C1005X7R1H104K	X7R	50V	100,000	± 10%	0.50 ± 0.05
C1005X7R1H104M	X7R	50V	100,000	± 20%	0.50 ± 0.05
C1005X7R1E102K	X7R	25V	1,000	± 10%	0.50 ± 0.05
C1005X7R1E102M	X7R	25V	1,000	± 20%	0.50 ± 0.05
C1005X7R1E152K	X7R	25V	1,500	± 10%	0.50 ± 0.05
C1005X7R1E152M	X7R	25V	1,500	± 20%	0.50 ± 0.05
C1005X7R1E222K	X7R	25V	2,200	± 10%	0.50 ± 0.05
C1005X7R1E222M	X7R	25V	2,200	± 20%	0.50 ± 0.05
C1005X7R1E332K	X7R	25V	3,300	± 10%	0.50 ± 0.05
C1005X7R1E332M	X7R	25V	3,300	± 20%	0.50 ± 0.05
C1005X7R1E472K	X7R	25V	4,700	± 10%	0.50 ± 0.05
C1005X7R1E472M	X7R	25V	4,700	± 20%	0.50 ± 0.05
C1005X7R1E682K	X7R	25V	6,800	± 10%	0.50 ± 0.05
C1005X7R1E682M	X7R	25V	6,800	± 20%	0.50 ± 0.05
C1005X7R1E103J	X7R	25V	10,000	± 05%	0.50 ± 0.05
C1005X7R1E103K	X7R	25V	10,000	± 10%	0.50 ± 0.05
C1005X7R1E103M	X7R	25V	10,000	± 20%	0.50 ± 0.05
C1005X7R1E153K	X7R	25V	15,000	± 10%	0.50 ± 0.05
C1005X7R1E153M	X7R	25V	15,000	± 20%	0.50 ± 0.05
C1005X7R1E223K	X7R	25V	22,000	± 10%	0.50 ± 0.05
C1005X7R1E223M	X7R	25V	22,000	± 20%	0.50 ± 0.05
C1005X7R1E333K	X7R	25V	33,000	± 10%	0.50 ± 0.05
C1005X7R1E333M	X7R	25V	33,000	± 20%	0.50 ± 0.05
C1005X7R1E473K	X7R	25V	47,000	± 10%	0.50 ± 0.05
C1005X7R1E473M	X7R	25V	47,000	± 20%	0.50 ± 0.05
C1005X7R1E683K	X7R	25V	68,000	± 10%	0.50 ± 0.05
C1005X7R1E683M	X7R	25V	68,000	± 20%	0.50 ± 0.05
C1005X7R1E104K	X7R	25V	100,000	± 10%	0.50 ± 0.05
C1005X7R1E104M	X7R	25V	100,000	± 20%	0.50 ± 0.05
C1005X7R1C103K	X7R	16V	10,000	± 10%	0.50 ± 0.05
C1005X7R1C103M	X7R	16V	10,000	± 20%	0.50 ± 0.05
C1005X7R1C153K	X7R	16V	15,000	± 10%	0.50 ± 0.05
C1005X7R1C153M	X7R	16V	15,000	± 20%	0.50 ± 0.05
C1005X7R1C223K	X7R	16V	22,000	± 10%	0.50 ± 0.05
C1005X7R1C223M	X7R	16V	22,000	± 20%	0.50 ± 0.05
C1005X7R1C333K	X7R	16V	33,000	± 10%	0.50 ± 0.05
C1005X7R1C333M	X7R	16V	33,000	± 20%	0.50 ± 0.05
C1005X7R1C473K	X7R	16V	47,000	± 10%	0.50 ± 0.05
C1005X7R1C473M	X7R	16V	47,000	± 20%	0.50 ± 0.05
C1005X7R1C683K	X7R	16V	68,000	± 10%	0.50 ± 0.05
C1005X7R1C683M	X7R	16V	68,000	± 20%	0.50 ± 0.05
C1005X7R1C104K	X7R	16V	100,000	± 10%	0.50 ± 0.05
C1005X7R1C104M	X7R	16V	100,000	± 20%	0.50 ± 0.05

Capacitance Range Table

C1005 [EIA CC0402]

Class 2 (Temperature Stable) (Continued)

Temperature Characteristics: X7R (± 15%), X5R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1005X7R1C154K	X7R	16V	150,000	± 10%	0.50 ± 0.05
C1005X7R1C154M	X7R	16V	150,000	± 20%	0.50 ± 0.05
C1005X7R1C224K	X7R	16V	220,000	± 10%	0.50 ± 0.05
C1005X7R1C224M	X7R	16V	220,000	± 20%	0.50 ± 0.05
C1005X7R1A473K	X7R	10V	47,000	± 10%	0.50 ± 0.05
C1005X7R1A473M	X7R	10V	47,000	± 20%	0.50 ± 0.05
C1005X7R1A683K	X7R	10V	68,000	± 10%	0.50 ± 0.05
C1005X7R1A683M	X7R	10V	68,000	± 20%	0.50 ± 0.05
C1005X7R1A104K	X7R	10V	100,000	± 10%	0.50 ± 0.05
C1005X7R1A104M	X7R	10V	100,000	± 20%	0.50 ± 0.05
C1005X7R1A224K	X7R	10V	220,000	± 10%	0.50 ± 0.05
C1005X7R1A224M	X7R	10V	220,000	± 20%	0.50 ± 0.05
C1005X5R1H221K	X5R	50V	220	± 10%	0.50 ± 0.05
C1005X5R1H331K	X5R	50V	330	± 10%	0.50 ± 0.05
C1005X5R1H471K	X5R	50V	470	± 10%	0.50 ± 0.05
C1005X5R1H681K	X5R	50V	680	± 10%	0.50 ± 0.05
C1005X5R1H102K	X5R	50V	1,000	± 10%	0.50 ± 0.05
C1005X5R1H152K	X5R	50V	1,500	± 10%	0.50 ± 0.05
C1005X5R1H222K	X5R	50V	2,200	± 10%	0.50 ± 0.05
C1005X5R1H332K	X5R	50V	3,300	± 10%	0.50 ± 0.05
C1005X5R1H472K	X5R	50V	4,700	± 10%	0.50 ± 0.05
C1005X5R1H682K	X5R	50V	6,800	± 10%	0.50 ± 0.05
C1005X5R1H473K	X5R	50V	47,000	± 10%	0.50 ± 0.05
C1005X5R1H473M	X5R	50V	47,000	± 20%	0.50 ± 0.05
C1005X5R1H683K	X5R	50V	68,000	± 10%	0.50 ± 0.05
C1005X5R1H683M	X5R	50V	68,000	± 20%	0.50 ± 0.05
C1005X5R1H104K	X5R	50V	100,000	± 10%	0.50 ± 0.05
C1005X5R1H104M	X5R	50V	100,000	± 20%	0.50 ± 0.05
C1005X5R1E103K	X5R	25V	10,000	± 10%	0.50 ± 0.05
C1005X5R1E153K	X5R	25V	15,000	± 10%	0.50 ± 0.05
C1005X5R1E223K	X5R	25V	22,000	± 10%	0.50 ± 0.05
C1005X5R1E333K	X5R	25V	33,000	± 10%	0.50 ± 0.05
C1005X5R1E473K	X5R	25V	47,000	± 10%	0.50 ± 0.05
C1005X5R1E473M	X5R	25V	47,000	± 20%	0.50 ± 0.05
C1005X5R1E683K	X5R	25V	68,000	± 10%	0.50 ± 0.05
C1005X5R1E683M	X5R	25V	68,000	± 20%	0.50 ± 0.05
C1005X5R1E104K	X5R	25V	100,000	± 10%	0.50 ± 0.05
C1005X5R1E104M	X5R	25V	100,000	± 20%	0.50 ± 0.05
C1005X5R1E224K	X5R	25V	220,000	± 10%	0.50 ± 0.05
C1005X5R1E224M	X5R	25V	220,000	± 20%	0.50 ± 0.05
C1005X5R1C473K	X5R	16V	47,000	± 10%	0.50 ± 0.05
C1005X5R1C473M	X5R	16V	47,000	± 20%	0.50 ± 0.05
C1005X5R1C683K	X5R	16V	68,000	± 10%	0.50 ± 0.05
C1005X5R1C683M	X5R	16V	68,000	± 20%	0.50 ± 0.05
C1005X5R1C104K	X5R	16V	100,000	± 10%	0.50 ± 0.05
C1005X5R1C104M	X5R	16V	100,000	± 20%	0.50 ± 0.05
C1005X5R1C224K	X5R	16V	220,000	± 10%	0.50 ± 0.05
C1005X5R1C224M	X5R	16V	220,000	± 20%	0.50 ± 0.05
C1005X5R1C334K	X5R	16V	330,000	± 10%	0.50 ± 0.05
C1005X5R1C334M	X5R	16V	330,000	± 20%	0.50 ± 0.05
C1005X5R1C474K	X5R	16V	470,000	± 10%	0.50 ± 0.05
C1005X5R1C474M	X5R	16V	470,000	± 20%	0.50 ± 0.05
C1005X5R1C105K	X5R	16V	1,000,000	± 10%	0.50 ± 0.05
C1005X5R1C105M	X5R	16V	1,000,000	± 20%	0.50 ± 0.05
C1005X5R1A473K	X5R	10V	47,000	± 10%	0.50 ± 0.05
C1005X5R1A473M	X5R	10V	47,000	± 20%	0.50 ± 0.05

Capacitance Range Table

C1005 [EIA CC0402]

Class 2 (Temperature Stable) (Continued)

Temperature Characteristics: X5R (± 15%), X6S (± 22%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1005X5R1A683K	X5R	10V	68,000	± 10%	0.50 ± 0.05
C1005X5R1A683M	X5R	10V	68,000	± 20%	0.50 ± 0.05
C1005X5R1A104K	X5R	10V	100,000	± 10%	0.50 ± 0.05
C1005X5R1A104M	X5R	10V	100,000	± 20%	0.50 ± 0.05
C1005X5R1A224K	X5R	10V	220,000	± 10%	0.50 ± 0.05
C1005X5R1A224M	X5R	10V	220,000	± 20%	0.50 ± 0.05
C1005X5R1A334K	X5R	10V	330,000	± 10%	0.50 ± 0.05
C1005X5R1A334M	X5R	10V	330,000	± 20%	0.50 ± 0.05
C1005X5R1A474K	X5R	10V	470,000	± 10%	0.50 ± 0.05
C1005X5R1A474M	X5R	10V	470,000	± 20%	0.50 ± 0.05
C1005X5R1A105K	X5R	10V	1,000,000	± 10%	0.50 ± 0.05
C1005X5R1A105M	X5R	10V	1,000,000	± 20%	0.50 ± 0.05
C1005X5R1A155K	X5R	10V	1,500,000	± 10%	0.50 ± 0.05
C1005X5R1A155M	X5R	10V	1,500,000	± 20%	0.50 ± 0.05
C1005X5R1A225K	X5R	10V	2,200,000	± 10%	0.50 ± 0.05
C1005X5R1A225M	X5R	10V	2,200,000	± 20%	0.50 ± 0.05
C1005X5R0J104K	X5R	6.3V	100,000	± 10%	0.50 ± 0.05
C1005X5R0J104M	X5R	6.3V	100,000	± 20%	0.50 ± 0.05
C1005X5R0J224K	X5R	6.3V	220,000	± 10%	0.50 ± 0.05
C1005X5R0J224M	X5R	6.3V	220,000	± 20%	0.50 ± 0.05
C1005X5R0J334K	X5R	6.3V	330,000	± 10%	0.50 ± 0.05
C1005X5R0J334M	X5R	6.3V	330,000	± 20%	0.50 ± 0.05
C1005X5R0J474K	X5R	6.3V	470,000	± 10%	0.50 ± 0.05
C1005X5R0J474M	X5R	6.3V	470,000	± 20%	0.50 ± 0.05
C1005X5R0J105K	X5R	6.3V	1,000,000	± 10%	0.50 ± 0.05
C1005X5R0J105M	X5R	6.3V	1,000,000	± 20%	0.50 ± 0.05
C1005X5R0J225K	X5R	6.3V	2,200,000	± 10%	0.50 ± 0.05
C1005X5R0J225M	X5R	6.3V	2,200,000	± 20%	0.50 ± 0.05
C1005X5R0J335K	X5R	6.3V	3,300,000	± 10%	0.50 ± 0.05
C1005X5R0J335M	X5R	6.3V	3,300,000	± 20%	0.50 ± 0.05
C1005X5R0J475K	X5R	6.3V	4,700,000	± 10%	0.50 ± 0.05
C1005X5R0J475M	X5R	6.3V	4,700,000	± 20%	0.50 ± 0.05
C1005X5R0G225K	X5R	4V	2,200,000	± 10%	0.50 ± 0.05
C1005X5R0G225M	X5R	4V	2,200,000	± 20%	0.50 ± 0.05
C1005X5R0G335K	X5R	4V	3,300,000	± 10%	0.50 ± 0.05
C1005X5R0G335M	X5R	4V	3,300,000	± 20%	0.50 ± 0.05
C1005X5R0G475K	X5R	4V	4,700,000	± 10%	0.50 ± 0.05
C1005X5R0G475M	X5R	4V	4,700,000	± 20%	0.50 ± 0.05
C1005X6S1A105K	X6S	10V	1,000,000	± 10%	0.50 ± 0.05
C1005X6S1A105M	X6S	10V	1,000,000	± 20%	0.50 ± 0.05
C1005X6S0J105K	X6S	6.3V	1,000,000	± 10%	0.50 ± 0.05
C1005X6S0J105M	X6S	6.3V	1,000,000	± 20%	0.50 ± 0.05
C1005X6S0G105K	X6S	4V	1,000,000	± 10%	0.50 ± 0.05
C1005X6S0G105M	X6S	4V	1,000,000	± 20%	0.50 ± 0.05
C1005X6S0G225K	X6S	4V	2,200,000	± 10%	0.50 ± 0.05
C1005X6S0G225M	X6S	4V	2,200,000	± 20%	0.50 ± 0.05

Capacitance Range Table

C1005 [EIA CC0402]

Class 3 (General Purpose)

Temperature Characteristics: Y5V (+22/-82%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1005Y5V1H103Z	Y5V	50V	10,000	+80/-20%	0.50 ± 0.05
C1005Y5V1E104Z	Y5V	25V	100,000	+80/-20%	0.50 ± 0.05
C1005Y5V1E224Z	Y5V	25V	220,000	+80/-20%	0.50 ± 0.05
C1005Y5V1C104Z	Y5V	16V	100,000	+80/-20%	0.50 ± 0.05
C1005Y5V1C224Z	Y5V	16V	220,000	+80/-20%	0.50 ± 0.05
C1005Y5V1A224Z	Y5V	10V	220,000	+80/-20%	0.50 ± 0.05
C1005Y5V1A474Z	Y5V	10V	470,000	+80/-20%	0.50 ± 0.05
C1005Y5V0J105Z	Y5V	6.3V	1,000,000	+80/-20%	0.50 ± 0.05

Capacitance Range Chart

C1608 [EIA CC0603]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC)
Rated Voltage: 50V (1H), 25V (1E)

Capacitance (pF)	Cap Code	Tolerance	C0G	
			1H (50V)	1E (25V)
0.50	0R5	B: ± 0.1pF		
0.75	R75	C: ± 0.25pF		
1.0	010			
1.2	1R2			
1.5	1R5			
1.8	1R8			
2.2	2R2			
2.7	2R7			
3.3	3R3			
3.9	3R9			
4.7	4R7			
5.6	5R6	C: ± 0.25pF		
6.8	6R8	D: ± 0.5pF		
8.2	8R2			
10	100			
12	120	J: ± 05%		
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			
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			

Standard Thickness

0.80 ± 0.15 mm

• All specifications are subject to change without notice. Please read the precautions before using the product.

Capacitance Range Chart

C1608 [EIA CC0603]

Capacitance Range Chart

Temperature Characteristics: X5R (± 15%), X6S (± 22%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J), 4V (0G)

Capacitance (pF)	Cap Code	Tolerance	X5R						X6S	
			1H (50V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)	0G (4V)	1A (10V)	0G (4V)
100,000	104	K: ± 10%								
150,000	154	M: ± 20%								
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									

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), Y5V (+22/-82%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

Capacitance (pF)	Cap Code	Tolerance	X7R				Y5V				
			1H (50V)	1E (25V)	1C (16V)	1A (10V)	1H (50V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)
100	101	K: ± 10%									
220	221	M: ± 20%									
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	K: ± 10%									
150,000	154	M: ± 20%									
220,000	224	Z: +80/-20%									
330,000	334										
470,000	474										
680,000	684										
1,000,000	105										
2,200,000	225										
4,700,000	475										
10,000,000	106										

• **Z (+80/-20%) tolerance is standard for Y5V temperature characteristic. Does not applies to Class 2 temperature characteristics (X5R, X7R, etc.)**

Standard Thickness

0.50 ± 0.05 mm 0.80 ± 0.15 mm

Capacitance Range Table

C1608 [EIA CC0603]

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1608C0G1H0R5B	C0G	50V	0.5	± 0.10pF	0.80 ± 0.15
C1608C0G1H0R5C	C0G	50V	0.5	± 0.25pF	0.80 ± 0.15
C1608C0G1HR75C	C0G	50V	0.8	± 0.25pF	0.80 ± 0.15
C1608C0G1H010B	C0G	50V	1.0	± 0.10pF	0.80 ± 0.15
C1608C0G1H010C	C0G	50V	1.0	± 0.25pF	0.80 ± 0.15
C1608C0G1H1R2B	C0G	50V	1.2	± 0.10pF	0.80 ± 0.15
C1608C0G1H1R2C	C0G	50V	1.2	± 0.25pF	0.80 ± 0.15
C1608C0G1H1R5B	C0G	50V	1.5	± 0.10pF	0.80 ± 0.15
C1608C0G1H1R5C	C0G	50V	1.5	± 0.25pF	0.80 ± 0.15
C1608C0G1H1R8B	C0G	50V	1.8	± 0.10pF	0.80 ± 0.15
C1608C0G1H1R8C	C0G	50V	1.8	± 0.25pF	0.80 ± 0.15
C1608C0G1H020B	C0G	50V	2.0	± 0.10pF	0.80 ± 0.15
C1608C0G1H020C	C0G	50V	2.0	± 0.25pF	0.80 ± 0.15
C1608C0G1H2R2B	C0G	50V	2.2	± 0.10pF	0.80 ± 0.15
C1608C0G1H2R2C	C0G	50V	2.2	± 0.25pF	0.80 ± 0.15
C1608C0G1H2R7B	C0G	50V	2.7	± 0.10pF	0.80 ± 0.15
C1608C0G1H2R7C	C0G	50V	2.7	± 0.25pF	0.80 ± 0.15
C1608C0G1H030B	C0G	50V	3.0	± 0.10pF	0.80 ± 0.15
C1608C0G1H030C	C0G	50V	3.0	± 0.25pF	0.80 ± 0.15
C1608C0G1H3R3B	C0G	50V	3.3	± 0.10pF	0.80 ± 0.15
C1608C0G1H3R3C	C0G	50V	3.3	± 0.25pF	0.80 ± 0.15
C1608C0G1H3R9B	C0G	50V	3.9	± 0.10pF	0.80 ± 0.15
C1608C0G1H3R9C	C0G	50V	3.9	± 0.25pF	0.80 ± 0.15
C1608C0G1H040B	C0G	50V	4.0	± 0.10pF	0.80 ± 0.15
C1608C0G1H040C	C0G	50V	4.0	± 0.25pF	0.80 ± 0.15
C1608C0G1H4R7B	C0G	50V	4.7	± 0.10pF	0.80 ± 0.15
C1608C0G1H4R7C	C0G	50V	4.7	± 0.25pF	0.80 ± 0.15
C1608C0G1H050B	C0G	50V	5.0	± 0.10pF	0.80 ± 0.15
C1608C0G1H050C	C0G	50V	5.0	± 0.25pF	0.80 ± 0.15
C1608C0G1H5R6C	C0G	50V	5.6	± 0.25pF	0.80 ± 0.15
C1608C0G1H5R6D	C0G	50V	5.6	± 0.50pF	0.80 ± 0.15
C1608C0G1H060C	C0G	50V	6.0	± 0.25pF	0.80 ± 0.15
C1608C0G1H060D	C0G	50V	6.0	± 0.50pF	0.80 ± 0.15
C1608C0G1H6R8C	C0G	50V	6.8	± 0.25pF	0.80 ± 0.15
C1608C0G1H6R8D	C0G	50V	6.8	± 0.50pF	0.80 ± 0.15
C1608C0G1H070C	C0G	50V	7.0	± 0.25pF	0.80 ± 0.15
C1608C0G1H070D	C0G	50V	7.0	± 0.50pF	0.80 ± 0.15
C1608C0G1H080C	C0G	50V	8.0	± 0.25pF	0.80 ± 0.15
C1608C0G1H080D	C0G	50V	8.0	± 0.50pF	0.80 ± 0.15
C1608C0G1H8R2C	C0G	50V	8.2	± 0.25pF	0.80 ± 0.15
C1608C0G1H8R2D	C0G	50V	8.2	± 0.50pF	0.80 ± 0.15
C1608C0G1H090C	C0G	50V	9.0	± 0.25pF	0.80 ± 0.15
C1608C0G1H090D	C0G	50V	9.0	± 0.50pF	0.80 ± 0.15
C1608C0G1H100C	C0G	50V	10.0	± 0.25pF	0.80 ± 0.15
C1608C0G1H100D	C0G	50V	10.0	± 0.50pF	0.80 ± 0.15
C1608C0G1H110J	C0G	50V	11.0	± 5%	0.80 ± 0.15
C1608C0G1H120J	C0G	50V	12.0	± 5%	0.80 ± 0.15
C1608C0G1H130J	C0G	50V	13.0	± 5%	0.80 ± 0.15
C1608C0G1H150J	C0G	50V	15.0	± 5%	0.80 ± 0.15
C1608C0G1H160J	C0G	50V	16.0	± 5%	0.80 ± 0.15
C1608C0G1H180J	C0G	50V	18.0	± 5%	0.80 ± 0.15
C1608C0G1H200J	C0G	50V	20.0	± 5%	0.80 ± 0.15
C1608C0G1H220J	C0G	50V	22.0	± 5%	0.80 ± 0.15
C1608C0G1H240J	C0G	50V	24.0	± 5%	0.80 ± 0.15
C1608C0G1H270J	C0G	50V	27.0	± 5%	0.80 ± 0.15
C1608C0G1H300J	C0G	50V	30.0	± 5%	0.80 ± 0.15

Capacitance Range Table

C1608 [EIA CC0603]

Class 1 (Temperature Compensating) (Continued)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1608C0G1H330J	C0G	50V	33	± 5%	0.80 ± 0.15
C1608C0G1H360J	C0G	50V	36	± 5%	0.80 ± 0.15
C1608C0G1H390J	C0G	50V	39	± 5%	0.80 ± 0.15
C1608C0G1H430J	C0G	50V	43	± 5%	0.80 ± 0.15
C1608C0G1H470J	C0G	50V	47	± 5%	0.80 ± 0.15
C1608C0G1H510J	C0G	50V	51	± 5%	0.80 ± 0.15
C1608C0G1H560J	C0G	50V	56	± 5%	0.80 ± 0.15
C1608C0G1H620J	C0G	50V	62	± 5%	0.80 ± 0.15
C1608C0G1H680J	C0G	50V	68	± 5%	0.80 ± 0.15
C1608C0G1H750J	C0G	50V	75	± 5%	0.80 ± 0.15
C1608C0G1H820J	C0G	50V	82	± 5%	0.80 ± 0.15
C1608C0G1H910J	C0G	50V	91	± 5%	0.80 ± 0.15
C1608C0G1H101J	C0G	50V	100	± 5%	0.80 ± 0.15
C1608C0G1H111J	C0G	50V	110	± 5%	0.80 ± 0.15
C1608C0G1H121J	C0G	50V	120	± 5%	0.80 ± 0.15
C1608C0G1H131J	C0G	50V	130	± 5%	0.80 ± 0.15
C1608C0G1H151J	C0G	50V	150	± 5%	0.80 ± 0.15
C1608C0G1H161J	C0G	50V	160	± 5%	0.80 ± 0.15
C1608C0G1H181J	C0G	50V	180	± 5%	0.80 ± 0.15
C1608C0G1H201J	C0G	50V	200	± 5%	0.80 ± 0.15
C1608C0G1H221J	C0G	50V	220	± 5%	0.80 ± 0.15
C1608C0G1H241J	C0G	50V	240	± 5%	0.80 ± 0.15
C1608C0G1H271J	C0G	50V	270	± 5%	0.80 ± 0.15
C1608C0G1H301J	C0G	50V	300	± 5%	0.80 ± 0.15
C1608C0G1H331J	C0G	50V	330	± 5%	0.80 ± 0.15
C1608C0G1H361J	C0G	50V	360	± 5%	0.80 ± 0.15
C1608C0G1H391J	C0G	50V	390	± 5%	0.80 ± 0.15
C1608C0G1H431J	C0G	50V	430	± 5%	0.80 ± 0.15
C1608C0G1H471J	C0G	50V	470	± 5%	0.80 ± 0.15
C1608C0G1H511J	C0G	50V	510	± 5%	0.80 ± 0.15
C1608C0G1H561J	C0G	50V	560	± 5%	0.80 ± 0.15
C1608C0G1H621J	C0G	50V	620	± 5%	0.80 ± 0.15
C1608C0G1H681J	C0G	50V	680	± 5%	0.80 ± 0.15
C1608C0G1H751J	C0G	50V	750	± 5%	0.80 ± 0.15
C1608C0G1H821J	C0G	50V	820	± 5%	0.80 ± 0.15
C1608C0G1H911J	C0G	50V	910	± 5%	0.80 ± 0.15
C1608C0G1H102J	C0G	50V	1,000	± 5%	0.80 ± 0.15
C1608C0G1H122J	C0G	50V	1,200	± 5%	0.80 ± 0.15
C1608C0G1H152J	C0G	50V	1,500	± 5%	0.80 ± 0.15
C1608C0G1H182J	C0G	50V	1,800	± 5%	0.80 ± 0.15
C1608C0G1H222J	C0G	50V	2,200	± 5%	0.80 ± 0.15
C1608C0G1H272J	C0G	50V	2,700	± 5%	0.80 ± 0.15
C1608C0G1H332J	C0G	50V	3,300	± 5%	0.80 ± 0.15
C1608C0G1H392J	C0G	50V	3,900	± 5%	0.80 ± 0.15
C1608C0G1H472J	C0G	50V	4,700	± 5%	0.80 ± 0.15
C1608C0G1H562J	C0G	50V	5,600	± 5%	0.80 ± 0.15
C1608C0G1H682J	C0G	50V	6,800	± 5%	0.80 ± 0.15
C1608C0G1H822J	C0G	50V	8,200	± 5%	0.80 ± 0.15
C1608C0G1H103J	C0G	50V	10,000	± 5%	0.80 ± 0.15
C1608C0G1E392J	C0G	25V	3,900	± 5%	0.80 ± 0.15
C1608C0G1E472J	C0G	25V	4,700	± 5%	0.80 ± 0.15
C1608C0G1E562J	C0G	25V	5,600	± 5%	0.80 ± 0.15
C1608C0G1E682J	C0G	25V	6,800	± 5%	0.80 ± 0.15
C1608C0G1E822J	C0G	25V	8,200	± 5%	0.80 ± 0.15
C1608C0G1E103J	C0G	25V	10,000	± 5%	0.80 ± 0.15

Capacitance Range Table

C1608 [EIA CC0603]

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1608X7R1H101K	X7R	50V	100	± 10%	0.80 ± 0.15
C1608X7R1H101M	X7R	50V	100	± 20%	0.80 ± 0.15
C1608X7R1H221K	X7R	50V	220	± 10%	0.80 ± 0.15
C1608X7R1H221M	X7R	50V	220	± 20%	0.80 ± 0.15
C1608X7R1H331K	X7R	50V	330	± 10%	0.80 ± 0.15
C1608X7R1H331M	X7R	50V	330	± 20%	0.80 ± 0.15
C1608X7R1H471K	X7R	50V	470	± 10%	0.80 ± 0.15
C1608X7R1H471M	X7R	50V	470	± 20%	0.80 ± 0.15
C1608X7R1H681K	X7R	50V	680	± 10%	0.80 ± 0.15
C1608X7R1H681M	X7R	50V	680	± 20%	0.80 ± 0.15
C1608X7R1H102J	X7R	50V	1,000	± 5%	0.80 ± 0.15
C1608X7R1H102K	X7R	50V	1,000	± 10%	0.80 ± 0.15
C1608X7R1H102M	X7R	50V	1,000	± 20%	0.80 ± 0.15
C1608X7R1H152K	X7R	50V	1,500	± 10%	0.80 ± 0.15
C1608X7R1H152M	X7R	50V	1,500	± 20%	0.80 ± 0.15
C1608X7R1H222K	X7R	50V	2,200	± 10%	0.80 ± 0.15
C1608X7R1H222M	X7R	50V	2,200	± 20%	0.80 ± 0.15
C1608X7R1H332K	X7R	50V	3,300	± 10%	0.80 ± 0.15
C1608X7R1H332M	X7R	50V	3,300	± 20%	0.80 ± 0.15
C1608X7R1H472K	X7R	50V	4,700	± 10%	0.80 ± 0.15
C1608X7R1H472M	X7R	50V	4,700	± 20%	0.80 ± 0.15
C1608X7R1H682K	X7R	50V	6,800	± 10%	0.80 ± 0.15
C1608X7R1H682M	X7R	50V	6,800	± 20%	0.80 ± 0.15
C1608X7R1H103J	X7R	50V	10,000	± 5%	0.80 ± 0.15
C1608X7R1H103K	X7R	50V	10,000	± 10%	0.80 ± 0.15
C1608X7R1H103M	X7R	50V	10,000	± 20%	0.80 ± 0.15
C1608X7R1H153K	X7R	50V	15,000	± 10%	0.80 ± 0.15
C1608X7R1H153M	X7R	50V	15,000	± 20%	0.80 ± 0.15
C1608X7R1H223K	X7R	50V	22,000	± 10%	0.80 ± 0.15
C1608X7R1H223M	X7R	50V	22,000	± 20%	0.80 ± 0.15
C1608X7R1H333K	X7R	50V	33,000	± 10%	0.80 ± 0.15
C1608X7R1H333M	X7R	50V	33,000	± 20%	0.80 ± 0.15
C1608X7R1H473K	X7R	50V	47,000	± 10%	0.80 ± 0.15
C1608X7R1H473M	X7R	50V	47,000	± 20%	0.80 ± 0.15
C1608X7R1H683K	X7R	50V	68,000	± 10%	0.80 ± 0.15
C1608X7R1H683M	X7R	50V	68,000	± 20%	0.80 ± 0.15
C1608X7R1H104K	X7R	50V	100,000	± 10%	0.80 ± 0.15
C1608X7R1H104M	X7R	50V	100,000	± 20%	0.80 ± 0.15
C1608X7R1H154K	X7R	50V	150,000	± 10%	0.80 ± 0.15
C1608X7R1H154M	X7R	50V	150,000	± 20%	0.80 ± 0.15
C1608X7R1H224K	X7R	50V	220,000	± 10%	0.80 ± 0.15
C1608X7R1H224M	X7R	50V	220,000	± 20%	0.80 ± 0.15
C1608X7R1H334K	X7R	50V	330,000	± 10%	0.80 ± 0.15
C1608X7R1H334M	X7R	50V	330,000	± 20%	0.80 ± 0.15
C1608X7R1H474K	X7R	50V	470,000	± 10%	0.80 ± 0.15
C1608X7R1H474M	X7R	50V	470,000	± 20%	0.80 ± 0.15
C1608X7R1E103J	X7R	25V	10,000	± 5%	0.80 ± 0.15
C1608X7R1E103K	X7R	25V	10,000	± 10%	0.80 ± 0.15
C1608X7R1E103M	X7R	25V	10,000	± 20%	0.80 ± 0.15
C1608X7R1E153K	X7R	25V	15,000	± 10%	0.80 ± 0.15
C1608X7R1E153M	X7R	25V	15,000	± 20%	0.80 ± 0.15
C1608X7R1E223K	X7R	25V	22,000	± 10%	0.80 ± 0.15
C1608X7R1E223M	X7R	25V	22,000	± 20%	0.80 ± 0.15
C1608X7R1E333K	X7R	25V	33,000	± 10%	0.80 ± 0.15
C1608X7R1E333M	X7R	25V	33,000	± 20%	0.80 ± 0.15

Capacitance Range Table

C1608 [EIA CC0603]

Class 2 (Temperature Stable) (Continued)

Temperature Characteristics: X7R (± 15%), X5R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1608X7R1E473K	X7R	25V	47,000	± 10%	0.80 ± 0.15
C1608X7R1E473M	X7R	25V	47,000	± 20%	0.80 ± 0.15
C1608X7R1E683K	X7R	25V	68,000	± 10%	0.80 ± 0.15
C1608X7R1E683M	X7R	25V	68,000	± 20%	0.80 ± 0.15
C1608X7R1E104K	X7R	25V	100,000	± 10%	0.80 ± 0.15
C1608X7R1E104M	X7R	25V	100,000	± 20%	0.80 ± 0.15
C1608X7R1E154K	X7R	25V	150,000	± 10%	0.80 ± 0.15
C1608X7R1E154M	X7R	25V	150,000	± 20%	0.80 ± 0.15
C1608X7R1E224K	X7R	25V	220,000	± 10%	0.80 ± 0.15
C1608X7R1E224M	X7R	25V	220,000	± 20%	0.80 ± 0.15
C1608X7R1E334K	X7R	25V	330,000	± 10%	0.80 ± 0.15
C1608X7R1E334M	X7R	25V	330,000	± 20%	0.80 ± 0.15
C1608X7R1E474K	X7R	25V	470,000	± 10%	0.80 ± 0.15
C1608X7R1E474M	X7R	25V	470,000	± 20%	0.80 ± 0.15
C1608X7R1E684K	X7R	25V	680,000	± 10%	0.80 ± 0.15
C1608X7R1E684M	X7R	25V	680,000	± 20%	0.80 ± 0.15
C1608X7R1E105K	X7R	25V	1,000,000	± 10%	0.80 ± 0.15
C1608X7R1E105M	X7R	25V	1,000,000	± 20%	0.80 ± 0.15
C1608X7R1C223K	X7R	16V	22,000	± 10%	0.80 ± 0.15
C1608X7R1C223M	X7R	16V	22,000	± 20%	0.80 ± 0.15
C1608X7R1C333K	X7R	16V	33,000	± 10%	0.80 ± 0.15
C1608X7R1C333M	X7R	16V	33,000	± 20%	0.80 ± 0.15
C1608X7R1C473K	X7R	16V	47,000	± 10%	0.80 ± 0.15
C1608X7R1C473M	X7R	16V	47,000	± 20%	0.80 ± 0.15
C1608X7R1C683K	X7R	16V	68,000	± 10%	0.80 ± 0.15
C1608X7R1C683M	X7R	16V	68,000	± 20%	0.80 ± 0.15
C1608X7R1C104K	X7R	16V	100,000	± 10%	0.80 ± 0.15
C1608X7R1C104M	X7R	16V	100,000	± 20%	0.80 ± 0.15
C1608X7R1C154K	X7R	16V	150,000	± 10%	0.80 ± 0.15
C1608X7R1C154M	X7R	16V	150,000	± 20%	0.80 ± 0.15
C1608X7R1C224K	X7R	16V	220,000	± 10%	0.80 ± 0.15
C1608X7R1C224M	X7R	16V	220,000	± 20%	0.80 ± 0.15
C1608X7R1C334K	X7R	16V	330,000	± 10%	0.80 ± 0.15
C1608X7R1C334M	X7R	16V	330,000	± 20%	0.80 ± 0.15
C1608X7R1C474K	X7R	16V	470,000	± 10%	0.80 ± 0.15
C1608X7R1C474M	X7R	16V	470,000	± 20%	0.80 ± 0.15
C1608X7R1C684K	X7R	16V	680,000	± 10%	0.80 ± 0.15
C1608X7R1C684M	X7R	16V	680,000	± 20%	0.80 ± 0.15
C1608X7R1C105K	X7R	16V	1,000,000	± 10%	0.80 ± 0.15
C1608X7R1C105M	X7R	16V	1,000,000	± 20%	0.80 ± 0.15
C1608X7R1A224K	X7R	10V	220,000	± 10%	0.80 ± 0.15
C1608X7R1A224M	X7R	10V	220,000	± 20%	0.80 ± 0.15
C1608X7R1A334K	X7R	10V	330,000	± 10%	0.80 ± 0.15
C1608X7R1A334M	X7R	10V	330,000	± 20%	0.80 ± 0.15
C1608X7R1A474K	X7R	10V	470,000	± 10%	0.80 ± 0.15
C1608X7R1A474M	X7R	10V	470,000	± 20%	0.80 ± 0.15
C1608X7R1A105K	X7R	10V	1,000,000	± 10%	0.80 ± 0.15
C1608X7R1A105M	X7R	10V	1,000,000	± 20%	0.80 ± 0.15
C1608X7R1A225K	X7R	10V	2,200,000	± 10%	0.80 ± 0.15
C1608X7R1A225M	X7R	10V	2,200,000	± 20%	0.80 ± 0.15
C1608X7R0J225K	X7R	6.3V	2,200,000	± 10%	0.80 ± 0.15
C1608X7R0J225M	X7R	6.3V	2,200,000	± 20%	0.80 ± 0.15
C1608X5R1H104K	X5R	50V	100,000	± 10%	0.80 ± 0.15
C1608X5R1H104M	X5R	50V	100,000	± 20%	0.80 ± 0.15
C1608X5R1H154K	X5R	50V	150,000	± 10%	0.80 ± 0.15
C1608X5R1H154M	X5R	50V	150,000	± 20%	0.80 ± 0.15

Capacitance Range Table

C1608 [EIA CC0603]

Class 2 (Temperature Stable) (Continued)

Temperature Characteristics: X5R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1608X5R1H224K	X5R	50V	220,000	± 10%	0.80 ± 0.15
C1608X5R1H224M	X5R	50V	220,000	± 20%	0.80 ± 0.15
C1608X5R1H334K	X5R	50V	330,000	± 10%	0.80 ± 0.15
C1608X5R1H334M	X5R	50V	330,000	± 20%	0.80 ± 0.15
C1608X5R1H474K	X5R	50V	470,000	± 10%	0.80 ± 0.15
C1608X5R1H474M	X5R	50V	470,000	± 20%	0.80 ± 0.15
C1608X5R1H684K	X5R	50V	680,000	± 10%	0.80 ± 0.15
C1608X5R1H684M	X5R	50V	680,000	± 20%	0.80 ± 0.15
C1608X5R1H105K	X5R	50V	1,000,000	± 10%	0.80 ± 0.15
C1608X5R1H105M	X5R	50V	1,000,000	± 20%	0.80 ± 0.15
C1608X5R1E154K	X5R	25V	150,000	± 10%	0.80 ± 0.15
C1608X5R1E154M	X5R	25V	150,000	± 20%	0.80 ± 0.15
C1608X5R1E224K	X5R	25V	220,000	± 10%	0.80 ± 0.15
C1608X5R1E224M	X5R	25V	220,000	± 20%	0.80 ± 0.15
C1608X5R1E334K	X5R	25V	330,000	± 10%	0.80 ± 0.15
C1608X5R1E334M	X5R	25V	330,000	± 20%	0.80 ± 0.15
C1608X5R1E474K	X5R	25V	470,000	± 10%	0.80 ± 0.15
C1608X5R1E474M	X5R	25V	470,000	± 20%	0.80 ± 0.15
C1608X5R1E105K	X5R	25V	1,000,000	± 10%	0.80 ± 0.15
C1608X5R1E105M	X5R	25V	1,000,000	± 20%	0.80 ± 0.15
C1608X5R1E155K	X5R	25V	1,500,000	± 10%	0.80 ± 0.15
C1608X5R1E155M	X5R	25V	1,500,000	± 20%	0.80 ± 0.15
C1608X5R1E225K	X5R	25V	2,200,000	± 10%	0.80 ± 0.15
C1608X5R1E225M	X5R	25V	2,200,000	± 20%	0.80 ± 0.15
C1608X5R1C224K	X5R	16V	220,000	± 10%	0.80 ± 0.15
C1608X5R1C224M	X5R	16V	220,000	± 20%	0.80 ± 0.15
C1608X5R1C334K	X5R	16V	330,000	± 10%	0.80 ± 0.15
C1608X5R1C334M	X5R	16V	330,000	± 20%	0.80 ± 0.15
C1608X5R1C474K	X5R	16V	470,000	± 10%	0.80 ± 0.15
C1608X5R1C474M	X5R	16V	470,000	± 20%	0.80 ± 0.15
C1608X5R1C684K	X5R	16V	680,000	± 10%	0.80 ± 0.15
C1608X5R1C684M	X5R	16V	680,000	± 20%	0.80 ± 0.15
C1608X5R1C105K	X5R	16V	1,000,000	± 10%	0.80 ± 0.15
C1608X5R1C105M	X5R	16V	1,000,000	± 20%	0.80 ± 0.15
C1608X5R1C225K/0.50	X5R	16V	2,200,000	± 10%	0.50 ± 0.05
C1608X5R1C225M/0.50	X5R	16V	2,200,000	± 20%	0.50 ± 0.05
C1608X5R1C225K/0.80	X5R	16V	2,200,000	± 10%	0.80 ± 0.15
C1608X5R1C225M/0.80	X5R	16V	2,200,000	± 20%	0.80 ± 0.15
C1608X5R1C335K	X5R	16V	3,300,000	± 10%	0.80 ± 0.15
C1608X5R1C335M	X5R	16V	3,300,000	± 20%	0.80 ± 0.15
C1608X5R1C475K	X5R	16V	4,700,000	± 10%	0.80 ± 0.15
C1608X5R1C475M	X5R	16V	4,700,000	± 20%	0.80 ± 0.15
C1608X5R1A224K	X5R	10V	220,000	± 10%	0.80 ± 0.15
C1608X5R1A224M	X5R	10V	220,000	± 20%	0.80 ± 0.15
C1608X5R1A334K	X5R	10V	330,000	± 10%	0.80 ± 0.15
C1608X5R1A334M	X5R	10V	330,000	± 20%	0.80 ± 0.15
C1608X5R1A474K	X5R	10V	470,000	± 10%	0.80 ± 0.15
C1608X5R1A474M	X5R	10V	470,000	± 20%	0.80 ± 0.15
C1608X5R1A684K	X5R	10V	680,000	± 10%	0.80 ± 0.15
C1608X5R1A684M	X5R	10V	680,000	± 20%	0.80 ± 0.15
C1608X5R1A105K	X5R	10V	1,000,000	± 10%	0.80 ± 0.15
C1608X5R1A105M	X5R	10V	1,000,000	± 20%	0.80 ± 0.15
C1608X5R1A225K/0.50	X5R	10V	2,200,000	± 10%	0.50 ± 0.05
C1608X5R1A225M/0.50	X5R	10V	2,200,000	± 20%	0.50 ± 0.05
C1608X5R1A225K/0.80	X5R	10V	2,200,000	± 10%	0.80 ± 0.15
C1608X5R1A225M/0.80	X5R	10V	2,200,000	± 20%	0.80 ± 0.15

Capacitance Range Table

C1608 [EIA CC0603]

Class 2 (Temperature Stable) (Continued)

Temperature Characteristics: X5R (± 15%), X6S (± 22%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1608X5R1A335K	X5R	10V	3,300,000	± 10%	0.80 ± 0.15
C1608X5R1A335M	X5R	10V	3,300,000	± 20%	0.80 ± 0.15
C1608X5R1A475K/0.50	X5R	10V	4,700,000	± 10%	0.50 ± 0.05
C1608X5R1A475M/0.50	X5R	10V	4,700,000	± 20%	0.50 ± 0.05
C1608X5R1A475K/0.80	X5R	10V	4,700,000	± 10%	0.80 ± 0.15
C1608X5R1A475M/0.80	X5R	10V	4,700,000	± 20%	0.80 ± 0.15
C1608X5R1A685K	X5R	10V	6,800,000	± 10%	0.80 ± 0.15
C1608X5R1A685M	X5R	10V	6,800,000	± 20%	0.80 ± 0.15
C1608X5R1A106K	X5R	10V	10,000,000	± 10%	0.80 ± 0.15
C1608X5R1A106M	X5R	10V	10,000,000	± 20%	0.80 ± 0.15
C1608X5R0J105K	X5R	6.3V	1,000,000	± 10%	0.80 ± 0.15
C1608X5R0J105M	X5R	6.3V	1,000,000	± 20%	0.80 ± 0.15
C1608X5R0J155K	X5R	6.3V	1,500,000	± 10%	0.80 ± 0.15
C1608X5R0J155M	X5R	6.3V	1,500,000	± 20%	0.80 ± 0.15
C1608X5R0J225K	X5R	6.3V	2,200,000	± 10%	0.80 ± 0.15
C1608X5R0J225M	X5R	6.3V	2,200,000	± 20%	0.80 ± 0.15
C1608X5R0J335K	X5R	6.3V	3,300,000	± 10%	0.80 ± 0.15
C1608X5R0J335M	X5R	6.3V	3,300,000	± 20%	0.80 ± 0.15
C1608X5R0J475K/0.50	X5R	6.3V	4,700,000	± 10%	0.50 ± 0.05
C1608X5R0J475M/0.50	X5R	6.3V	4,700,000	± 20%	0.50 ± 0.05
C1608X5R0J475K/0.80	X5R	6.3V	4,700,000	± 10%	0.80 ± 0.15
C1608X5R0J475M/0.80	X5R	6.3V	4,700,000	± 20%	0.80 ± 0.15
C1608X5R0J685K	X5R	6.3V	6,800,000	± 10%	0.80 ± 0.15
C1608X5R0J685M	X5R	6.3V	6,800,000	± 20%	0.80 ± 0.15
C1608X5R0J106K	X5R	6.3V	10,000,000	± 10%	0.80 ± 0.15
C1608X5R0J106M	X5R	6.3V	10,000,000	± 20%	0.80 ± 0.15
C1608X5R0G106M	X5R	4V	10,000,000	± 20%	0.80 ± 0.15
C1608X6S1A225K/0.50	X6S	10V	2,200,000	± 10%	0.50 ± 0.05
C1608X6S1A225M/0.50	X6S	10V	2,200,000	± 20%	0.50 ± 0.05
C1608X6S1A475K	X6S	10V	4,700,000	± 10%	0.80 ± 0.15
C1608X6S1A475M	X6S	10V	4,700,000	± 20%	0.80 ± 0.15
C1608X6S0G225K/0.50	X6S	4V	2,200,000	± 10%	0.50 ± 0.05
C1608X6S0G225M/0.50	X6S	4V	2,200,000	± 20%	0.50 ± 0.05
C1608X6S0G475K/0.50	X6S	4V	4,700,000	± 10%	0.50 ± 0.05
C1608X6S0G475M/0.50	X6S	4V	4,700,000	± 20%	0.50 ± 0.05
C1608X6S0G475K/0.80	X6S	4V	4,700,000	± 10%	0.80 ± 0.15
C1608X6S0G475M/0.80	X6S	4V	4,700,000	± 20%	0.80 ± 0.15
C1608X6S0G106K	X6S	4V	10,000,000	± 10%	0.80 ± 0.15
C1608X6S0G106M	X6S	4V	10,000,000	± 20%	0.80 ± 0.15

Capacitance Range Table

C1608 [EIA CC0603]

Class 3 (General Purpose)

Temperature Characteristics: Y5V (+22/-82%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1608Y5V1H104Z	Y5V	50V	100,000	+80/-20%	0.80 ± 0.15
C1608Y5V1H224Z	Y5V	50V	220,000	+80/-20%	0.80 ± 0.15
C1608Y5V1H474Z	Y5V	50V	470,000	+80/-20%	0.80 ± 0.15
C1608Y5V1E104Z	Y5V	25V	100,000	+80/-20%	0.80 ± 0.15
C1608Y5V1E224Z	Y5V	25V	220,000	+80/-20%	0.80 ± 0.15
C1608Y5V1E474Z	Y5V	25V	470,000	+80/-20%	0.80 ± 0.15
C1608Y5V1E105Z	Y5V	25V	1,000,000	+80/-20%	0.80 ± 0.15
C1608Y5V1C104Z	Y5V	16V	100,000	+80/-20%	0.80 ± 0.15
C1608Y5V1C105Z	Y5V	16V	1,000,000	+80/-20%	0.80 ± 0.15
C1608Y5V1C225Z	Y5V	16V	2,200,000	+80/-20%	0.80 ± 0.15
C1608Y5V1A105Z	Y5V	10V	1,000,000	+80/-20%	0.80 ± 0.15
C1608Y5V1A225Z	Y5V	10V	2,200,000	+80/-20%	0.80 ± 0.15
C1608Y5V0J475Z	Y5V	6.3V	4,700,000	+80/-20%	0.80 ± 0.15
C1608Y5V0J106Z	Y5V	6.3V	10,000,000	+80/-20%	0.80 ± 0.15

Capacitance Range Chart

C2012 [EIA CC0805]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC)
Rated Voltage: 50V (1H), 25V (1E)

Capacitance (pF)	Cap Code	Tolerance	C0G	
			1H (50V)	1E (25V)
10	100	D: ± 0.5pF		
100	101	J: ± 5%		
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			
1,200	122			
1,500	152			
1,800	182			
2,200	222			
2,700	272			
3,300	332			
3,900	392			
4,700	472			
5,600	562			
6,800	682			
8,200	822			
10,000	103			
15,000	153			
22,000	223			
33,000	333			

Standard Thickness

0.60 ± 0.15 mm 0.85 ± 0.15 mm 1.25 ± 0.20 mm

Capacitance Range Chart

C2012 [EIA CC0805]

Capacitance Range Chart

Temperature Characteristics: X5R (± 15%), X6S (± 22%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J), 4V (0G)

Capacitance (pF)	Cap Code	Tolerance	X5R						X6S		
			1H (50V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)	0G (4V)	1A (10V)	0J (6.3V)	0G (4V)
1,000,000	105	K: ± 10%									
1,500,000	155	M: ± 20%									
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										
22,000,000	336										
22,000,000	476										

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), Y5V (+22/-82%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

Capacitance (pF)	Cap Code	Tolerance	X7R				Y5V				
			1H (50V)	1E (25V)	1C (16V)	1A (10V)	1H (50V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)
1,000	102	K: ± 10%									
2,200	222	M: ± 20%									
4,700	472										
10,000	103										
22,000	223										
47,000	473										
100,000	104	K: ± 10%									
150,000	154	M: ± 20%									
220,000	224	Z: +80/-20%									
330,000	334										
470,000	474										
680,000	684										
1,000,000	105										
1,500,000	155										
2,200,000	225										
3,300,000	335										
4,700,000	475										
10,000,000	106										
22,000,000	226										

• **Z (+80/-20%) tolerance is standard for Y5V temperature characteristic. Does not applies to Class 2 temperature characteristics (X5R, X7R, etc.)**

Standard Thickness

0.60 ± 0.15 mm 0.85 ± 0.15 mm 1.25 ± 0.20 mm

Capacitance Range Table

C2012 [EIA CC0805]

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C2012C0G1H100D	C0G	50V	10	± 0.50pF	0.60 ± 0.15
C2012C0G1H101J	C0G	50V	100	± 5%	0.60 ± 0.15
C2012C0G1H121J	C0G	50V	120	± 5%	0.60 ± 0.15
C2012C0G1H151J	C0G	50V	150	± 5%	0.60 ± 0.15
C2012C0G1H181J	C0G	50V	180	± 5%	0.60 ± 0.15
C2012C0G1H221J	C0G	50V	220	± 5%	0.60 ± 0.15
C2012C0G1H271J	C0G	50V	270	± 5%	0.60 ± 0.15
C2012C0G1H331J	C0G	50V	330	± 5%	0.60 ± 0.15
C2012C0G1H391J	C0G	50V	390	± 5%	0.60 ± 0.15
C2012C0G1H471J	C0G	50V	470	± 5%	0.60 ± 0.15
C2012C0G1H561J	C0G	50V	560	± 5%	0.60 ± 0.15
C2012C0G1H681J	C0G	50V	680	± 5%	0.60 ± 0.15
C2012C0G1H821J	C0G	50V	820	± 5%	0.60 ± 0.15
C2012C0G1H102J	C0G	50V	1,000	± 5%	0.60 ± 0.15
C2012C0G1H122J	C0G	50V	1,200	± 5%	0.60 ± 0.15
C2012C0G1H152J	C0G	50V	1,500	± 5%	0.60 ± 0.15
C2012C0G1H182J/0.60	C0G	50V	1,800	± 5%	0.60 ± 0.15
C2012C0G1H182J/0.85	C0G	50V	1,800	± 5%	0.85 ± 0.15
C2012C0G1H222J/0.60	C0G	50V	2,200	± 5%	0.60 ± 0.15
C2012C0G1H222J/0.85	C0G	50V	2,200	± 5%	0.85 ± 0.15
C2012C0G1H272J/0.60	C0G	50V	2,700	± 5%	0.60 ± 0.15
C2012C0G1H272J/1.25	C0G	50V	2,700	± 5%	1.25 ± 0.20
C2012C0G1H332J/0.60	C0G	50V	3,300	± 5%	0.60 ± 0.15
C2012C0G1H332J/1.25	C0G	50V	3,300	± 5%	1.25 ± 0.20
C2012C0G1H392J/0.60	C0G	50V	3,900	± 5%	0.60 ± 0.15
C2012C0G1H392J/0.85	C0G	50V	3,900	± 5%	0.85 ± 0.15
C2012C0G1H472J/0.60	C0G	50V	4,700	± 5%	0.60 ± 0.15
C2012C0G1H472J/0.85	C0G	50V	4,700	± 5%	0.85 ± 0.15
C2012C0G1H562J/0.60	C0G	50V	5,600	± 5%	0.60 ± 0.15
C2012C0G1H562J/0.85	C0G	50V	5,600	± 5%	0.85 ± 0.15
C2012C0G1H682J/0.60	C0G	50V	6,800	± 5%	0.60 ± 0.15
C2012C0G1H682J/1.25	C0G	50V	6,800	± 5%	1.25 ± 0.20
C2012C0G1H822J/0.60	C0G	50V	8,200	± 5%	0.60 ± 0.15
C2012C0G1H822J/1.25	C0G	50V	8,200	± 5%	1.25 ± 0.20
C2012C0G1H103J/0.60	C0G	50V	10,000	± 5%	0.60 ± 0.15
C2012C0G1H103J/1.25	C0G	50V	10,000	± 5%	1.25 ± 0.20
C2012C0G1H153J	C0G	50V	15,000	± 5%	0.85 ± 0.15
C2012C0G1H223J	C0G	50V	22,000	± 5%	1.25 ± 0.20
C2012C0G1H333J	C0G	50V	33,000	± 5%	1.25 ± 0.20
C2012C0G1E392J	C0G	25V	3,900	± 5%	0.60 ± 0.15
C2012C0G1E472J	C0G	25V	4,700	± 5%	0.60 ± 0.15
C2012C0G1E562J	C0G	25V	5,600	± 5%	0.60 ± 0.15
C2012C0G1E682J	C0G	25V	6,800	± 5%	0.60 ± 0.15
C2012C0G1E822J	C0G	25V	8,200	± 5%	0.60 ± 0.15
C2012C0G1E103J	C0G	25V	10,000	± 5%	0.60 ± 0.15
C2012C0G1E153J	C0G	25V	15,000	± 5%	0.85 ± 0.15
C2012C0G1E223J	C0G	25V	22,000	± 5%	1.25 ± 0.20
C2012C0G1E333J	C0G	25V	33,000	± 5%	1.25 ± 0.20

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C2012X7R1H102K	X7R	50V	1,000	± 10%	0.60 ± 0.15
C2012X7R1H102M	X7R	50V	1,000	± 20%	0.60 ± 0.15

Capacitance Range Table

C2012 [EIA CC0805]

Class 2 (Temperature Stable) (Continued)

Temperature Characteristics: X7R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C2012X7R1H222K	X7R	50V	2,200	± 10%	0.60 ± 0.15
C2012X7R1H222M	X7R	50V	2,200	± 20%	0.60 ± 0.15
C2012X7R1H472K	X7R	50V	4,700	± 10%	0.60 ± 0.15
C2012X7R1H472M	X7R	50V	4,700	± 20%	0.60 ± 0.15
C2012X7R1H103K	X7R	50V	10,000	± 10%	0.60 ± 0.15
C2012X7R1H103M	X7R	50V	10,000	± 20%	0.60 ± 0.15
C2012X7R1H223K/0.60	X7R	50V	22,000	± 10%	0.60 ± 0.15
C2012X7R1H223M/0.60	X7R	50V	22,000	± 20%	0.60 ± 0.15
C2012X7R1H473K/1.25	X7R	50V	47,000	± 10%	1.25 ± 0.20
C2012X7R1H473M/1.25	X7R	50V	47,000	± 20%	1.25 ± 0.20
C2012X7R1H104K/0.85	X7R	50V	100,000	± 10%	0.85 ± 0.15
C2012X7R1H104M/0.85	X7R	50V	100,000	± 20%	0.85 ± 0.15
C2012X7R1H104K/1.25	X7R	50V	100,000	± 10%	1.25 ± 0.20
C2012X7R1H104M/1.25	X7R	50V	100,000	± 20%	1.25 ± 0.20
C2012X7R1H154K	X7R	50V	150,000	± 10%	1.25 ± 0.20
C2012X7R1H154M	X7R	50V	150,000	± 20%	1.25 ± 0.20
C2012X7R1H224K	X7R	50V	220,000	± 10%	1.25 ± 0.20
C2012X7R1H224M	X7R	50V	220,000	± 20%	1.25 ± 0.20
C2012X7R1H334K	X7R	50V	330,000	± 10%	1.25 ± 0.20
C2012X7R1H334M	X7R	50V	330,000	± 20%	1.25 ± 0.20
C2012X7R1H474K	X7R	50V	470,000	± 10%	1.25 ± 0.20
C2012X7R1H474M	X7R	50V	470,000	± 20%	1.25 ± 0.20
C2012X7R1H684K	X7R	50V	680,000	± 10%	1.25 ± 0.20
C2012X7R1H684M	X7R	50V	680,000	± 20%	1.25 ± 0.20
C2012X7R1H105K	X7R	50V	1,000,000	± 10%	1.25 ± 0.20
C2012X7R1H105M	X7R	50V	1,000,000	± 20%	1.25 ± 0.20
C2012X7R1H155K	X7R	50V	1,500,000	± 10%	1.25 ± 0.20
C2012X7R1H155M	X7R	50V	1,500,000	± 20%	1.25 ± 0.20
C2012X7R1H225K	X7R	50V	2,200,000	± 10%	1.25 ± 0.20
C2012X7R1H225M	X7R	50V	2,200,000	± 20%	1.25 ± 0.20
C2012X7R1E104K/0.85	X7R	25V	100,000	± 10%	0.85 ± 0.15
C2012X7R1E104M/0.85	X7R	25V	100,000	± 20%	0.85 ± 0.15
C2012X7R1E104K/1.25	X7R	25V	100,000	± 10%	1.25 ± 0.20
C2012X7R1E104M/1.25	X7R	25V	100,000	± 20%	1.25 ± 0.20
C2012X7R1E224K	X7R	25V	220,000	± 10%	1.25 ± 0.20
C2012X7R1E224M	X7R	25V	220,000	± 20%	1.25 ± 0.20
C2012X7R1E334K	X7R	25V	330,000	± 10%	1.25 ± 0.20
C2012X7R1E334M	X7R	25V	330,000	± 20%	1.25 ± 0.20
C2012X7R1E474K	X7R	25V	470,000	± 10%	1.25 ± 0.20
C2012X7R1E474M	X7R	25V	470,000	± 20%	1.25 ± 0.20
C2012X7R1E684K	X7R	25V	680,000	± 10%	1.25 ± 0.20
C2012X7R1E684M	X7R	25V	680,000	± 20%	1.25 ± 0.20
C2012X7R1E105K	X7R	25V	1,000,000	± 10%	1.25 ± 0.20
C2012X7R1E105M	X7R	25V	1,000,000	± 20%	1.25 ± 0.20
C2012X7R1E155K	X7R	25V	1,500,000	± 10%	1.25 ± 0.20
C2012X7R1E155M	X7R	25V	1,500,000	± 20%	1.25 ± 0.20
C2012X7R1E225K	X7R	25V	2,200,000	± 10%	1.25 ± 0.20
C2012X7R1E225M	X7R	25V	2,200,000	± 20%	1.25 ± 0.20
C2012X7R1E335K	X7R	25V	3,300,000	± 10%	1.25 ± 0.20
C2012X7R1E335M	X7R	25V	3,300,000	± 20%	1.25 ± 0.20
C2012X7R1E475K	X7R	25V	4,700,000	± 10%	1.25 ± 0.20
C2012X7R1E475M	X7R	25V	4,700,000	± 20%	1.25 ± 0.20
C2012X7R1C224K	X7R	16V	220,000	± 10%	1.25 ± 0.20
C2012X7R1C224M	X7R	16V	220,000	± 20%	1.25 ± 0.20
C2012X7R1C334K/1.25	X7R	16V	330,000	± 10%	1.25 ± 0.20
C2012X7R1C334M/1.25	X7R	16V	330,000	± 20%	1.25 ± 0.20

Capacitance Range Table

C2012 [EIA CC0805]

Class 2 (Temperature Stable) (Continued)

Temperature Characteristics: X7R (± 15%), X5R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C2012X7R1C474K	X7R	16V	470,000	± 10%	1.25 ± 0.20
C2012X7R1C474M	X7R	16V	470,000	± 20%	1.25 ± 0.20
C2012X7R1C684K	X7R	16V	680,000	± 10%	1.25 ± 0.20
C2012X7R1C684M	X7R	16V	680,000	± 20%	1.25 ± 0.20
C2012X7R1C105K/0.85	X7R	16V	1,000,000	± 10%	0.85 ± 0.15
C2012X7R1C105M/0.85	X7R	16V	1,000,000	± 20%	0.85 ± 0.15
C2012X7R1C105K/1.25	X7R	16V	1,000,000	± 10%	1.25 ± 0.20
C2012X7R1C105M/1.25	X7R	16V	1,000,000	± 20%	1.25 ± 0.20
C2012X7R1C155K	X7R	16V	1,500,000	± 10%	1.25 ± 0.20
C2012X7R1C155M	X7R	16V	1,500,000	± 20%	1.25 ± 0.20
C2012X7R1C225K	X7R	16V	2,200,000	± 10%	1.25 ± 0.20
C2012X7R1C225M	X7R	16V	2,200,000	± 20%	1.25 ± 0.20
C2012X7R1C335K	X7R	16V	3,300,000	± 10%	1.25 ± 0.20
C2012X7R1C335M	X7R	16V	3,300,000	± 20%	1.25 ± 0.20
C2012X7R1C475K	X7R	16V	4,700,000	± 10%	1.25 ± 0.20
C2012X7R1C475M	X7R	16V	4,700,000	± 20%	1.25 ± 0.20
C2012X7R1A105K	X7R	10V	1,000,000	± 10%	1.25 ± 0.20
C2012X7R1A105M	X7R	10V	1,000,000	± 20%	1.25 ± 0.20
C2012X7R1A155K	X7R	10V	1,500,000	± 10%	1.25 ± 0.20
C2012X7R1A155M	X7R	10V	1,500,000	± 20%	1.25 ± 0.20
C2012X7R1A225K	X7R	10V	2,200,000	± 10%	1.25 ± 0.20
C2012X7R1A225M	X7R	10V	2,200,000	± 20%	1.25 ± 0.20
C2012X7R1A335K	X7R	10V	3,300,000	± 10%	1.25 ± 0.20
C2012X7R1A335M	X7R	10V	3,300,000	± 20%	1.25 ± 0.20
C2012X7R1A475K	X7R	10V	4,700,000	± 10%	1.25 ± 0.20
C2012X7R1A475M	X7R	10V	4,700,000	± 20%	1.25 ± 0.20
C2012X7R1A106K	X7R	10V	10,000,000	± 10%	1.25 ± 0.20
C2012X7R1A106M	X7R	10V	10,000,000	± 20%	1.25 ± 0.20
C2012X5R1H105K	X5R	50V	1,000,000	± 10%	1.25 ± 0.20
C2012X5R1H105M	X5R	50V	1,000,000	± 20%	1.25 ± 0.20
C2012X5R1H155K	X5R	50V	1,500,000	± 10%	1.25 ± 0.20
C2012X5R1H155M	X5R	50V	1,500,000	± 20%	1.25 ± 0.20
C2012X5R1H225K	X5R	50V	2,200,000	± 10%	1.25 ± 0.20
C2012X5R1H225M	X5R	50V	2,200,000	± 20%	1.25 ± 0.20
C2012X5R1H335K	X5R	50V	3,300,000	± 10%	1.25 ± 0.20
C2012X5R1H335M	X5R	50V	3,300,000	± 20%	1.25 ± 0.20
C2012X5R1H475K	X5R	50V	4,700,000	± 10%	1.25 ± 0.20
C2012X5R1H475M	X5R	50V	4,700,000	± 20%	1.25 ± 0.20
C2012X5R1E105K/0.85	X5R	25V	1,000,000	± 10%	0.85 ± 0.15
C2012X5R1E105M/0.85	X5R	25V	1,000,000	± 20%	0.85 ± 0.15
C2012X5R1E105K/1.25	X5R	25V	1,000,000	± 10%	1.25 ± 0.20
C2012X5R1E105M/1.25	X5R	25V	1,000,000	± 20%	1.25 ± 0.20
C2012X5R1E155K	X5R	25V	1,500,000	± 10%	1.25 ± 0.20
C2012X5R1E155M	X5R	25V	1,500,000	± 20%	1.25 ± 0.20
C2012X5R1E225K	X5R	25V	2,200,000	± 10%	1.25 ± 0.20
C2012X5R1E225M	X5R	25V	2,200,000	± 20%	1.25 ± 0.20
C2012X5R1E475K	X5R	25V	4,700,000	± 10%	1.25 ± 0.20
C2012X5R1E475M	X5R	25V	4,700,000	± 20%	1.25 ± 0.20
C2012X5R1E685K	X5R	25V	6,800,000	± 10%	1.25 ± 0.20
C2012X5R1E685M	X5R	25V	6,800,000	± 20%	1.25 ± 0.20
C2012X5R1E106K	X5R	25V	10,000,000	± 10%	1.25 ± 0.20
C2012X5R1E106M	X5R	25V	10,000,000	± 20%	1.25 ± 0.20
C2012X5R1C105K/0.85	X5R	16V	1,000,000	± 10%	0.85 ± 0.15
C2012X5R1C105M/0.85	X5R	16V	1,000,000	± 20%	0.85 ± 0.15
C2012X5R1C105K/1.25	X5R	16V	1,000,000	± 10%	1.25 ± 0.20
C2012X5R1C105M/1.25	X5R	16V	1,000,000	± 20%	1.25 ± 0.20

Capacitance Range Table

C2012 [EIA CC0805]

Class 2 (Temperature Stable) (Continued)

Temperature Characteristics: X5R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C2012X5R1C225K/0.85	X5R	16V	2,200,000	± 10%	0.85 ± 0.15
C2012X5R1C225M/0.85	X5R	16V	2,200,000	± 20%	0.85 ± 0.15
C2012X5R1C225K/1.25	X5R	16V	2,200,000	± 10%	1.25 ± 0.20
C2012X5R1C225M/1.25	X5R	16V	2,200,000	± 20%	1.25 ± 0.20
C2012X5R1C475K/1.25	X5R	16V	4,700,000	± 10%	1.25 ± 0.20
C2012X5R1C475M/1.25	X5R	16V	4,700,000	± 20%	1.25 ± 0.20
C2012X5R1C685K	X5R	16V	6,800,000	± 10%	1.25 ± 0.20
C2012X5R1C685M	X5R	16V	6,800,000	± 20%	1.25 ± 0.20
C2012X5R1C106K/0.85	X5R	16V	10,000,000	± 10%	0.85 ± 0.15
C2012X5R1C106M/0.85	X5R	16V	10,000,000	± 20%	0.85 ± 0.15
C2012X5R1C106K/1.25	X5R	16V	10,000,000	± 10%	1.25 ± 0.20
C2012X5R1C106M/1.25	X5R	16V	10,000,000	± 20%	1.25 ± 0.20
C2012X5R1C226K	X5R	16V	22,000,000	± 10%	1.25 ± 0.20
C2012X5R1C226M	X5R	16V	22,000,000	± 20%	1.25 ± 0.20
C2012X5R1A105K/0.85	X5R	10V	1,000,000	± 10%	0.85 ± 0.15
C2012X5R1A105M/0.85	X5R	10V	1,000,000	± 20%	0.85 ± 0.15
C2012X5R1A105K/1.25	X5R	10V	1,000,000	± 10%	1.25 ± 0.20
C2012X5R1A105M/1.25	X5R	10V	1,000,000	± 20%	1.25 ± 0.20
C2012X5R1A225K/0.85	X5R	10V	2,200,000	± 10%	0.85 ± 0.15
C2012X5R1A225M/0.85	X5R	10V	2,200,000	± 20%	0.85 ± 0.15
C2012X5R1A225K/1.25	X5R	10V	2,200,000	± 10%	1.25 ± 0.20
C2012X5R1A225M/1.25	X5R	10V	2,200,000	± 20%	1.25 ± 0.20
C2012X5R1A335K	X5R	10V	3,300,000	± 10%	1.25 ± 0.20
C2012X5R1A335M	X5R	10V	3,300,000	± 20%	1.25 ± 0.20
C2012X5R1A475K/0.85	X5R	10V	4,700,000	± 10%	0.85 ± 0.15
C2012X5R1A475M/0.85	X5R	10V	4,700,000	± 20%	0.85 ± 0.15
C2012X5R1A475K/1.25	X5R	10V	4,700,000	± 10%	1.25 ± 0.20
C2012X5R1A475M/1.25	X5R	10V	4,700,000	± 20%	1.25 ± 0.20
C2012X5R1A106K/0.85	X5R	10V	10,000,000	± 10%	0.85 ± 0.15
C2012X5R1A106M/0.85	X5R	10V	10,000,000	± 20%	0.85 ± 0.15
C2012X5R1A106K/1.25	X5R	10V	10,000,000	± 10%	1.25 ± 0.20
C2012X5R1A106M/1.25	X5R	10V	10,000,000	± 20%	1.25 ± 0.20
C2012X5R1A156M	X5R	10V	15,000,000	± 20%	1.25 ± 0.20
C2012X5R1A226M/0.85	X5R	10V	22,000,000	± 20%	0.85 ± 0.15
C2012X5R1A226K/1.25	X5R	10V	22,000,000	± 10%	1.25 ± 0.20
C2012X5R1A226M/1.25	X5R	10V	22,000,000	± 20%	1.25 ± 0.20
C2012X5R0J105K	X5R	6.3V	1,000,000	± 10%	0.60 ± 0.15
C2012X5R0J105M	X5R	6.3V	1,000,000	± 20%	0.60 ± 0.15
C2012X5R0J225K/0.85	X5R	6.3V	2,200,000	± 10%	0.85 ± 0.15
C2012X5R0J225M/0.85	X5R	6.3V	2,200,000	± 20%	0.85 ± 0.15
C2012X5R0J225K/1.25	X5R	6.3V	2,200,000	± 10%	1.25 ± 0.20
C2012X5R0J225M/1.25	X5R	6.3V	2,200,000	± 20%	1.25 ± 0.20
C2012X5R0J335K/1.25	X5R	6.3V	3,300,000	± 10%	1.25 ± 0.20
C2012X5R0J335M/1.25	X5R	6.3V	3,300,000	± 20%	1.25 ± 0.20
C2012X5R0J475K/0.85	X5R	6.3V	4,700,000	± 10%	0.85 ± 0.15
C2012X5R0J475M/0.85	X5R	6.3V	4,700,000	± 20%	0.85 ± 0.15
C2012X5R0J475K/1.25	X5R	6.3V	4,700,000	± 10%	1.25 ± 0.20
C2012X5R0J475M/1.25	X5R	6.3V	4,700,000	± 20%	1.25 ± 0.20
C2012X5R0J685K/1.25	X5R	6.3V	6,800,000	± 10%	1.25 ± 0.20
C2012X5R0J685M/1.25	X5R	6.3V	6,800,000	± 20%	1.25 ± 0.20
C2012X5R0J106K/0.85	X5R	6.3V	10,000,000	± 10%	0.85 ± 0.15
C2012X5R0J106M/0.85	X5R	6.3V	10,000,000	± 20%	0.85 ± 0.15
C2012X5R0J106K/1.25	X5R	6.3V	10,000,000	± 10%	1.25 ± 0.20
C2012X5R0J106M/1.25	X5R	6.3V	10,000,000	± 20%	1.25 ± 0.20
C2012X5R0J156M/0.85	X5R	6.3V	15,000,000	± 20%	0.85 ± 0.15
C2012X5R0J156M/1.25	X5R	6.3V	15,000,000	± 20%	1.25 ± 0.20

Capacitance Range Table

C2012 [EIA CC0805]

Class 2 (Temperature Stable) (Continued)

Temperature Characteristics: X5R (± 15%), X6S (± 22%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C2012X5R0J226M/0.85	X5R	6.3V	22,000,000	± 20%	0.85 ± 0.15
C2012X5R0J226K/1.25	X5R	6.3V	22,000,000	± 10%	1.25 ± 0.20
C2012X5R0J226M/1.25	X5R	6.3V	22,000,000	± 20%	1.25 ± 0.20
C2012X5R0J336M	X5R	6.3V	33,000,000	± 20%	1.25 ± 0.20
C2012X5R0J476M	X5R	6.3V	47,000,000	± 20%	1.25 ± 0.20
C2012X5R0G476M	X5R	4V	47,000,000	± 20%	1.25 ± 0.20
C2012X6S1A106K/0.85	X6S	10V	10,000,000	± 10%	0.85 ± 0.15
C2012X6S1A106M/0.85	X6S	10V	10,000,000	± 20%	0.85 ± 0.15
C2012X6S1A226K	X6S	10V	22,000,000	± 10%	1.25 ± 0.20
C2012X6S1A226M	X6S	10V	22,000,000	± 20%	1.25 ± 0.20
C2012X6S0J106K	X6S	6.3V	10,000,000	± 10%	0.85 ± 0.15
C2012X6S0J106M	X6S	6.3V	10,000,000	± 20%	0.85 ± 0.15
C2012X6S0J226K	X6S	6.3V	22,000,000	± 10%	1.25 ± 0.20
C2012X6S0J226M	X6S	6.3V	22,000,000	± 20%	1.25 ± 0.20
C2012X6S0G226M	X6S	4V	22,000,000	± 20%	0.85 ± 0.15
C2012X6S0G476M	X6S	4V	47,000,000	± 20%	1.25 ± 0.20

Class 3 (General Purpose)

Temperature Characteristics: Y5V (+22/-82%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C2012Y5V1H104Z/0.60	Y5V	50V	100,000	+80/-20%	0.60 ± 0.15
C2012Y5V1H104Z/0.85	Y5V	50V	100,000	+80/-20%	0.85 ± 0.15
C2012Y5V1H474Z/0.85	Y5V	50V	470,000	+80/-20%	0.85 ± 0.15
C2012Y5V1H105Z/0.85	Y5V	50V	1,000,000	+80/-20%	0.85 ± 0.15
C2012Y5V1H105Z/1.25	Y5V	50V	1,000,000	+80/-20%	1.25 ± 0.20
C2012Y5V1H225Z	Y5V	50V	2,200,000	+80/-20%	1.25 ± 0.20
C2012Y5V1E105Z/0.85	Y5V	25V	1,000,000	+80/-20%	0.85 ± 0.15
C2012Y5V1E105Z/1.25	Y5V	25V	1,000,000	+80/-20%	1.25 ± 0.20
C2012Y5V1E225Z	Y5V	25V	2,200,000	+80/-20%	1.25 ± 0.20
C2012Y5V1E475Z	Y5V	25V	4,700,000	+80/-20%	1.25 ± 0.20
C2012Y5V1C105Z/0.85	Y5V	16V	1,000,000	+80/-20%	0.85 ± 0.15
C2012Y5V1C105Z/1.25	Y5V	16V	1,000,000	+80/-20%	1.25 ± 0.20
C2012Y5V1C225Z/0.85	Y5V	16V	2,200,000	+80/-20%	0.85 ± 0.15
C2012Y5V1C225Z/1.25	Y5V	16V	2,200,000	+80/-20%	1.25 ± 0.20
C2012Y5V1C475Z/0.85	Y5V	16V	4,700,000	+80/-20%	0.85 ± 0.15
C2012Y5V1C475Z/1.25	Y5V	16V	4,700,000	+80/-20%	1.25 ± 0.20
C2012Y5V1C106Z	Y5V	16V	10,000,000	+80/-20%	1.25 ± 0.20
C2012Y5V1A475Z/0.85	Y5V	10V	4,700,000	+80/-20%	0.85 ± 0.15
C2012Y5V1A475Z/1.25	Y5V	10V	4,700,000	+80/-20%	1.25 ± 0.20
C2012Y5V1A106Z	Y5V	10V	10,000,000	+80/-20%	1.25 ± 0.20
C2012Y5V0J106Z	Y5V	6.3V	10,000,000	+80/-20%	1.25 ± 0.20
C2012Y5V0J226Z	Y5V	6.3V	22,000,000	+80/-20%	1.25 ± 0.20

Capacitance Range Chart

C3216 [EIA CC1206]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC), SL (+350 to -1000 ppm/ºC)
Rated Voltage: 50V (1H), 25V (1E), 10V (1A)

Capacitance (pF)	Cap Code	Tolerance	C0G		SL
			1H (50V)	1E (25V)	1A (10V)
3,900	392	J: ± 05%			
4,700	472				
5,600	562				
6,800	682				
8,200	822				
10,000	103				
15,000	153				
22,000	223				
33,000	333				
47,000	473				
68,000	683				
100,000	104				
220,000	224				

Standard Thickness

0.60 ± 0.15 mm 0.85 ± 0.15 mm 1.15 ± 0.15 mm 1.30 ± 0.20 mm 1.60 ± 0.20 mm

Capacitance Range Chart

C3216 [EIA CC1206]

Capacitance Range Chart

Temperature Characteristics: X5R (± 15%), X7R (± 15%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J), 4V (0G)

Capacitance (pF)	Cap Code	Tolerance	X5R						X6S		
			1H (50V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)	0G (4V)	1A (10V)	0J (6.3V)	0G (4V)
1,000,000	105	K: ± 10%									
1,500,000	155	M: ± 20%									
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										
100,000,000	107										

Capacitance Range Chart

Temperature Characteristics: Y5V (+22/-82%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

Capacitance (pF)	Cap Code	Tolerance	X7R				Y5V				
			1H (50V)	1E (25V)	1C (16V)	1A (10V)	1H (50V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)
100,000	104	K: ± 10%									
220,000	224	M: ± 20%									
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 ± 0.15 mm | 0.85 ± 0.15 mm | 1.15 ± 0.15 mm | 1.30 ± 0.20 mm | 1.60 ± 0.20 mm

Capacitance Range Table

C3216 [EIA CC1206]

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC), SL (+350 to -1000 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C3216C0G1H392J	C0G	50V	3,900	± 5%	0.60 ± 0.15
C3216C0G1H472J/0.60	C0G	50V	4,700	± 5%	0.60 ± 0.15
C3216C0G1H472J/0.85	C0G	50V	4,700	± 5%	0.85 ± 0.15
C3216C0G1H562J/0.60	C0G	50V	5,600	± 5%	0.60 ± 0.15
C3216C0G1H562J/0.85	C0G	50V	5,600	± 5%	0.85 ± 0.15
C3216C0G1H682J/0.60	C0G	50V	6,800	± 5%	0.60 ± 0.15
C3216C0G1H822J/0.60	C0G	50V	8,200	± 5%	0.60 ± 0.15
C3216C0G1H822J/1.15	C0G	50V	8,200	± 5%	1.15 ± 0.15
C3216C0G1H103J/0.60	C0G	50V	10,000	± 5%	0.60 ± 0.15
C3216C0G1H103J/1.15	C0G	50V	10,000	± 5%	1.15 ± 0.15
C3216C0G1H153J/0.60	C0G	50V	15,000	± 5%	0.60 ± 0.15
C3216C0G1H153J/1.15	C0G	50V	15,000	± 5%	1.15 ± 0.15
C3216C0G1H223J/0.60	C0G	50V	22,000	± 5%	0.60 ± 0.15
C3216C0G1H223J/1.15	C0G	50V	22,000	± 5%	1.15 ± 0.15
C3216C0G1H333J/0.85	C0G	50V	33,000	± 5%	0.85 ± 0.15
C3216C0G1H333J/1.60	C0G	50V	33,000	± 5%	1.60 ± 0.20
C3216C0G1H473J	C0G	50V	47,000	± 5%	1.15 ± 0.15
C3216C0G1H683J	C0G	50V	68,000	± 5%	1.60 ± 0.20
C3216C0G1H104J	C0G	50V	100,000	± 5%	1.60 ± 0.20
C3216C0G1E822J	C0G	25V	8,200	± 5%	0.60 ± 0.15
C3216C0G1E103J	C0G	25V	10,000	± 5%	0.60 ± 0.15
C3216C0G1E153J	C0G	25V	15,000	± 5%	0.60 ± 0.15
C3216C0G1E223J	C0G	25V	22,000	± 5%	0.60 ± 0.15
C3216C0G1E333J	C0G	25V	33,000	± 5%	0.85 ± 0.15
C3216C0G1E473J	C0G	25V	47,000	± 5%	1.15 ± 0.15
C3216C0G1E683J	C0G	25V	68,000	± 5%	1.60 ± 0.20
C3216C0G1E104J	C0G	25V	100,000	± 5%	1.60 ± 0.20
C3216SL1A224J	SL	10V	220,000	± 5%	1.60 ± 0.20

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C3216X7R1H104K	X7R	50V	100,000	± 10%	0.85 ± 0.15
C3216X7R1H104M	X7R	50V	100,000	± 20%	0.85 ± 0.15
C3216X7R1H224K	X7R	50V	220,000	± 10%	1.15 ± 0.15
C3216X7R1H224M	X7R	50V	220,000	± 20%	1.15 ± 0.15
C3216X7R1H334K	X7R	50V	330,000	± 10%	1.60 ± 0.20
C3216X7R1H334M	X7R	50V	330,000	± 20%	1.60 ± 0.20
C3216X7R1H474K	X7R	50V	470,000	± 10%	1.60 ± 0.20
C3216X7R1H474M	X7R	50V	470,000	± 20%	1.60 ± 0.20
C3216X7R1H684K	X7R	50V	680,000	± 10%	1.60 ± 0.20
C3216X7R1H684M	X7R	50V	680,000	± 20%	1.60 ± 0.20
C3216X7R1H105K	X7R	50V	1,000,000	± 10%	1.60 ± 0.20
C3216X7R1H105M	X7R	50V	1,000,000	± 20%	1.60 ± 0.20
C3216X7R1H155K	X7R	50V	1,500,000	± 10%	1.60 ± 0.20
C3216X7R1H155M	X7R	50V	1,500,000	± 20%	1.60 ± 0.20
C3216X7R1H225K	X7R	50V	2,200,000	± 10%	1.60 ± 0.20
C3216X7R1H225M	X7R	50V	2,200,000	± 20%	1.60 ± 0.20
C3216X7R1H335K	X7R	50V	3,300,000	± 10%	1.60 ± 0.20
C3216X7R1H335M	X7R	50V	3,300,000	± 20%	1.60 ± 0.20
C3216X7R1E224K	X7R	25V	220,000	± 10%	1.15 ± 0.15
C3216X7R1E224M	X7R	25V	220,000	± 20%	1.15 ± 0.15
C3216X7R1E334K	X7R	25V	330,000	± 10%	1.15 ± 0.15
C3216X7R1E334M	X7R	25V	330,000	± 20%	1.15 ± 0.15

Capacitance Range Table

C3216 [EIA CC1206]

Class 2 (Temperature Stable) (Continued)

Temperature Characteristics: X7R (± 15%), X5R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C3216X7R1E474K/0.85	X7R	25V	470,000	± 10%	0.85 ± 0.15
C3216X7R1E474M/0.85	X7R	25V	470,000	± 20%	0.85 ± 0.15
C3216X7R1E684K/0.85	X7R	25V	680,000	± 10%	0.85 ± 0.15
C3216X7R1E684M/0.85	X7R	25V	680,000	± 20%	0.85 ± 0.15
C3216X7R1E105K/0.85	X7R	25V	1,000,000	± 10%	0.85 ± 0.15
C3216X7R1E105M/0.85	X7R	25V	1,000,000	± 20%	0.85 ± 0.15
C3216X7R1E105K/1.60	X7R	25V	1,000,000	± 10%	1.60 ± 0.20
C3216X7R1E105M/1.60	X7R	25V	1,000,000	± 20%	1.60 ± 0.20
C3216X7R1E155K	X7R	25V	1,500,000	± 10%	1.60 ± 0.20
C3216X7R1E155M	X7R	25V	1,500,000	± 20%	1.60 ± 0.20
C3216X7R1E225K	X7R	25V	2,200,000	± 10%	1.60 ± 0.20
C3216X7R1E225M	X7R	25V	2,200,000	± 20%	1.60 ± 0.20
C3216X7R1E335K	X7R	25V	3,300,000	± 10%	1.60 ± 0.20
C3216X7R1E335M	X7R	25V	3,300,000	± 20%	1.60 ± 0.20
C3216X7R1E475K	X7R	25V	4,700,000	± 10%	1.60 ± 0.20
C3216X7R1E475M	X7R	25V	4,700,000	± 20%	1.60 ± 0.20
C3216X7R1E685K	X7R	25V	6,800,000	± 10%	1.60 ± 0.20
C3216X7R1E685M	X7R	25V	6,800,000	± 20%	1.60 ± 0.20
C3216X7R1E106K	X7R	25V	10,000,000	± 10%	1.60 ± 0.20
C3216X7R1E106M	X7R	25V	10,000,000	± 20%	1.60 ± 0.20
C3216X7R1C474K	X7R	16V	470,000	± 10%	1.15 ± 0.15
C3216X7R1C474M	X7R	16V	470,000	± 20%	1.15 ± 0.15
C3216X7R1C105K/0.85	X7R	16V	1,000,000	± 10%	0.85 ± 0.15
C3216X7R1C105M/0.85	X7R	16V	1,000,000	± 20%	0.85 ± 0.15
C3216X7R1C105K/1.15	X7R	16V	1,000,000	± 10%	1.15 ± 0.15
C3216X7R1C105K/1.30	X7R	16V	1,000,000	± 10%	1.30 ± 0.20
C3216X7R1C225K/1.60	X7R	16V	2,200,000	± 10%	1.60 ± 0.20
C3216X7R1C225M/1.60	X7R	16V	2,200,000	± 20%	1.60 ± 0.20
C3216X7R1C335K/1.60	X7R	16V	3,300,000	± 10%	1.60 ± 0.20
C3216X7R1C335M/1.60	X7R	16V	3,300,000	± 20%	1.60 ± 0.20
C3216X7R1C475K/1.60	X7R	16V	4,700,000	± 10%	1.60 ± 0.20
C3216X7R1C475M/1.60	X7R	16V	4,700,000	± 20%	1.60 ± 0.20
C3216X7R1C685K	X7R	16V	6,800,000	± 10%	1.60 ± 0.20
C3216X7R1C685M	X7R	16V	6,800,000	± 20%	1.60 ± 0.20
C3216X7R1C106K	X7R	16V	10,000,000	± 10%	1.60 ± 0.20
C3216X7R1C106M	X7R	16V	10,000,000	± 20%	1.60 ± 0.20
C3216X7R1A106K	X7R	10V	10,000,000	± 10%	1.60 ± 0.20
C3216X7R1A106M	X7R	10V	10,000,000	± 20%	1.60 ± 0.20
C3216X5R1H105K	X5R	50V	1,000,000	± 10%	1.60 ± 0.20
C3216X5R1H105M	X5R	50V	1,000,000	± 20%	1.60 ± 0.20
C3216X5R1H335K	X5R	50V	3,300,000	± 10%	1.60 ± 0.20
C3216X5R1H335M	X5R	50V	3,300,000	± 20%	1.60 ± 0.20
C3216X5R1H475K	X5R	50V	4,700,000	± 10%	1.60 ± 0.20
C3216X5R1H475M	X5R	50V	4,700,000	± 20%	1.60 ± 0.20
C3216X5R1H685K	X5R	50V	6,800,000	± 10%	1.60 ± 0.20
C3216X5R1H685M	X5R	50V	6,800,000	± 20%	1.60 ± 0.20
C3216X5R1H106K	X5R	50V	10,000,000	± 10%	1.60 ± 0.20
C3216X5R1H106M	X5R	50V	10,000,000	± 20%	1.60 ± 0.20
C3216X5R1E225K	X5R	25V	2,200,000	± 10%	1.60 ± 0.20
C3216X5R1E225M	X5R	25V	2,200,000	± 20%	1.60 ± 0.20
C3216X5R1E335K/1.60	X5R	25V	3,300,000	± 10%	1.60 ± 0.20
C3216X5R1E335M/1.60	X5R	25V	3,300,000	± 20%	1.60 ± 0.20
C3216X5R1E475K	X5R	25V	4,700,000	± 10%	1.60 ± 0.20
C3216X5R1E475M	X5R	25V	4,700,000	± 20%	1.60 ± 0.20
C3216X5R1E106K	X5R	25V	10,000,000	± 10%	1.60 ± 0.20
C3216X5R1E106M	X5R	25V	10,000,000	± 20%	1.60 ± 0.20

Capacitance Range Table

C3216 [EIA CC1206]

Class 2 (Temperature Stable) (Continued)

Temperature Characteristics: X5R (± 15%), X6S (± 22%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C3216X5R1E226M	X5R	25V	22,000,000	± 20%	1.60 ± 0.20
C3216X5R1C225K/1.60	X5R	16V	2,200,000	± 10%	1.60 ± 0.20
C3216X5R1C225M/1.60	X5R	16V	2,200,000	± 20%	1.60 ± 0.20
C3216X5R1C335K/1.60	X5R	16V	3,300,000	± 10%	1.60 ± 0.20
C3216X5R1C335M/1.60	X5R	16V	3,300,000	± 20%	1.60 ± 0.20
C3216X5R1C475K/1.15	X5R	16V	4,700,000	± 10%	1.15 ± 0.15
C3216X5R1C475M/1.15	X5R	16V	4,700,000	± 20%	1.15 ± 0.15
C3216X5R1C475K/1.60	X5R	16V	4,700,000	± 10%	1.60 ± 0.20
C3216X5R1C475M/1.60	X5R	16V	4,700,000	± 20%	1.60 ± 0.20
C3216X5R1C685K	X5R	16V	6,800,000	± 10%	1.60 ± 0.20
C3216X5R1C685M	X5R	16V	6,800,000	± 20%	1.60 ± 0.20
C3216X5R1C106K	X5R	16V	10,000,000	± 10%	1.60 ± 0.20
C3216X5R1C106M	X5R	16V	10,000,000	± 20%	1.60 ± 0.20
C3216X5R1C226M	X5R	16V	22,000,000	± 20%	1.60 ± 0.20
C3216X5R1C336M	X5R	16V	33,000,000	± 20%	1.60 ± 0.20
C3216X5R1C476M	X5R	16V	47,000,000	± 20%	1.60 ± 0.20
C3216X5R1A225K/0.85	X5R	10V	2,200,000	± 10%	0.85 ± 0.15
C3216X5R1A225M/0.85	X5R	10V	2,200,000	± 20%	0.85 ± 0.15
C3216X5R1A335K/0.85	X5R	10V	3,300,000	± 10%	0.85 ± 0.15
C3216X5R1A335M/0.85	X5R	10V	3,300,000	± 20%	0.85 ± 0.15
C3216X5R1A335K/1.15	X5R	10V	3,300,000	± 10%	1.15 ± 0.15
C3216X5R1A335M/1.15	X5R	10V	3,300,000	± 20%	1.15 ± 0.15
C3216X5R1A475K	X5R	10V	4,700,000	± 10%	1.60 ± 0.20
C3216X5R1A475M	X5R	10V	4,700,000	± 20%	1.60 ± 0.20
C3216X5R1A106K	X5R	10V	10,000,000	± 10%	1.60 ± 0.20
C3216X5R1A106M	X5R	10V	10,000,000	± 20%	1.60 ± 0.20
C3216X5R1A226M	X5R	10V	22,000,000	± 20%	1.60 ± 0.20
C3216X5R1A336M	X5R	10V	33,000,000	± 20%	1.60 ± 0.20
C3216X5R1A476M	X5R	10V	47,000,000	± 20%	1.60 ± 0.20
C3216X5R1A107M	X5R	10V	100,000,000	± 20%	1.60 ± 0.20
C3216X5R0J106K/0.85	X5R	6.3V	10,000,000	± 10%	0.85 ± 0.15
C3216X5R0J106M/0.85	X5R	6.3V	10,000,000	± 20%	0.85 ± 0.15
C3216X5R0J106K/1.60	X5R	6.3V	10,000,000	± 10%	1.60 ± 0.20
C3216X5R0J106M/1.60	X5R	6.3V	10,000,000	± 20%	1.60 ± 0.20
C3216X5R0J156M	X5R	6.3V	15,000,000	± 20%	1.60 ± 0.20
C3216X5R0J226M/0.85	X5R	6.3V	22,000,000	± 20%	0.85 ± 0.15
C3216X5R0J226K/1.60	X5R	6.3V	22,000,000	± 10%	1.60 ± 0.20
C3216X5R0J226M/1.60	X5R	6.3V	22,000,000	± 20%	1.60 ± 0.20
C3216X5R0J336M	X5R	6.3V	33,000,000	± 20%	1.30 ± 0.20
C3216X5R0J476M	X5R	6.3V	47,000,000	± 20%	1.60 ± 0.20
C3216X5R0J107M	X5R	6.3V	100,000,000	± 20%	1.60 ± 0.20
C3216X5R0G107M	X5R	4V	100,000,000	± 20%	1.60 ± 0.20
C3216X6S1A476M	X6S	10V	47,000,000	± 20%	1.60 ± 0.20
C3216X6S0J476M	X6S	6.3V	47,000,000	± 20%	1.60 ± 0.20
C3216X6S0G107M	X6S	4V	100,000,000	± 20%	1.60 ± 0.20

Capacitance Range Table

C3216 [EIA CC1206]

Class 3 (General Purpose)

Temperature Characteristics: Y5V (+22/-82%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C3216Y5V1H225Z/0.85	Y5V	50V	2,200,000	+80/-20%	0.85 ± 0.15
C3216Y5V1H225Z/1.15	Y5V	50V	2,200,000	+80/-20%	1.15 ± 0.15
C3216Y5V1H475Z	Y5V	50V	4,700,000	+80/-20%	1.60 ± 0.20
C3216Y5V1E475Z/0.85	Y5V	25V	4,700,000	+80/-20%	0.85 ± 0.15
C3216Y5V1E475Z/1.15	Y5V	25V	4,700,000	+80/-20%	1.15 ± 0.15
C3216Y5V1E106Z	Y5V	25V	10,000,000	+80/-20%	1.60 ± 0.20
C3216Y5V1C475Z/0.85	Y5V	16V	4,700,000	+80/-20%	0.85 ± 0.15
C3216Y5V1C475Z/1.15	Y5V	16V	4,700,000	+80/-20%	1.15 ± 0.15
C3216Y5V1C475Z/1.30	Y5V	16V	4,700,000	+80/-20%	1.30 ± 0.20
C3216Y5V1C106Z	Y5V	16V	10,000,000	+80/-20%	1.60 ± 0.20
C3216Y5V1C226Z	Y5V	16V	22,000,000	+80/-20%	1.60 ± 0.20
C3216Y5V1A106Z/0.85	Y5V	10V	10,000,000	+80/-20%	0.85 ± 0.15
C3216Y5V1A106Z/1.15	Y5V	10V	10,000,000	+80/-20%	1.15 ± 0.15
C3216Y5V1A226Z	Y5V	10V	22,000,000	+80/-20%	1.60 ± 0.20
C3216Y5V0J476Z	Y5V	6.3V	47,000,000	+80/-20%	1.60 ± 0.20

Capacitance Range Chart

C3225 [EIA CC1210]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC)
Rated Voltage: 50V (1H)

Capacitance (pF)	Cap Code	Tolerance	C0G
			1H (50V)
22,000	223	J: ± 5%	
33,000	333		
47,000	473		
68,000	683		
100,000	104		

Capacitance Range Chart

Temperature Characteristics: X5R (± 15%), X6S (± 22%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

Capacitance (pF)	Cap Code	Tolerance	X5R					X6S		
			1H (50V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)	1H (50V)	0J (6.3V)	0G (4V)
4,700,000	475	K: ± 10%								
10,000,000	106	M: ± 20%								
15,000,000	156									
22,000,000	226									
33,000,000	336									
47,000,000	476									
68,000,000	686									
100,000,000	107									

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X7S (± 22%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A)

Capacitance (pF)	Cap Code	Tolerance	X7R				X7S
			1H (50V)	1E (25V)	1C (16V)	1A (10V)	1H (50V)
470,000	474	K: ± 10%					
1,000,000	105	M: ± 20%					
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						

Capacitance Range Chart

Temperature Characteristics: Y5V (+22/-82%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

Capacitance (pF)	Cap Code	Tolerance	Y5V				
			1H (50V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)
4,700,000	475	Z: +80/-20%					
10,000,000	106						
22,000,000	226						
47,000,000	476						
100,000,000	107						

Standard Thickness

- 1.15 ± 0.15 mm
- 1.25 ± 0.20 mm
- 1.30 ± 0.20 mm
- 1.60 ± 0.20 mm
- 2.00 ± 0.20 mm
- 2.30 ± 0.20 mm
- 2.50 ± 0.30 mm

• All specifications are subject to change without notice. Please read the precautions before using the product.

Capacitance Range Table

C3225 [EIA CC1210]

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C3225C0G1H223J	C0G	50V	22,000	±5%	1.25 ± 0.20
C3225C0G1H333J	C0G	50V	33,000	±5%	1.60 ± 0.20
C3225C0G1H473J	C0G	50V	47,000	±5%	2.00 ± 0.20
C3225C0G1H683J	C0G	50V	68,000	±5%	2.00 ± 0.20
C3225C0G1H104J	C0G	50V	100,000	±5%	2.50 ± 0.30

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%), X7S (± 22%), X6S, (± 22%), X5R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C3225X7R1H474K/1.30	X7R	50V	470,000	± 10%	1.30 ± 0.20
C3225X7R1H474M/1.30	X7R	50V	470,000	± 20%	1.30 ± 0.20
C3225X7R1H105K/1.60	X7R	50V	1,000,000	± 10%	1.60 ± 0.20
C3225X7R1H105M/1.60	X7R	50V	1,000,000	± 20%	1.60 ± 0.20
C3225X7R1H105K/2.00	X7R	50V	1,000,000	± 10%	2.00 ± 0.20
C3225X7R1H105M/2.00	X7R	50V	1,000,000	± 20%	2.00 ± 0.20
C3225X7R1H155K	X7R	50V	1,500,000	± 10%	2.00 ± 0.20
C3225X7R1H155M	X7R	50V	1,500,000	± 20%	2.00 ± 0.20
C3225X7R1H225K/2.00	X7R	50V	2,200,000	± 10%	2.00 ± 0.20
C3225X7R1H225M/2.00	X7R	50V	2,200,000	± 20%	2.00 ± 0.20
C3225X7R1H225K/2.50	X7R	50V	2,200,000	± 10%	2.50 ± 0.30
C3225X7R1H225M/2.50	X7R	50V	2,200,000	± 20%	2.50 ± 0.30
C3225X7R1H335K	X7R	50V	3,300,000	± 10%	2.50 ± 0.30
C3225X7R1H335M	X7R	50V	3,300,000	± 20%	2.50 ± 0.30
C3225X7R1H475K	X7R	50V	4,700,000	± 10%	2.50 ± 0.30
C3225X7R1H475M	X7R	50V	4,700,000	± 20%	2.50 ± 0.30
C3225X7S1H685K	X7S	50V	6,800,000	± 10%	2.50 ± 0.30
C3225X7S1H685M	X7S	50V	6,800,000	± 20%	2.50 ± 0.30
C3225X7S1H106K	X7S	50V	10,000,000	± 10%	2.50 ± 0.30
C3225X7S1H106M	X7S	50V	10,000,000	± 20%	2.50 ± 0.30
C3225X7R1E225K/1.60	X7R	25V	2,200,000	± 10%	1.60 ± 0.20
C3225X7R1E225M/1.60	X7R	25V	2,200,000	± 20%	1.60 ± 0.20
C3225X7R1E335K	X7R	25V	3,300,000	± 10%	1.60 ± 0.20
C3225X7R1E335M	X7R	25V	3,300,000	± 20%	1.60 ± 0.20
C3225X7R1E475K	X7R	25V	4,700,000	± 10%	2.00 ± 0.20
C3225X7R1E475M	X7R	25V	4,700,000	± 20%	2.00 ± 0.20
C3225X7R1E685K/2.50	X7R	25V	6,800,000	± 10%	2.50 ± 0.30
C3225X7R1E685M/2.50	X7R	25V	6,800,000	± 20%	2.50 ± 0.30
C3225X7R1E106K	X7R	25V	10,000,000	± 10%	2.50 ± 0.30
C3225X7R1E106M	X7R	25V	10,000,000	± 20%	2.50 ± 0.30
C3225X7R1C106K	X7R	16V	10,000,000	± 10%	2.00 ± 0.20
C3225X7R1C106M	X7R	16V	10,000,000	± 20%	2.00 ± 0.20
C3225X7R1C156M	X7R	16V	15,000,000	± 20%	2.50 ± 0.30
C3225X7R1C226K	X7R	16V	22,000,000	± 10%	2.50 ± 0.30
C3225X7R1C226M	X7R	16V	22,000,000	± 20%	2.50 ± 0.30
C3225X7R1A226K/2.30	X7R	10V	22,000,000	± 10%	2.30 ± 0.20
C3225X7R1A226M/2.30	X7R	10V	22,000,000	± 20%	2.30 ± 0.20
C3225X5R1H475K	X5R	50V	4,700,000	± 10%	2.50 ± 0.30
C3225X5R1H475M	X5R	50V	4,700,000	± 20%	2.50 ± 0.30
C3225X5R1E106K	X5R	25V	10,000,000	± 10%	2.50 ± 0.30
C3225X5R1E106M	X5R	25V	10,000,000	± 20%	2.50 ± 0.30
C3225X5R1C106K	X5R	16V	10,000,000	± 10%	2.00 ± 0.20
C3225X5R1C106M	X5R	16V	10,000,000	± 20%	2.00 ± 0.20
C3225X5R1C156M	X5R	16V	15,000,000	± 20%	2.50 ± 0.30

Capacitance Range Table

C3225 [EIA CC1210]

Class 2 (Temperature Stable) (Continued)

Temperature Characteristics: X5R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C3225X5R1C226K	X5R	16V	22,000,000	± 10%	2.50 ± 0.30
C3225X5R1C226M	X5R	16V	22,000,000	± 20%	2.50 ± 0.30
C3225X5R1A106K	X5R	10V	10,000,000	± 10%	2.00 ± 0.20
C3225X5R1A106M	X5R	10V	10,000,000	± 20%	2.00 ± 0.20
C3225X5R1A156M/2.30	X5R	10V	15,000,000	± 20%	2.30 ± 0.20
C3225X5R1A226M	X5R	10V	22,000,000	± 20%	2.30 ± 0.20
C3225X5R1A336M	X5R	10V	33,000,000	± 20%	2.00 ± 0.20
C3225X5R1A476M	X5R	10V	47,000,000	± 20%	2.50 ± 0.30
C3225X5R0J226M/1.60	X5R	6.3V	22,000,000	± 20%	1.60 ± 0.20
C3225X5R0J226K/2.00	X5R	6.3V	22,000,000	± 10%	2.00 ± 0.20
C3225X5R0J226M/2.00	X5R	6.3V	22,000,000	± 20%	2.00 ± 0.20
C3225X5R0J226K/2.50	X5R	6.3V	22,000,000	± 10%	2.50 ± 0.30
C3225X5R0J226M/2.50	X5R	6.3V	22,000,000	± 20%	2.50 ± 0.30
C3225X5R0J336M/2.00	X5R	6.3V	33,000,000	± 20%	2.00 ± 0.20
C3225X5R0J336M/2.50	X5R	6.3V	33,000,000	± 20%	2.50 ± 0.30
C3225X5R0J476M	X5R	6.3V	47,000,000	± 20%	2.50 ± 0.30
C3225X5R0J686M	X5R	6.3V	68,000,000	± 20%	2.00 ± 0.20
C3225X5R0J107M	X5R	6.3V	100,000,000	± 20%	2.50 ± 0.30
C3225X6S1H475K	X6S	50V	4,700,000	± 10%	2.50 ± 0.30
C3225X6S1H475M	X6S	50V	4,700,000	± 20%	2.50 ± 0.30
C3225X6S0J476M	X6S	6.3V	47,000,000	± 20%	2.50 ± 0.30
C3225X6S0J107M	X6S	6.3V	100,000,000	± 20%	2.50 ± 0.30
C3225X6S0G107M	X6S	4V	100,000,000	± 20%	2.50 ± 0.30

Class 3 (General Purpose)

Temperature Characteristics: Y5V (+22/-82%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C3225Y5V1H475Z/1.15	Y5V	50V	4,700,000	+80/-20%	1.15 ± 0.15
C3225Y5V1H475Z/1.60	Y5V	50V	4,700,000	+80/-20%	1.60 ± 0.20
C3225Y5V1H106Z	Y5V	50V	10,000,000	+80/-20%	1.60 ± 0.20
C3225Y5V1E106Z/1.30	Y5V	25V	10,000,000	+80/-20%	1.30 ± 0.20
C3225Y5V1E106Z/1.60	Y5V	25V	10,000,000	+80/-20%	1.60 ± 0.20
C3225Y5V1E226Z	Y5V	25V	22,000,000	+80/-20%	2.00 ± 0.20
C3225Y5V1C106Z/1.15	Y5V	16V	10,000,000	+80/-20%	1.15 ± 0.15
C3225Y5V1C106Z/1.60	Y5V	16V	10,000,000	+80/-20%	1.60 ± 0.20
C3225Y5V1C226Z/1.30	Y5V	16V	22,000,000	+80/-20%	1.30 ± 0.20
C3225Y5V1C226Z/2.00	Y5V	16V	22,000,000	+80/-20%	2.00 ± 0.20
C3225Y5V1C476Z	Y5V	16V	47,000,000	+80/-20%	2.30 ± 0.20
C3225Y5V1A226Z/1.15	Y5V	10V	22,000,000	+80/-20%	1.15 ± 0.15
C3225Y5V1A476Z	Y5V	10V	47,000,000	+80/-20%	2.00 ± 0.20
C3225Y5V0J107Z	Y5V	6.3V	100,000,000	+80/-20%	2.50 ± 0.30

Capacitance Range Chart

C4532 [EIA CC1812]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC)
Rated Voltage: 50V (1H)

Capacitance (pF)	Cap Code	Tolerance	C0G
			1H (50V)
47,000	473	J: ± 05%	
68,000	683		
100,000	104		
150,000	154		
220,000	224		

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X5R (± 15%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

Capacitance (pF)	Cap Code	Tolerance	X7R			X5R			
			1H (50V)	1E (25V)	1C (16V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)
1,000,000	105	K: ± 10%							
1,500,000	155	M: ± 20%							
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								

Capacitance Range Chart

Temperature Characteristics: Y5V (+22/-82%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A)

Capacitance (pF)	Cap Code	Tolerance	Y5V			
			1H (50V)	1E (25V)	1C (16V)	1A (10V)
10,000,000	106	Z: +80/-20%				
22,000,000	226					
47,000,000	476					
100,000,000	107					

Standard Thickness

1.60 ± 0.20 mm	2.30 ± 0.20 mm	2.80 ± 0.30 mm
2.00 ± 0.20 mm	2.50 ± 0.30 mm	3.20 ± 0.30 mm

Capacitance Range Table

C4532 [EIA CC1812]

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C4532C0G1H473J	C0G	50V	47,000	± 5%	1.60 ± 0.20
C4532C0G1H683J	C0G	50V	68,000	± 5%	1.60 ± 0.20
C4532C0G1H104J	C0G	50V	100,000	± 5%	2.00 ± 0.20
C4532C0G1H154J	C0G	50V	150,000	± 5%	2.50 ± 0.30
C4532C0G1H224J	C0G	50V	220,000	± 5%	3.20 ± 0.30

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%), X5R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C4532X7R1H105K	X7R	50V	1,000,000	± 10%	1.60 ± 0.20
C4532X7R1H105M	X7R	50V	1,000,000	± 20%	1.60 ± 0.20
C4532X7R1H155K/1.60	X7R	50V	1,500,000	± 10%	1.60 ± 0.20
C4532X7R1H155M/1.60	X7R	50V	1,500,000	± 20%	1.60 ± 0.20
C4532X7R1H225K	X7R	50V	2,200,000	± 10%	1.60 ± 0.20
C4532X7R1H225M	X7R	50V	2,200,000	± 20%	1.60 ± 0.20
C4532X7R1H335K	X7R	50V	3,300,000	± 10%	2.00 ± 0.20
C4532X7R1H335M	X7R	50V	3,300,000	± 20%	2.00 ± 0.20
C4532X7R1H475K/2.00	X7R	50V	4,700,000	± 10%	2.00 ± 0.20
C4532X7R1H475M/2.00	X7R	50V	4,700,000	± 20%	2.00 ± 0.20
C4532X7R1H685K	X7R	50V	6,800,000	± 10%	2.50 ± 0.30
C4532X7R1H685M	X7R	50V	6,800,000	± 20%	2.50 ± 0.30
C4532X7R1E475M/2.00	X7R	25V	4,700,000	± 20%	2.00 ± 0.20
C4532X7R1E106K	X7R	25V	10,000,000	± 10%	2.50 ± 0.30
C4532X7R1E106M	X7R	25V	10,000,000	± 20%	2.50 ± 0.30
C4532X7R1E156M/2.80	X7R	25V	15,000,000	± 20%	2.80 ± 0.30
C4532X7R1E226M	X7R	25V	22,000,000	± 20%	2.50 ± 0.30
C4532X7R1C106K	X7R	16V	10,000,000	± 10%	2.30 ± 0.20
C4532X7R1C106M	X7R	16V	10,000,000	± 20%	2.30 ± 0.20
C4532X7R1C226M/2.00	X7R	16V	22,000,000	± 20%	2.00 ± 0.20
C4532X7R1C226M/2.30	X7R	16V	22,000,000	± 20%	2.30 ± 0.20
C4532X7R1C336M	X7R	16V	33,000,000	± 20%	2.50 ± 0.30
C4532X5R1E106K	X5R	25V	10,000,000	± 10%	2.50 ± 0.30
C4532X5R1E106M	X5R	25V	10,000,000	± 20%	2.50 ± 0.30
C4532X5R1E156M/2.80	X5R	25V	15,000,000	± 20%	2.80 ± 0.30
C4532X5R1E226M	X5R	25V	22,000,000	± 20%	2.50 ± 0.30
C4532X5R1C226M/2.00	X5R	16V	22,000,000	± 20%	2.00 ± 0.20
C4532X5R1C226M/2.30	X5R	16V	22,000,000	± 20%	2.30 ± 0.20
C4532X5R1C336M	X5R	16V	33,000,000	± 20%	2.50 ± 0.30
C4532X5R1A226M	X5R	10V	22,000,000	± 20%	2.30 ± 0.20
C4532X5R1A336M	X5R	10V	33,000,000	± 20%	2.30 ± 0.20
C4532X5R1A476M	X5R	10V	47,000,000	± 20%	2.80 ± 0.30
C4532X5R1A107M	X5R	10V	100,000,000	± 20%	2.80 ± 0.30
C4532X5R0J476M	X5R	6.3V	47,000,000	± 20%	2.50 ± 0.30
C4532X5R0J686M	X5R	6.3V	68,000,000	± 20%	2.80 ± 0.30
C4532X5R0J107M	X5R	6.3V	100,000,000	± 20%	2.80 ± 0.30

Class 3 (General Purpose)

Temperature Characteristics: Y5V (+22/-82%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C4532Y5V1H106Z	Y5V	50V	10,000,000	+80/-20%	2.00 ± 0.20
C4532Y5V1E226Z	Y5V	25V	22,000,000	+80/-20%	2.00 ± 0.20
C4532Y5V1C476Z	Y5V	16V	47,000,000	+80/-20%	2.50 ± 0.30
C4532Y5V1A107Z	Y5V	10V	100,000,000	+80/-20%	2.50 ± 0.30

Capacitance Range Chart

C5750 [EIA CC2220]

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X5R (± 15%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

Capacitance (pF)	Cap Code	Tolerance	X7R			X5R				
			1H (50V)	1E (25V)	1C (16V)	1H (50V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)
4,700,000	475	K: ± 10%								
6,800,000	685	M: ± 20%								
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									

Capacitance Range Chart

Temperature Characteristics: Y5V (+22/-82%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A)

Capacitance (pF)	Cap Code	Tolerance	Y5V			
			1H (50V)	1E (25V)	1C (16V)	1A (10V)
22,000,000	226	Z: +80/-20%				
47,000,000	476					
100,000,000	107					

Standard Thickness

2.00 ± 0.20 mm 2.30 ± 0.20 mm 2.50 ± 0.30 mm 2.80 ± 0.30 mm

Capacitance Range Table

C5750 [EIA CC2220]

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%), X5R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C5750X7R1H475K/2.00	X7R	50V	4,700,000	± 10%	2.00 ± 0.20
C5750X7R1H475M/2.00	X7R	50V	4,700,000	± 20%	2.00 ± 0.20
C5750X7R1H475M/2.80	X7R	50V	4,700,000	± 20%	2.80 ± 0.30
C5750X7R1H685K	X7R	50V	6,800,000	± 10%	2.50 ± 0.30
C5750X7R1H685M	X7R	50V	6,800,000	± 20%	2.50 ± 0.30
C5750X7R1H106K	X7R	50V	10,000,000	± 10%	2.30 ± 0.20
C5750X7R1H106M	X7R	50V	10,000,000	± 20%	2.30 ± 0.20
C5750X7R1E106M	X7R	25V	10,000,000	± 20%	2.00 ± 0.20
C5750X7R1E156M	X7R	25V	15,000,000	± 20%	2.30 ± 0.20
C5750X7R1E226M	X7R	25V	22,000,000	± 20%	2.50 ± 0.30
C5750X7R1C226M	X7R	16V	22,000,000	± 20%	2.80 ± 0.30
C5750X7R1C476M	X7R	16V	47,000,000	± 20%	2.30 ± 0.20
C5750X5R1H106K	X5R	50V	10,000,000	± 10%	2.30 ± 0.20
C5750X5R1H106M	X5R	50V	10,000,000	± 20%	2.30 ± 0.20
C5750X5R1E226M	X5R	25V	22,000,000	± 20%	2.30 ± 0.20
C5750X5R1C336M	X5R	16V	33,000,000	± 20%	2.00 ± 0.20
C5750X5R1C476M	X5R	16V	47,000,000	± 20%	2.30 ± 0.20
C5750X5R1A686M	X5R	10V	68,000,000	± 20%	2.30 ± 0.20
C5750X5R1A107M	X5R	10V	100,000,000	± 20%	2.80 ± 0.30
C5750X5R0J107M	X5R	6.3V	100,000,000	± 20%	2.80 ± 0.30

Class 3 (General Purpose)

Temperature Characteristics: Y5V (+22/-82%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C5750Y5V1H226Z	Y5V	50V	22,000,000	+80/-20%	2.00 ± 0.20
C5750Y5V1E476Z	Y5V	25V	47,000,000	+80/-20%	2.00 ± 0.20
C5750Y5V1C107Z	Y5V	16V	100,000,000	+80/-20%	2.50 ± 0.30
C5750Y5V1A107Z	Y5V	10V	100,000,000	+80/-20%	2.50 ± 0.30

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TDK

MULTILAYER CERAMIC CHIP CAPACITORS

C Series
Mid Voltage Application

Type:
C1005 [EIA CC0402]
C1608 [EIA CC0603]
C2012 [EIA CC0805]
C3216 [EIA CC1206]
C3225 [EIA CC1210]
C4532 [EIA CC1812]
C5750 [EIA CC2220]

Issue date: October 2010

TDK MLCC
US Catalog

Version A10

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Please read before using this product

SAFETY REMINDERS

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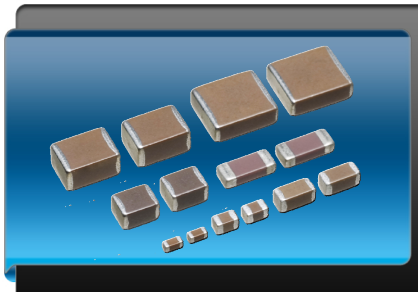


C Series

Mid Voltage Application

Type: C1005, C1608, C2012,
C3216, C3225, C4532, C5750

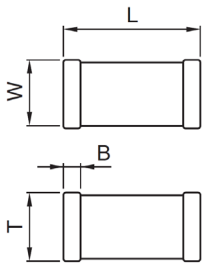
Features

- Unique electrode design allows higher voltage application in smaller case size
- SMT package will help down sizing and lightening of the weight of the product
- A monolithic structure ensures superior mechanical strength and reliability.
- High capacitance has been achieved through precision technologies that enable the use of multiple thinner ceramic dielectric layers.
- Owing to their low ESR and excellent frequency characteristics, these products are optimally suited for high frequency and high-density type power supplies.
- High-accuracy automatic mounting is facilitated through the maintenance of very precise dimensional tolerances.
- Low residual inductance assures superior frequency characteristics.
- Low stray capacitance ensures high conformity with nominal values, thereby simplifying the circuit design process.
- Voltage rating of up to 630V
- High mechanical strength
- No polarity

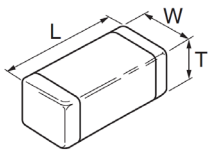
Applications

- Snubber in switching power supply
- Ringer cap in telephone set and modem
- Flash light in camera
- DSU/TA in ISDN lines
- HID (High Intensity Discharge Lamp)
- Output bypass in power supply
- Driver circuit in plasma display
- Noise bypass in automotive
- Other mid voltage applications

Shape & Dimensions



Dimensions in mm



L	Body Length
W	Body Width
T	Body Height
B	Terminal Width

Part Number Construction

C 3216 X7R 2J 103 K T XXXX

Series Name

Dimensions L x W (mm)

Case Code	Length	Width
C1005	1.00 ± 0.05	0.50 ± 0.05
C1608	1.60 ± 0.10	0.80 ± 0.10
C2012	2.00 ± 0.20	1.25 ± 0.20
C3216	3.20 ± 0.20	1.60 ± 0.20
C3225	3.20 ± 0.40	2.50 ± 0.30
C4532	4.50 ± 0.40	3.20 ± 0.40
C5750	5.70 ± 0.40	5.00 ± 0.40

Temperature Characteristic

Temperature Characteristics	Capacitance Change	Temperature Range
C0G	0±30 ppm/ºC	-55 to +125ºC
X7R	±15%	-55 to +125ºC
X7S	±22%	-55 to +125ºC

Rated Voltage (DC)

Voltage Code	Voltage(DC)
2A	100V
2E	250V
2J	630V

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.

Capacitance Code	Capacitance
0R5	0.5pF
010	1pF
102	1,000pF (1nF)
105	1,000,000pF (1µF)

Capacitance Tolerance

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

Packaging Style

Packaging Code	Style
T	Tape and Reel

Internal Codes

Capacitance Range Table

C1005 [EIA CC0402]

Class 2 (Temperature Stable)

Temperature Characteristics: X7S (± 22%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1005X7S2A102K	X7S	100V	1000	± 10%	0.50 ± 0.05
C1005X7S2A102M	X7S	100V	1000	± 20%	0.50 ± 0.05
C1005X7S2A152K	X7S	100V	1500	± 10%	0.50 ± 0.05
C1005X7S2A152M	X7S	100V	1500	± 20%	0.50 ± 0.05
C1005X7S2A222K	X7S	100V	2200	± 10%	0.50 ± 0.05
C1005X7S2A222M	X7S	100V	2200	± 20%	0.50 ± 0.05
C1005X7S2A332K	X7S	100V	3300	± 10%	0.50 ± 0.05
C1005X7S2A332M	X7S	100V	3300	± 20%	0.50 ± 0.05
C1005X7S2A472K	X7S	100V	4700	± 10%	0.50 ± 0.05
C1005X7S2A472M	X7S	100V	4700	± 20%	0.50 ± 0.05
C1005X7S2A682K	X7S	100V	6800	± 10%	0.50 ± 0.05
C1005X7S2A682M	X7S	100V	6800	± 20%	0.50 ± 0.05
C1005X7S2A103K	X7S	100V	10000	± 10%	0.50 ± 0.05
C1005X7S2A103M	X7S	100V	10000	± 20%	0.50 ± 0.05

Capacitance Range Chart

C1608 [EIA CC0603]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC)
Rated Voltage: 250V (2E), 100V (2A)

Capacitance (pF)	Cap Code	Tolerance	C0G	
			2E (250V)	2A (100V)
100	101	J: ± 5%		
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			
1,200	122			

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X7S (± 22%)
Rated Voltage: 100V (2A)

Capacitance (pF)	Cap Code	Tolerance	X7R	X7S
			2A (100V)	2A (100V)
1,000	102	K: ± 10%		
1,500	152	M: ± 20%		
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			

Standard Thickness

0.80 ± 0.15 mm

• All specifications are subject to change without notice. Please read the precautions before using the product.

Capacitance Range Table

C1608 [EIA CC0603]

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1608C0G2A101J	C0G	100V	100	± 5%	0.80 ± 0.15
C1608C0G2A121J	C0G	100V	120	± 5%	0.80 ± 0.15
C1608C0G2A151J	C0G	100V	150	± 5%	0.80 ± 0.15
C1608C0G2A181J	C0G	100V	180	± 5%	0.80 ± 0.15
C1608C0G2A221J	C0G	100V	220	± 5%	0.80 ± 0.15
C1608C0G2A271J	C0G	100V	270	± 5%	0.80 ± 0.15
C1608C0G2A331J	C0G	100V	330	± 5%	0.80 ± 0.15
C1608C0G2A391J	C0G	100V	390	± 5%	0.80 ± 0.15
C1608C0G2A471J	C0G	100V	470	± 5%	0.80 ± 0.15
C1608C0G2A561J	C0G	100V	560	± 5%	0.80 ± 0.15
C1608C0G2A681J	C0G	100V	680	± 5%	0.80 ± 0.15
C1608C0G2A821J	C0G	100V	820	± 5%	0.80 ± 0.15
C1608C0G2A102J	C0G	100V	1,000	± 5%	0.80 ± 0.15
C1608C0G2A122J	C0G	100V	1,200	± 5%	0.80 ± 0.15
C1608C0G2E101J	C0G	250V	100	± 5%	0.80 ± 0.15
C1608C0G2E121J	C0G	250V	120	± 5%	0.80 ± 0.15
C1608C0G2E151J	C0G	250V	150	± 5%	0.80 ± 0.15
C1608C0G2E181J	C0G	250V	180	± 5%	0.80 ± 0.15
C1608C0G2E221J	C0G	250V	220	± 5%	0.80 ± 0.15
C1608C0G2E271J	C0G	250V	270	± 5%	0.80 ± 0.15
C1608C0G2E331J	C0G	250V	330	± 5%	0.80 ± 0.15
C1608C0G2E391J	C0G	250V	390	± 5%	0.80 ± 0.15
C1608C0G2E471J	C0G	250V	470	± 5%	0.80 ± 0.15
C1608C0G2E561J	C0G	250V	560	± 5%	0.80 ± 0.15
C1608C0G2E681J	C0G	250V	680	± 5%	0.80 ± 0.15

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%), X7S (± 22%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1608X7R2A102K	X7R	100V	1,000	± 10%	0.80 ± 0.15
C1608X7R2A102M	X7R	100V	1,000	± 20%	0.80 ± 0.15
C1608X7R2A152K	X7R	100V	1,500	± 10%	0.80 ± 0.15
C1608X7R2A152M	X7R	100V	1,500	± 20%	0.80 ± 0.15
C1608X7R2A222K	X7R	100V	2,200	± 10%	0.80 ± 0.15
C1608X7R2A222M	X7R	100V	2,200	± 20%	0.80 ± 0.15
C1608X7R2A332K	X7R	100V	3,300	± 10%	0.80 ± 0.15
C1608X7R2A332M	X7R	100V	3,300	± 20%	0.80 ± 0.15
C1608X7R2A472K	X7R	100V	4,700	± 10%	0.80 ± 0.15
C1608X7R2A472M	X7R	100V	4,700	± 20%	0.80 ± 0.15
C1608X7R2A682K	X7R	100V	6,800	± 10%	0.80 ± 0.15
C1608X7R2A682M	X7R	100V	6,800	± 20%	0.80 ± 0.15
C1608X7R2A103K	X7R	100V	10,000	± 10%	0.80 ± 0.15
C1608X7R2A103M	X7R	100V	10,000	± 20%	0.80 ± 0.15
C1608X7R2A153K	X7R	100V	15,000	± 10%	0.80 ± 0.15
C1608X7R2A153M	X7R	100V	15,000	± 20%	0.80 ± 0.15
C1608X7R2A223K	X7R	100V	22,000	± 10%	0.80 ± 0.15
C1608X7R2A223M	X7R	100V	22,000	± 20%	0.80 ± 0.15
C1608X7S2A333K	X7S	100V	33,000	± 10%	0.80 ± 0.15
C1608X7S2A333M	X7S	100V	33,000	± 20%	0.80 ± 0.15
C1608X7S2A473K	X7S	100V	47,000	± 10%	0.80 ± 0.15
C1608X7S2A473M	X7S	100V	47,000	± 20%	0.80 ± 0.15
C1608X7S2A683K	X7S	100V	68,000	± 10%	0.80 ± 0.15
C1608X7S2A683M	X7S	100V	68,000	± 20%	0.80 ± 0.15
C1608X7S2A104K	X7S	100V	100,000	± 10%	0.80 ± 0.15
C1608X7S2A104M	X7S	100V	100,000	± 20%	0.80 ± 0.15

Capacitance Range Chart

C2012 [EIA CC0805]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC)
Rated Voltage: 250V (2E), 100V (2A)

Capacitance (pF)	Cap Code	Tolerance	C0G	
			2E (250V)	2A (100V)
100	101	J: ± 5%		
220	221			
470	471			
820	821			
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			

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X7S (± 22%)
Rated Voltage: 250V(2E), 100V (2A)

Capacitance (pF)	Cap Code	Tolerance	X7R		X7S
			2E (250V)	2A (100V)	2A (100V)
1,000	102	K: ± 10%			
1,500	152	M: ± 20%			
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				
1,000,000	105				

Standard Thickness

0.60 ± 0.15 mm 0.85 ± 0.15 mm 1.25 ± 0.20 mm

• All specifications are subject to change without notice. Please read the precautions before using the product.

Capacitance Range Table

C2012 [EIA CC0805]

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C2012C0G2A101J	C0G	100V	100	± 5%	0.60 ± 0.15
C2012C0G2A221J	C0G	100V	220	± 5%	0.60 ± 0.15
C2012C0G2A471J	C0G	100V	470	± 5%	0.60 ± 0.15
C2012C0G2A102J	C0G	100V	1,000	± 5%	0.60 ± 0.15
C2012C0G2A122J	C0G	100V	1,200	± 5%	0.60 ± 0.15
C2012C0G2A152J	C0G	100V	1,500	± 5%	0.60 ± 0.15
C2012C0G2A182J	C0G	100V	1,800	± 5%	0.85 ± 0.15
C2012C0G2A222J	C0G	100V	2,200	± 5%	0.85 ± 0.15
C2012C0G2A272J	C0G	100V	2,700	± 5%	1.25 ± 0.20
C2012C0G2A332J	C0G	100V	3,300	± 5%	1.25 ± 0.20
C2012C0G2A392J	C0G	100V	3,900	± 5%	1.25 ± 0.20
C2012C0G2A472J	C0G	100V	4,700	± 5%	1.25 ± 0.20
C2012C0G2E101J	C0G	250V	100	± 5%	0.60 ± 0.15
C2012C0G2E821J	C0G	250V	820	± 5%	0.60 ± 0.15
C2012C0G2E102J	C0G	250V	1,000	± 5%	0.85 ± 0.15
C2012C0G2E122J	C0G	250V	1,200	± 5%	0.85 ± 0.15
C2012C0G2E152J	C0G	250V	1,500	± 5%	0.85 ± 0.15
C2012C0G2E182J	C0G	250V	1,800	± 5%	1.25 ± 0.20
C2012C0G2E222J	C0G	250V	2,200	± 5%	1.25 ± 0.20
C2012C0G2E272J	C0G	250V	2,700	± 5%	1.25 ± 0.20

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C2012X7R2A102K	X7R	100V	1,000	± 10%	0.85 ± 0.15
C2012X7R2A102M	X7R	100V	1,000	± 20%	0.85 ± 0.15
C2012X7R2A152K	X7R	100V	1,500	± 10%	0.85 ± 0.15
C2012X7R2A152M	X7R	100V	1,500	± 20%	0.85 ± 0.15
C2012X7R2A222K	X7R	100V	2,200	± 10%	0.85 ± 0.15
C2012X7R2A222M	X7R	100V	2,200	± 20%	0.85 ± 0.15
C2012X7R2A332K	X7R	100V	3,300	± 10%	0.85 ± 0.15
C2012X7R2A332M	X7R	100V	3,300	± 20%	0.85 ± 0.15
C2012X7R2A472K	X7R	100V	4,700	± 10%	0.85 ± 0.15
C2012X7R2A472M	X7R	100V	4,700	± 20%	0.85 ± 0.15
C2012X7R2A682K	X7R	100V	6,800	± 10%	0.85 ± 0.15
C2012X7R2A682M	X7R	100V	6,800	± 20%	0.85 ± 0.15
C2012X7R2A103K	X7R	100V	10,000	± 10%	0.85 ± 0.15
C2012X7R2A103M	X7R	100V	10,000	± 20%	0.85 ± 0.15
C2012X7R2A153K	X7R	100V	15,000	± 10%	1.25 ± 0.20
C2012X7R2A153M	X7R	100V	15,000	± 20%	1.25 ± 0.20
C2012X7R2A223K	X7R	100V	22,000	± 10%	1.25 ± 0.20
C2012X7R2A223M	X7R	100V	22,000	± 20%	1.25 ± 0.20
C2012X7R2A333K	X7R	100V	33,000	± 10%	1.25 ± 0.20
C2012X7R2A333M	X7R	100V	33,000	± 20%	1.25 ± 0.20
C2012X7R2A473K	X7R	100V	47,000	± 10%	1.25 ± 0.20
C2012X7R2A473M	X7R	100V	47,000	± 20%	1.25 ± 0.20
C2012X7R2A683K	X7R	100V	68,000	± 10%	0.85 ± 0.15
C2012X7R2A683M	X7R	100V	68,000	± 20%	0.85 ± 0.15
C2012X7R2A104K	X7R	100V	100,000	± 10%	1.25 ± 0.20
C2012X7R2A104M	X7R	100V	100,000	± 20%	1.25 ± 0.20
C2012X7R2E102K	X7R	250V	1,000	± 10%	0.85 ± 0.15
C2012X7R2E102M	X7R	250V	1,000	± 20%	0.85 ± 0.15
C2012X7R2E152K	X7R	250V	1,500	± 10%	0.85 ± 0.15
C2012X7R2E152M	X7R	250V	1,500	± 20%	0.85 ± 0.15

Capacitance Range Table

C2012 [EIA CC0805]

Class 2 (Temperature Stable) (Continued)

Temperature Characteristics: X7R (± 15%), X7S (± 22%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C2012X7R2E222K	X7R	250V	2,200	± 10%	0.85 ± 0.15
C2012X7R2E222M	X7R	250V	2,200	± 20%	0.85 ± 0.15
C2012X7R2E332K	X7R	250V	3,300	± 10%	0.85 ± 0.15
C2012X7R2E332M	X7R	250V	3,300	± 20%	0.85 ± 0.15
C2012X7R2E472K	X7R	250V	4,700	± 10%	0.85 ± 0.15
C2012X7R2E472M	X7R	250V	4,700	± 20%	0.85 ± 0.15
C2012X7R2E682K	X7R	250V	6,800	± 10%	1.25 ± 0.20
C2012X7R2E682M	X7R	250V	6,800	± 20%	1.25 ± 0.20
C2012X7R2E103K	X7R	250V	10,000	± 10%	1.25 ± 0.20
C2012X7R2E103M	X7R	250V	10,000	± 20%	1.25 ± 0.20
C2012X7R2E153K	X7R	250V	15,000	± 10%	1.25 ± 0.20
C2012X7R2E153M	X7R	250V	15,000	± 20%	1.25 ± 0.20
C2012X7R2E223K	X7R	250V	22,000	± 10%	1.25 ± 0.20
C2012X7R2E223M	X7R	250V	22,000	± 20%	1.25 ± 0.20
C2012X7S2A154K	X7S	100V	150,000	± 10%	0.85 ± 0.15
C2012X7S2A154M	X7S	100V	150,000	± 20%	0.85 ± 0.15
C2012X7S2A224K	X7S	100V	220,000	± 10%	0.85 ± 0.15
C2012X7S2A224M	X7S	100V	220,000	± 20%	0.85 ± 0.15
C2012X7S2A334K	X7S	100V	330,000	± 10%	1.25 ± 0.20
C2012X7S2A334M	X7S	100V	330,000	± 20%	1.25 ± 0.20
C2012X7S2A474K	X7S	100V	470,000	± 10%	1.25 ± 0.20
C2012X7S2A474M	X7S	100V	470,000	± 20%	1.25 ± 0.20
C2012X7S2A105K	X7S	100V	1,000,000	± 10%	1.25 ± 0.20
C2012X7S2A105M	X7S	100V	1,000,000	± 20%	1.25 ± 0.20

Capacitance Range Chart

C3216 [EIA CC1206]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC)
Rated Voltage: 630 (2J), 250V (2E), 100V (2A)

Capacitance (pF)	Cap Code	Tolerance	C0G		
			2J (630V)	2E (250V)	2A (100V)
100	101	J: ± 5%			
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				
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				

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X7S (± 22%)
Rated Voltage: 630V (2J), 250V(2E), 100V (2A)

Capacitance (pF)	Cap Code	Tolerance	X7R			X7S
			2J (630V)	2E (250V)	2A (100V)	2A (100V)
1,000	102	K: ± 10%				
1,500	152	M: ± 20%				
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					
1,000,000	105					
2,200,000	225					

Standard Thickness

0.60 ± 0.15 mm 0.85 ± 0.15 mm 1.15 ± 0.15 mm 1.30 ± 0.20 mm 1.60 ± 0.20 mm

Capacitance Range Table

C3216 [EIA CC1206]

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C3216C0G2A392J	C0G	100V	3,900	± 5%	0.60 ± 0.15
C3216C0G2A472J	C0G	100V	4,700	± 5%	0.85 ± 0.15
C3216C0G2A562J	C0G	100V	5,600	± 5%	0.85 ± 0.15
C3216C0G2A682J	C0G	100V	6,800	± 5%	1.15 ± 0.15
C3216C0G2A822J	C0G	100V	8,200	± 5%	1.15 ± 0.15
C3216C0G2A103J	C0G	100V	10,000	± 5%	1.15 ± 0.15
C3216C0G2E332J	C0G	250V	3,300	± 5%	0.85 ± 0.15
C3216C0G2E392J	C0G	250V	3,900	± 5%	1.15 ± 0.15
C3216C0G2E472J	C0G	250V	4,700	± 5%	1.15 ± 0.15
C3216C0G2E562J	C0G	250V	5,600	± 5%	1.15 ± 0.15
C3216C0G2E682J	C0G	250V	6,800	± 5%	1.60 ± 0.20
C3216C0G2E822J	C0G	250V	8,200	± 5%	1.60 ± 0.20
C3216C0G2J101J	C0G	630V	100	± 5%	0.60 ± 0.15
C3216C0G2J121J	C0G	630V	120	± 5%	0.60 ± 0.15
C3216C0G2J151J	C0G	630V	150	± 5%	0.60 ± 0.15
C3216C0G2J181J	C0G	630V	180	± 5%	0.60 ± 0.15
C3216C0G2J221J	C0G	630V	220	± 5%	0.60 ± 0.15
C3216C0G2J271J	C0G	630V	270	± 5%	0.60 ± 0.15
C3216C0G2J331J	C0G	630V	330	± 5%	0.60 ± 0.15
C3216C0G2J391J	C0G	630V	390	± 5%	0.60 ± 0.15
C3216C0G2J471J	C0G	630V	470	± 5%	0.85 ± 0.15
C3216C0G2J561J	C0G	630V	560	± 5%	0.85 ± 0.15
C3216C0G2J681J	C0G	630V	680	± 5%	0.85 ± 0.15
C3216C0G2J821J	C0G	630V	820	± 5%	0.85 ± 0.15
C3216C0G2J102J	C0G	630V	1,000	± 5%	0.85 ± 0.15
C3216C0G2J122J	C0G	630V	1,200	± 5%	0.85 ± 0.15
C3216C0G2J152J	C0G	630V	1,500	± 5%	1.15 ± 0.15
C3216C0G2J182J	C0G	630V	1,800	± 5%	1.15 ± 0.15
C3216C0G2J222J	C0G	630V	2,200	± 5%	1.15 ± 0.15
C3216C0G2J272J	C0G	630V	2,700	± 5%	1.60 ± 0.20
C3216C0G2J332J	C0G	630V	3,300	± 5%	1.60 ± 0.20

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C3216X7R2A333K	X7R	100V	33,000	± 10%	1.15 ± 0.15
C3216X7R2A333M	X7R	100V	33,000	± 20%	1.15 ± 0.15
C3216X7R2A473K	X7R	100V	47,000	± 10%	1.15 ± 0.15
C3216X7R2A473M	X7R	100V	47,000	± 20%	1.15 ± 0.15
C3216X7R2A683K	X7R	100V	68,000	± 10%	1.60 ± 0.20
C3216X7R2A683M	X7R	100V	68,000	± 20%	1.60 ± 0.20
C3216X7R2A104K	X7R	100V	100,000	± 10%	1.60 ± 0.20
C3216X7R2A104M	X7R	100V	100,000	± 20%	1.60 ± 0.20
C3216X7R2A154K	X7R	100V	150,000	± 10%	1.60 ± 0.20
C3216X7R2A154M	X7R	100V	150,000	± 20%	1.60 ± 0.20
C3216X7R2A224K	X7R	100V	220,000	± 10%	1.15 ± 0.15
C3216X7R2A224M	X7R	100V	220,000	± 20%	1.15 ± 0.15
C3216X7R2A334K	X7R	100V	330,000	± 10%	1.30 ± 0.20
C3216X7R2A334M	X7R	100V	330,000	± 20%	1.30 ± 0.20
C3216X7R2A474K	X7R	100V	470,000	± 10%	1.60 ± 0.20
C3216X7R2A474M	X7R	100V	470,000	± 20%	1.60 ± 0.20
C3216X7R2A105K	X7R	100V	1,000,000	± 10%	1.60 ± 0.20
C3216X7R2A105M	X7R	100V	1,000,000	± 20%	1.60 ± 0.20
C3216X7R2E153K	X7R	250V	15,000	± 10%	1.15 ± 0.15
C3216X7R2E153M	X7R	250V	15,000	± 20%	1.15 ± 0.15

Capacitance Range Table

C3216 [EIA CC1206]

Class 2 (Temperature Stable) (Continued)

Temperature Characteristics: X7R (± 15%), X7S (± 22%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C3216X7R2E223K	X7R	250V	22,000	± 10%	1.15 ± 0.15
C3216X7R2E223M	X7R	250V	22,000	± 20%	1.15 ± 0.15
C3216X7R2E333K	X7R	250V	33,000	± 10%	1.60 ± 0.20
C3216X7R2E333M	X7R	250V	33,000	± 20%	1.60 ± 0.20
C3216X7R2E473K	X7R	250V	47,000	± 10%	1.60 ± 0.20
C3216X7R2E473M	X7R	250V	47,000	± 20%	1.60 ± 0.20
C3216X7R2E683K	X7R	250V	68,000	± 10%	1.60 ± 0.20
C3216X7R2E683M	X7R	250V	68,000	± 20%	1.60 ± 0.20
C3216X7R2E104K	X7R	250V	100,000	± 10%	1.60 ± 0.20
C3216X7R2E104M	X7R	250V	100,000	± 20%	1.60 ± 0.20
C3216X7R2J102K	X7R	630V	1,000	± 10%	1.15 ± 0.15
C3216X7R2J102M	X7R	630V	1,000	± 20%	1.15 ± 0.15
C3216X7R2J152K	X7R	630V	1,500	± 10%	1.15 ± 0.15
C3216X7R2J152M	X7R	630V	1,500	± 20%	1.15 ± 0.15
C3216X7R2J222K	X7R	630V	2,200	± 10%	1.15 ± 0.15
C3216X7R2J222M	X7R	630V	2,200	± 20%	1.15 ± 0.15
C3216X7R2J332K	X7R	630V	3,300	± 10%	1.15 ± 0.15
C3216X7R2J332M	X7R	630V	3,300	± 20%	1.15 ± 0.15
C3216X7R2J472K	X7R	630V	4,700	± 10%	1.15 ± 0.15
C3216X7R2J472M	X7R	630V	4,700	± 20%	1.15 ± 0.15
C3216X7R2J682K	X7R	630V	6,800	± 10%	1.15 ± 0.15
C3216X7R2J682M	X7R	630V	6,800	± 20%	1.15 ± 0.15
C3216X7R2J103K	X7R	630V	10,000	± 10%	1.15 ± 0.15
C3216X7R2J103M	X7R	630V	10,000	± 20%	1.15 ± 0.15
C3216X7R2J153K	X7R	630V	15,000	± 10%	1.30 ± 0.20
C3216X7R2J153M	X7R	630V	15,000	± 20%	1.30 ± 0.20
C3216X7R2J223K	X7R	630V	22,000	± 10%	1.30 ± 0.20
C3216X7R2J223M	X7R	630V	22,000	± 20%	1.30 ± 0.20
C3216X7R2J333K	X7R	630V	33,000	± 10%	1.60 ± 0.20
C3216X7R2J333M	X7R	630V	33,000	± 20%	1.60 ± 0.20
C3216X7S2A225K	X7S	100V	2,200,000	± 10%	1.60 ± 0.20
C3216X7S2A225M	X7S	100V	2,200,000	± 20%	1.60 ± 0.20

Capacitance Range Chart

C3225 [EIA CC1210]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC)
Rated Voltage: 630 (2J), 250V (2E), 100V (2A)

Capacitance (pF)	Cap Code	Tolerance	C0G		
			2J (630V)	2E (250V)	2A (100V)
3,900	392	J: ± 5%			
4,700	472				
5,600	562				
6,800	682				
10,000	103				
15,000	153				
22,000	223				
33,000	333				
47,000	473				

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X7S (± 22%)
Rated Voltage: 630V (2J), 250V(2E), 100V (2A)

Capacitance (pF)	Cap Code	Tolerance	X7R			X7S
			2J (630V)	2E (250V)	2A (100V)	2A (100V)
47,000	473	K: ± 10%				
68,000	683	M: ± 20%				
100,000	104					
150,000	154					
220,000	224					
330,000	334					
470,000	474					
680,000	684					
1,000,000	105					
2,200,000	225					
3,300,000	335					
4,700,000	475					

Standard Thickness

1.25 ± 0.20 mm 1.60 ± 0.20 mm 2.00 ± 0.20 mm 2.30 ± 0.20 mm

Capacitance Range Table

C3225 [EIA CC1210]

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C3225C0G2A153J	C0G	100V	15,000	± 5%	1.25 ± 0.20
C3225C0G2A223J	C0G	100V	22,000	± 5%	1.60 ± 0.20
C3225C0G2A333J	C0G	100V	33,000	± 5%	2.00 ± 0.20
C3225C0G2A473J	C0G	100V	47,000	± 5%	2.30 ± 0.20
C3225C0G2E103J	C0G	250V	10,000	± 5%	1.60 ± 0.20
C3225C0G2E153J	C0G	250V	15,000	± 5%	2.00 ± 0.20
C3225C0G2J392J	C0G	630V	3,900	± 5%	1.25 ± 0.20
C3225C0G2J472J	C0G	630V	4,700	± 5%	1.60 ± 0.20
C3225C0G2J562J	C0G	630V	5,600	± 5%	1.60 ± 0.20
C3225C0G2J682J	C0G	630V	6,800	± 5%	2.00 ± 0.20

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%), X7S (± 22%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C3225X7R2A334K	X7R	100V	330,000	± 10%	2.00 ± 0.20
C3225X7R2A334M	X7R	100V	330,000	± 20%	2.00 ± 0.20
C3225X7R2A474K	X7R	100V	470,000	± 10%	2.00 ± 0.20
C3225X7R2A474M	X7R	100V	470,000	± 20%	2.00 ± 0.20
C3225X7R2A684K	X7R	100V	680,000	± 10%	1.60 ± 0.20
C3225X7R2A684M	X7R	100V	680,000	± 20%	1.60 ± 0.20
C3225X7R2A105K	X7R	100V	1,000,000	± 10%	2.00 ± 0.20
C3225X7R2A105M	X7R	100V	1,000,000	± 20%	2.00 ± 0.20
C3225X7R2A225K	X7R	100V	2,200,000	± 10%	2.30 ± 0.20
C3225X7R2A225M	X7R	100V	2,200,000	± 20%	2.30 ± 0.20
C3225X7R2E104K	X7R	250V	100,000	± 10%	2.00 ± 0.20
C3225X7R2E104M	X7R	250V	100,000	± 20%	2.00 ± 0.20
C3225X7R2E154K	X7R	250V	150,000	± 10%	2.00 ± 0.20
C3225X7R2E154M	X7R	250V	150,000	± 20%	2.00 ± 0.20
C3225X7R2E224K	X7R	250V	220,000	± 10%	2.00 ± 0.20
C3225X7R2E224M	X7R	250V	220,000	± 20%	2.00 ± 0.20
C3225X7R2J473K	X7R	630V	47,000	± 10%	2.00 ± 0.20
C3225X7R2J473M	X7R	630V	47,000	± 20%	2.00 ± 0.20
C3225X7R2J683K	X7R	630V	68,000	± 10%	2.00 ± 0.20
C3225X7R2J683M	X7R	630V	68,000	± 20%	2.00 ± 0.20
C3225X7S2A335K	X7S	100V	3,300,000	± 10%	2.00 ± 0.20
C3225X7S2A335M	X7S	100V	3,300,000	± 20%	2.00 ± 0.20
C3225X7S2A475K	X7S	100V	4,700,000	± 10%	2.00 ± 0.20
C3225X7S2A475M	X7S	100V	4,700,000	± 20%	2.00 ± 0.20

Capacitance Range Chart

C4532 [EIA CC1812]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC)
Rated Voltage: 630 (2J), 250V (2E), 100V (2A)

Capacitance (pF)	Cap Code	Tolerance	C0G		
			2J (630V)	2E (250V)	2A (100V)
8,200	822	J: ± 5%			
10,000	103				
15,000	153				
22,000	223				
33,000	333				
47,000	473				
68,000	683				
100,000	104				

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X7S (± 22%)
Rated Voltage: 630V (2J), 250V(2E), 100V (2A)

Capacitance (pF)	Cap Code	Tolerance	X7R			X7S
			2J (630V)	2E (250V)	2A (100V)	2A (100V)
68,000	683	K: ± 10%				
100,000	104	M: ± 20%				
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					
4,700,000	475					

Standard Thickness

1.60 ± 0.20 mm | 2.00 ± 0.20 mm | 2.30 ± 0.20 mm | 2.50 ± 0.30 mm | 3.20 ± 0.30 mm

Capacitance Range Table

C4532 [EIA CC1812]

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C4532C0G2A473J	C0G	100V	47,000	± 5%	2.00 ± 0.20
C4532C0G2A683J	C0G	100V	68,000	± 5%	2.50 ± 0.30
C4532C0G2A104J	C0G	100V	100,000	± 5%	3.20 ± 0.30
C4532C0G2E223J	C0G	250V	22,000	± 5%	1.60 ± 0.20
C4532C0G2E333J	C0G	250V	33,000	± 5%	2.00 ± 0.20
C4532C0G2E473J	C0G	250V	47,000	± 5%	3.20 ± 0.30
C4532C0G2J822J	C0G	630V	8,200	± 5%	1.60 ± 0.20
C4532C0G2J103J	C0G	630V	10,000	± 5%	1.60 ± 0.20
C4532C0G2J153J	C0G	630V	15,000	± 5%	2.50 ± 0.30
C4532C0G2J223J	C0G	630V	22,000	± 5%	3.20 ± 0.30

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C4532X7R2A684K	X7R	100V	680,000	± 10%	2.30 ± 0.20
C4532X7R2A684M	X7R	100V	680,000	± 20%	2.30 ± 0.20
C4532X7R2A105K	X7R	100V	1,000,000	± 10%	2.30 ± 0.20
C4532X7R2A105M	X7R	100V	1,000,000	± 20%	2.30 ± 0.20
C4532X7R2A155K	X7R	100V	1,500,000	± 10%	2.30 ± 0.20
C4532X7R2A155M	X7R	100V	1,500,000	± 20%	2.30 ± 0.20
C4532X7R2A225K	X7R	100V	2,200,000	± 10%	2.30 ± 0.20
C4532X7R2A225M	X7R	100V	2,200,000	± 20%	2.30 ± 0.20
C4532X7R2E154K	X7R	250V	150,000	± 10%	1.60 ± 0.20
C4532X7R2E154M	X7R	250V	150,000	± 20%	1.60 ± 0.20
C4532X7R2E224K	X7R	250V	220,000	± 10%	2.30 ± 0.20
C4532X7R2E224M	X7R	250V	220,000	± 20%	2.30 ± 0.20
C4532X7R2E334K	X7R	250V	330,000	± 10%	2.30 ± 0.20
C4532X7R2E334M	X7R	250V	330,000	± 20%	2.30 ± 0.20
C4532X7R2E474K	X7R	250V	470,000	± 10%	2.30 ± 0.20
C4532X7R2E474M	X7R	250V	470,000	± 20%	2.30 ± 0.20
C4532X7R2J683K	X7R	630V	68,000	± 10%	1.60 ± 0.20
C4532X7R2J683M	X7R	630V	68,000	± 20%	1.60 ± 0.20
C4532X7R2J104K	X7R	630V	100,000	± 10%	2.30 ± 0.20
C4532X7R2J104M	X7R	630V	100,000	± 20%	2.30 ± 0.20
C4532X7S2A475M	X7S	100V	4,700,000	± 20%	2.30 ± 0.20

Capacitance Range Chart

C5750 [EIA CC2220]

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X7S (± 22%)
Rated Voltage: 630V (2J), 250V(2E), 100V (2A)

Capacitance (pF)	Cap Code	Tolerance	X7R			X7S
			2J (630V)	2E (250V)	2A (100V)	2A (100V)
150,000	154	K: ± 10%				
220,000	224	M: ± 20%				
330,000	334					
470,000	474					
680,000	684					
1,000,000	105					
1,500,000	155					
2,200,000	225					
3,300,000	335					
4,700,000	475					
10,000,000	106					
15,000,000	156					

Standard Thickness

- 1.60 ± 0.20 mm
- 2.30 ± 0.20 mm
- 2.50 ± 0.30 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%), X7S (± 22%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C5750X7R2A105K	X7R	100V	1,000,000	± 10%	2.30 ± 0.20
C5750X7R2A105M	X7R	100V	1,000,000	± 20%	2.30 ± 0.20
C5750X7R2A155K	X7R	100V	1,500,000	± 10%	2.30 ± 0.20
C5750X7R2A155M	X7R	100V	1,500,000	± 20%	2.30 ± 0.20
C5750X7R2A225K	X7R	100V	2,200,000	± 10%	2.30 ± 0.20
C5750X7R2A225M	X7R	100V	2,200,000	± 20%	2.30 ± 0.20
C5750X7R2A335K	X7R	100V	3,300,000	± 10%	2.30 ± 0.20
C5750X7R2A335M	X7R	100V	3,300,000	± 20%	2.30 ± 0.20
C5750X7R2A475K	X7R	100V	4,700,000	± 10%	2.30 ± 0.20
C5750X7R2A475M	X7R	100V	4,700,000	± 20%	2.30 ± 0.20
C5750X7R2E334K	X7R	250V	330,000	± 10%	1.60 ± 0.20
C5750X7R2E334M	X7R	250V	330,000	± 20%	1.60 ± 0.20
C5750X7R2E474K	X7R	250V	470,000	± 10%	2.30 ± 0.20
C5750X7R2E474M	X7R	250V	470,000	± 20%	2.30 ± 0.20
C5750X7R2E684K	X7R	250V	680,000	± 10%	2.30 ± 0.20
C5750X7R2E684M	X7R	250V	680,000	± 20%	2.30 ± 0.20
C5750X7R2E105K	X7R	250V	1,000,000	± 10%	2.30 ± 0.20
C5750X7R2E105M	X7R	250V	1,000,000	± 20%	2.30 ± 0.20
C5750X7R2J154K	X7R	630V	150,000	± 10%	1.60 ± 0.20
C5750X7R2J154M	X7R	630V	150,000	± 20%	1.60 ± 0.20
C5750X7R2J224K	X7R	630V	220,000	± 10%	2.30 ± 0.20
C5750X7R2J224M	X7R	630V	220,000	± 20%	2.30 ± 0.20
C5750X7S2A106M	X7S	100V	10,000,000	± 20%	2.30 ± 0.20
C5750X7S2A156M	X7S	100V	15,000,000	± 20%	2.50 ± 0.30

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TDK

MULTILAYER CERAMIC CHIP CAPACITORS

C Series
High Voltage Application

Type: C4520 [EIA CC1808]
C4532 [EIA CC1812]

Issue date: October 2010

TDK MLCC
US Catalog

Version A10

REMINDERS

Please read before using this product

SAFETY REMINDERS

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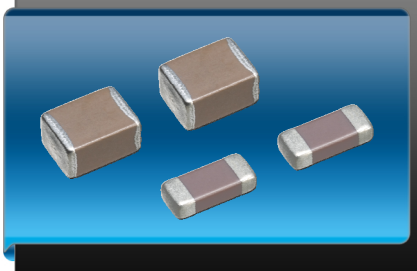


C Series

High Voltage Application

Type: C4520, C4532

Features

- Advanced design provides improved withstand voltage characteristics.
- TDK's proprietary internal electrode structure and the use of low-dielectric-strength material result in highly reliable performance in high-voltage applications.
- Complies with ISO8802-3 for LAN applications.
- Designed exclusively for reflow soldering.

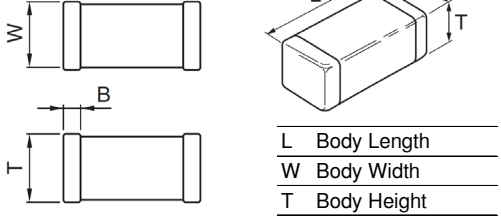
Applications

- Inverter circuits with a liquid crystal backlight
- LAN card
- General high voltage circuits.
- Noise bypass for power supply
- Transceiver for LAN
- Hub, etc.

Cautions

- This product intended solely for reflow soldering.
- A slit of about 1mm on the circuit board is recommended to improve removal of the flux after soldering.
- Ensure that this product is completely dried following washing.
- Because this product will be subjected to high voltages, use only low-activity rosin flux (with 0.2% max. of chlorine).
- Using this product with aluminum circuit boards must be considered a special implementation because the high heat stress levels are involved. In case of using aluminum circuit boards, please contact TDK.

Shape & Dimensions



L	Body Length
W	Body Width
T	Body Height
B	Terminal Width

Dimensions in mm

Part Number Construction

C 4532 X7R 3D 222 K T XXXX

Series Name

Dimensions L x W (mm)

Case Code	Length	Width
C4520	4.50 ± 0.40	2.00 ± 0.30
C4532	4.50 ± 0.40	3.20 ± 0.40

Temperature Characteristic

Temperature Characteristics	Capacitance Change	Temperature Range
C0G	0±30 ppm/ºC	-55 to +125ºC
X7R	±15%	-55 to +125ºC

Rated Voltage (DC)

Voltage Code	Voltage(DC)
3A	1,000V
3D	2,000V
3F	3,000V

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.

Capacitance Code	Capacitance
0R5	0.5pF
010	1pF
102	1,000pF (1nF)
105	1,000,000pF (1µF)

Capacitance Tolerance

Tolerance Code	Tolerance
F	± 1pF
K	± 10%

Packaging Style

Packaging Code	Style
T	Tape and Reel

Internal Codes

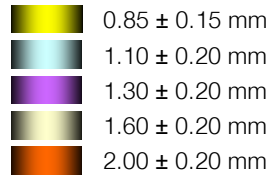
Capacitance Range Chart

C4520 [EIA CC1808]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC), X7R (± 15%)
Rated Voltage: 3,000 (3F), 2,000V (3D), 1,000V (3A)

Capacitance (pF)	Cap Code	Tolerance	C0G	X7R	
			3F (3,000V)	3D (2,000V)	3A (1,000V)
10	100	F: ± 1pF			
12	120	K: ± 10%			
15	150				
18	180				
22	220				
27	270				
33	330				
39	390				
47	470				
56	560				
68	680				
82	820				
100	101				
470	471				
1,000	102				



Capacitance Range Table

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C4520C0G3F100F	C0G	3000V	10	± 1pF	0.85 ± 0.15
C4520C0G3F120K	C0G	3000V	12	± 10%	0.85 ± 0.15
C4520C0G3F150K	C0G	3000V	15	± 10%	1.10 ± 0.20
C4520C0G3F180K	C0G	3000V	18	± 10%	1.10 ± 0.20
C4520C0G3F220K	C0G	3000V	22	± 10%	1.10 ± 0.20
C4520C0G3F270K	C0G	3000V	27	± 10%	1.60 ± 0.20
C4520C0G3F330K	C0G	3000V	33	± 10%	1.60 ± 0.20
C4520C0G3F390K	C0G	3000V	39	± 10%	1.60 ± 0.20
C4520C0G3F470K	C0G	3000V	47	± 10%	1.60 ± 0.20
C4520C0G3F560K	C0G	3000V	56	± 10%	2.00 ± 0.20
C4520C0G3F680K	C0G	3000V	68	± 10%	2.00 ± 0.20
C4520C0G3F820K	C0G	3000V	82	± 10%	2.00 ± 0.20
C4520C0G3F101K	C0G	3000V	100	± 10%	2.00 ± 0.20

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C4520X7R3A471K	X7R	1000V	470	± 10%	1.30 ± 0.20
C4520X7R3A102K	X7R	1000V	1,000	± 10%	1.30 ± 0.20
C4520X7R3D471K	X7R	2000V	470	± 10%	1.30 ± 0.20
C4520X7R3D102K	X7R	2000V	1,000	± 10%	1.30 ± 0.20

Capacitance Range Chart

C4532 [EIA CC1812]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC), X7R (± 15%)
Rated Voltage: 3,000 (3F), 2,000V (3D), 1,000V (3A)

Capacitance (pF)	Cap Code	Tolerance	C0G	X7R	
			3F (3,000V)	3D (2,000V)	3A (1,000V)
100	101	K: ± 10%			
120	121				
150	151				
180	181				
220	221				
270	271				
330	331				
2,200	222				
4,700	472				
10,000	103				

Standard Thickness

- 1.30 ± 0.20 mm
- 1.60 ± 0.20 mm
- 2.00 ± 0.20 mm
- 2.30 ± 0.20 mm
- 2.50 ± 0.30 mm

Capacitance Range Table

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C4532C0G3F101K	C0G	3000V	100	± 10%	1.60 ± 0.20
C4532C0G3F121K	C0G	3000V	120	± 10%	1.60 ± 0.20
C4532C0G3F151K	C0G	3000V	150	± 10%	1.60 ± 0.20
C4532C0G3F181K	C0G	3000V	180	± 10%	1.60 ± 0.20
C4532C0G3F221K	C0G	3000V	220	± 10%	2.00 ± 0.20
C4532C0G3F271K	C0G	3000V	270	± 10%	2.30 ± 0.20
C4532C0G3F331K	C0G	3000V	330	± 10%	2.50 ± 0.30

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C4532X7R3A472K	X7R	1000V	4,700	± 10%	1.60 ± 0.20
C4532X7R3A103K	X7R	1000V	10,000	± 10%	2.00 ± 0.20
C4532X7R3D222K	X7R	2000V	2,200	± 10%	1.30 ± 0.20

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TDK

MULTILAYER CERAMIC CHIP CAPACITORS

C Series
High Temperature Application

Type: C1005 [EIA CC0402]
C1608 [EIA CC0603]
C2012 [EIA CC0805]
C3216 [EIA CC1206]
C3225 [EIA CC1210]

Issue date: October 2010

TDK MLCC
US Catalog

Version A10

REMINDERS

Please read before using this product

SAFETY REMINDERS

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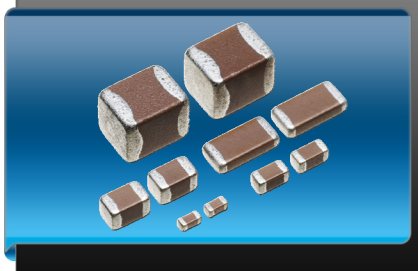


C Series

High Temperature Application

Type: C1005, C1608, C2012, C3216, C3225

Features

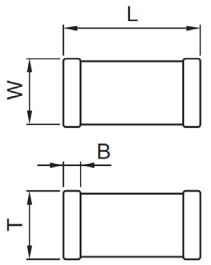
- These products have no polarity.
- Their electrostatic capacity temperature response is stable at 15% even in high temperature ranges (up to 150°C).

Parameters	Specifications
Temperature Characteristics	-55 to +150ºC ΔC/C = ±15%
Operating Temperature	-55 to +150ºC
Dissipation Factor	3% maximum
Insulation Resistance	10 GΩ or 500 MΩ • μF minimum
Voltage Proof	2.5 • rated voltage for 1 to 5 seconds Charge/Discharge ≤ 50 mA

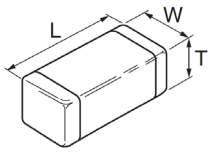
Applications

- Automotive (underhood)
- Measurement instruments used at high temperature environments
- LCD display
- Sensor Module

Shape & Dimensions



Dimensions in mm



L	Body Length
W	Body Width
T	Body Height
B	Terminal Width

Part Number Construction

C 3225 X8R 1E 335 K T XXXX

Series Name

Dimensions L x W (mm)

Case Code	Length	Width
C1005	1.00 ± 0.05	0.50 ± 0.05
C1608	1.60 ± 0.10	0.80 ± 0.10
C2012	2.00 ± 0.20	1.25 ± 0.20
C3216	3.20 ± 0.20	1.60 ± 0.20
C3225	3.20 ± 0.40	2.50 ± 0.30

Temperature Characteristic

Temperature Characteristics	Capacitance Change	Temperature Range
X8R	±15%	-55 to +150ºC

Rated Voltage (DC)

Voltage Code	Voltage(DC)
1C	16V
1E	25V
1H	50V
2A	100V

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.

Capacitance Code	Capacitance
0R5	0.5pF
010	1pF
102	1,000pF (1nF)
105	1,000,000pF (1μF)

Capacitance Tolerance

Tolerance Code	Tolerance
K	± 10%

Packaging Style

Packaging Code	Style
T	Tape and Reel

Internal Codes

Capacitance Range Chart

C1005 [EIA CC0402]

Capacitance Range Chart

Temperature Characteristics: X8R (± 15%)

Rated Voltage: 50V (1H), 25V (1E), 16V (1C)

Capacitance (pF)	Cap Code	Tolerance	X8R	
			1H (50V)	1E (25V)
150	151	K: ± 10%		
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			

Standard Thickness

0.50 ± 0.05 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X8R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1005X8R1E682K	X8R	25V	6,800	± 10%	0.50 ± 0.05
C1005X8R1E103K	X8R	25V	10,000	± 10%	0.50 ± 0.05
C1005X8R1H151K	X8R	50V	150	± 10%	0.50 ± 0.05
C1005X8R1H221K	X8R	50V	220	± 10%	0.50 ± 0.05
C1005X8R1H331K	X8R	50V	330	± 10%	0.50 ± 0.05
C1005X8R1H471K	X8R	50V	470	± 10%	0.50 ± 0.05
C1005X8R1H681K	X8R	50V	680	± 10%	0.50 ± 0.05
C1005X8R1H102K	X8R	50V	1,000	± 10%	0.50 ± 0.05
C1005X8R1H152K	X8R	50V	1,500	± 10%	0.50 ± 0.05
C1005X8R1H222K	X8R	50V	2,200	± 10%	0.50 ± 0.05
C1005X8R1H332K	X8R	50V	3,300	± 10%	0.50 ± 0.05
C1005X8R1H472K	X8R	50V	4,700	± 10%	0.50 ± 0.05

Capacitance Range Chart

C1608 [EIA CC0603]

Capacitance Range Chart

Temperature Characteristics: X8R (± 15%)
Rated Voltage: 100V (2A), 50V (1H), 25V (1E), 16V (1C)

Capacitance (pF)	Cap Code	Tolerance	X8R		
			2A (100V)	1H (50V)	1E (25V)
1,000	102	K: ± 10%	■	■	
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				■

Standard Thickness
■ 0.80 ± 0.15 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X8R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1608X8R1E683K	X8R	25V	68,000	± 10%	0.80 ± 0.15
C1608X8R1E104K	X8R	25V	100,000	± 10%	0.80 ± 0.15
C1608X8R1H102K	X8R	50V	1,000	± 10%	0.80 ± 0.15
C1608X8R1H152K	X8R	50V	1,500	± 10%	0.80 ± 0.15
C1608X8R1H222K	X8R	50V	2,200	± 10%	0.80 ± 0.15
C1608X8R1H332K	X8R	50V	3,300	± 10%	0.80 ± 0.15
C1608X8R1H472K	X8R	50V	4,700	± 10%	0.80 ± 0.15
C1608X8R1H682K	X8R	50V	6,800	± 10%	0.80 ± 0.15
C1608X8R1H103K	X8R	50V	10,000	± 10%	0.80 ± 0.15
C1608X8R1H153K	X8R	50V	15,000	± 10%	0.80 ± 0.15
C1608X8R1H223K	X8R	50V	22,000	± 10%	0.80 ± 0.15
C1608X8R1H333K	X8R	50V	33,000	± 10%	0.80 ± 0.15
C1608X8R1H473K	X8R	50V	47,000	± 10%	0.80 ± 0.15
C1608X8R2A102K	X8R	100V	1,000	± 10%	0.80 ± 0.15
C1608X8R2A152K	X8R	100V	1,500	± 10%	0.80 ± 0.15
C1608X8R2A222K	X8R	100V	2,200	± 10%	0.80 ± 0.15
C1608X8R2A332K	X8R	100V	3,300	± 10%	0.80 ± 0.15
C1608X8R2A472K	X8R	100V	4,700	± 10%	0.80 ± 0.15
C1608X8R2A682K	X8R	100V	6,800	± 10%	0.80 ± 0.15
C1608X8R2A103K	X8R	100V	10,000	± 10%	0.80 ± 0.15
C1608X8R2A153K	X8R	100V	15,000	± 10%	0.80 ± 0.15

Capacitance Range Chart

C2012 [EIA CC0805]

Capacitance Range Chart

Temperature Characteristics: X8R (± 15%)
Rated Voltage: 100V (2A), 50V (1H), 25V (1E), 16V (1C)

Capacitance (pF)	Cap Code	Tolerance	X8R		
			2A (100V)	1H (50V)	1E (25V)
22,000	223	K: ± 10%			
68,000	683				
100,000	104				
150,000	154				
220,000	224				
330,000	334				

Standard Thickness
0.85 ± 0.15 mm
1.25 ± 0.20 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X8R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C2012X8R1E154K	X8R	25V	150,000	± 10%	0.85 ± 0.15
C2012X8R1E224K	X8R	25V	220,000	± 10%	1.25 ± 0.20
C2012X8R1E334K	X8R	25V	330,000	± 10%	1.25 ± 0.20
C2012X8R1H683K	X8R	50V	68,000	± 10%	1.25 ± 0.20
C2012X8R1H104K	X8R	50V	100,000	± 10%	1.25 ± 0.20
C2012X8R2A223K	X8R	100V	22,000	± 10%	1.25 ± 0.20

Capacitance Range Chart

C3216 [EIA CC1206]

Capacitance Range Chart

Temperature Characteristics: X8R (± 15%)
Rated Voltage: 100V (2A), 50V (1H), 25V (1E), 16V (1C)

Capacitance (pF)	Cap Code	Tolerance	X8R		
			2A (100V)	1H (50V)	1E (25V)
33,000	333	K: ± 10%			
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				

Standard Thickness

- 0.85 ± 0.15 mm
- 1.15 ± 0.15 mm
- 1.60 ± 0.20 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X8R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C3216X8R1E334K	X8R	25V	330,000	± 10%	0.85 ± 0.15
C3216X8R1E474K	X8R	25V	470,000	± 10%	0.85 ± 0.15
C3216X8R1E684K	X8R	25V	680,000	± 10%	1.15 ± 0.15
C3216X8R1E105K	X8R	25V	1,000,000	± 10%	1.60 ± 0.20
C3216X8R1H154K	X8R	50V	150,000	± 10%	0.85 ± 0.15
C3216X8R1H224K	X8R	50V	220,000	± 10%	1.15 ± 0.15
C3216X8R1H334K	X8R	50V	330,000	± 10%	1.60 ± 0.20
C3216X8R1H474K	X8R	50V	470,000	± 10%	1.60 ± 0.20
C3216X8R2A333K	X8R	100V	33,000	± 10%	0.85 ± 0.15
C3216X8R2A473K	X8R	100V	47,000	± 10%	0.85 ± 0.15
C3216X8R2A683K	X8R	100V	68,000	± 10%	1.15 ± 0.15
C3216X8R2A104K	X8R	100V	100,000	± 10%	1.15 ± 0.15
C3216X8R2A154K	X8R	100V	150,000	± 10%	1.60 ± 0.20

Capacitance Range Chart

C3225 [EIA CC1210]

Capacitance Range Chart

Temperature Characteristics: X8R (± 15%)
Rated Voltage: 100V (2A), 50V (1H), 25V (1E), 16V (1C)

Capacitance (pF)	Cap Code	Tolerance	X8R		
			2A (100V)	1H (50V)	1E (25V)
1,500,000	155	K: ± 10%			
2,200,000	225				
3,300,000	335				

Standard Thickness
1.60 ± 0.20 mm
2.00 ± 0.20 mm
2.50 ± 0.30 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X8R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C3225X8R1E155K	X8R	25V	1,500,000	± 10%	1.60 ± 0.20
C3225X8R1E225K	X8R	25V	2,200,000	± 10%	2.00 ± 0.20
C3225X8R1E335K	X8R	25V	3,300,000	± 10%	2.50 ± 0.30

TDK

MULTILAYER CERAMIC CHIP CAPACITORS

C Series
Tight Tolerance Capacitors

Type: C1005 [EIA CC0402]
C1608 [EIA CC0603]

Issue date: October 2010

TDK MLCC
US Catalog

Version A10

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C Series

Tight Tolerance Capacitors

Type: C1005, C1608

Available Through Distribution Only*

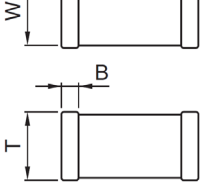
Features

- Available in 1% and 2% capacitance tolerance
- Suitable for high frequency applications
- A monolithic structure ensures superior mechanical strength and reliability
- High-accuracy automatic mounting is facilitated through the maintenance of very precise dimensional tolerances
- Composed of only ceramics and metals, these capacitors provide extremely dependable performance, exhibiting virtually no degradation even when subjected to temperature extremes
- Low stray capacitance ensures high conformity with nominal values, thereby simplifying the circuit design process
- Low residual inductance assures superior frequency characteristics
- Owing to their low ESR and excellent frequency characteristics, these products are optimally suited for high frequency and high-density type power supplies

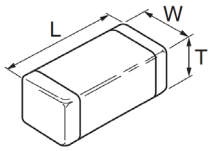
Applications

- Electronics equipment
- Mobile communications equipment
- LTE/WiMAX base stations
- High frequency RF modules
- Test and measurement equipment
- Matching/Coupling circuits
- Tuning circuits

Shape & Dimensions



Dimensions in mm



L	Body Length
W	Body Width
T	Body Height
B	Terminal Width

Part Number Construction

C 1608 C0G 2A 102 F T XXXX

Series Name

Dimensions L x W (mm)

Case Code	Length	Width
C1005	1.00 ± 0.05	0.50 ± 0.05
C1608	1.60 ± 0.10	0.80 ± 0.10

Temperature Characteristic

Temperature Characteristics	Capacitance Change	Temperature Range
C0G	0±30 ppm/ºC	-55 to +125ºC

Rated Voltage (DC)

Voltage Code	Voltage(DC)
1H	50V
2A	100V

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.

Capacitance Code	Capacitance
0R5	0.5pF
010	1pF
102	1,000pF (1nF)
105	1,000,000pF (1µF)

Capacitance Tolerance

Tolerance Code	Tolerance
F	± 1%
G	± 2%

Packaging Style

Packaging Code	Style
T	Tape and Reel

Internal Codes

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Capacitance Range Table

C1005 [EIA CC0402]

Available Through Distribution Only*

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1005C0G1H220F	C0G	50V	22	1%	0.50 ± 0.05
C1005C0G1H220G	C0G	50V	22	2%	0.50 ± 0.05
C1005C0G1H470F	C0G	50V	47	1%	0.50 ± 0.05
C1005C0G1H470G	C0G	50V	47	2%	0.50 ± 0.05
C1005C0G1H101F	C0G	50V	100	1%	0.50 ± 0.05
C1005C0G1H101G	C0G	50V	100	2%	0.50 ± 0.05

Capacitance Range Table

C1608 [EIA CC0603]

Available Through Distribution Only*

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1608C0G1H220F	C0G	50V	22	1%	0.80 ± 0.08
C1608C0G1H220G	C0G	50V	22	2%	0.80 ± 0.08
C1608C0G1H470F	C0G	50V	47	1%	0.80 ± 0.08
C1608C0G1H470G	C0G	50V	47	2%	0.80 ± 0.08
C1608C0G1H101F	C0G	50V	100	1%	0.80 ± 0.08
C1608C0G1H101G	C0G	50V	100	2%	0.80 ± 0.08
C1608C0G1H221F	C0G	50V	220	1%	0.80 ± 0.08
C1608C0G1H221G	C0G	50V	220	2%	0.80 ± 0.08
C1608C0G1H471F	C0G	50V	470	1%	0.80 ± 0.08
C1608C0G1H471G	C0G	50V	470	2%	0.80 ± 0.08
C1608C0G1H102F	C0G	50V	1,000	1%	0.80 ± 0.08
C1608C0G1H102G	C0G	50V	1,000	2%	0.80 ± 0.08
C1608C0G2A101F	C0G	100V	100	1%	0.80 ± 0.08
C1608C0G2A101G	C0G	100V	100	2%	0.80 ± 0.08
C1608C0G2A102F	C0G	100V	1,000	1%	0.80 ± 0.08
C1608C0G2A102G	C0G	100V	1,000	2%	0.80 ± 0.08

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TDK

MULTILAYER CERAMIC CHIP CAPACITORS

C Series
High Q Capacitors

Type: C0603 [EIA CC0201]

Issue date: October 2010

TDK MLCC
US Catalog

Version A10

REMINDERS

Please read before using this product

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C Series

High Q Capacitors

Type: C0603

Available Through Distribution Only*

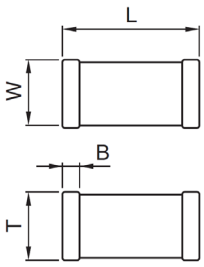
Features

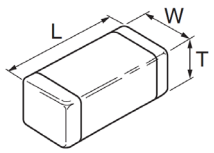
- Higher Q factor than standard capacitors
- High stability with respect to time, temperature, frequency, and voltage
- Excellent attenuation
- High self-resonant frequency
- Lower power dissipation/less energy absorption
- Capacitance range of 0.2pF to 15pF
- Available in standard and tight tolerance
- Please contact TDK for Q values

Applications

- High-frequency applications
- PA modules
- Cellular communication, Bluetooth
- Cable/satellite TV
- GPS/satellite radio
- Filter networks/matching networks
- RF amplifiers/Low noise amplifiers
- VCOs, TCXOs, etc.
- DC blocking circuits

Shape & Dimensions





L	Body Length
W	Body Width
T	Body Height
B	Terminal Width

Dimensions in mm

Part Number Construction

C 0603 C0G 1E 150 J T XXXX

Series Name

Dimensions L x W (mm)

Case Code	Length	Width
C0603	0.60±0.03	0.30±0.03

Temperature Characteristic

Temperature Characteristics	Capacitance Change	Temperature Range
C0G	0±30 ppm/ºC	-55 to +125ºC

Rated Voltage (DC)

Voltage Code	Voltage(DC)
1E	25V

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.

Capacitance Code	Capacitance
0R5	0.5pF
010	1pF
102	1,000pF (1nF)
105	1,000,000pF (1µF)

Internal Codes

Packaging Style

Packaging Code	Style
T	Tape and Reel

Capacitance Tolerance

Tolerance Code	Tolerance
B	± 0.10pF
C	± 0.25pF
D	± 0.50pF
E	± 0.20pF
G	± 2%
J	± 5%

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Capacitance Range Chart

C0603 [EIA CC0201]

Available Through Distribution Only*

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)
Rated Voltage: 25V (1E)

Capacitance (pF)	Cap Code	Voltage	Tolerance					
			B (±0.10pF)	C (±0.25pF)	D (±0.50pF)	E (±0.20pF)	G (± 2%)	J (± 5%)
0.2	0R2	25V (1E)	■					
0.3	0R3		■					
0.4	0R4		■					
0.5	0R5		■					
0.6	0R6		■					
0.7	0R7		■					
0.8	0R8		■					
0.9	0R9		■					
1.0	010		■	■				
1.2	1R2		■	■				
1.5	1R5		■	■				
1.8	1R8		■	■				
2.0	020		■	■				
2.2	2R2		■	■				
2.7	2R7		■	■				
3.0	030		■	■				
3.3	3R3		■	■				
3.9	3R9		■	■				
4.0	040		■	■				
4.7	4R7		■	■				
5.0	050		■	■				
5.6	5R6		■	■				
6.0	060		■	■				
6.8	6R8		■	■				
7.0	070		■	■				
8.0	080		■	■				
8.2	8R2		■	■				
9.0	090		■	■				
10.0	100				■	■		
12.0	120						■	■
15.0	150						■	■

Standard Thickness

■ 0.30 ± 0.03 mm

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Capacitance Range Table

C0603 [EIA CC0201]

Available Through Distribution Only*

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C0603C0G1E0R2BTQ	C0G	25V	0.2	± 0.10pF	0.30 ± 0.03
C0603C0G1E0R3BTQ	C0G	25V	0.3	± 0.10pF	0.30 ± 0.03
C0603C0G1E0R4BTQ	C0G	25V	0.4	± 0.10pF	0.30 ± 0.03
C0603C0G1E0R5BTQ	C0G	25V	0.5	± 0.10pF	0.30 ± 0.03
C0603C0G1E0R6BTQ	C0G	25V	0.6	± 0.10pF	0.30 ± 0.03
C0603C0G1E0R7BTQ	C0G	25V	0.7	± 0.10pF	0.30 ± 0.03
C0603C0G1E0R8BTQ	C0G	25V	0.8	± 0.10pF	0.30 ± 0.03
C0603C0G1E0R9BTQ	C0G	25V	0.9	± 0.10pF	0.30 ± 0.03
C0603C0G1E010BTQ	C0G	25V	1	± 0.10pF	0.30 ± 0.03
C0603C0G1E010CTQ	C0G	25V	1	± 0.25pF	0.30 ± 0.03
C0603C0G1E1R2BTQ	C0G	25V	1.2	± 0.10pF	0.30 ± 0.03
C0603C0G1E1R2CTQ	C0G	25V	1.2	± 0.25pF	0.30 ± 0.03
C0603C0G1E1R5BTQ	C0G	25V	1.5	± 0.10pF	0.30 ± 0.03
C0603C0G1E1R5CTQ	C0G	25V	1.5	± 0.25pF	0.30 ± 0.03
C0603C0G1E1R8BTQ	C0G	25V	1.8	± 0.10pF	0.30 ± 0.03
C0603C0G1E1R8CTQ	C0G	25V	1.8	± 0.25pF	0.30 ± 0.03
C0603C0G1E020BTQ	C0G	25V	2	± 0.10pF	0.30 ± 0.03
C0603C0G1E020CTQ	C0G	25V	2	± 0.25pF	0.30 ± 0.03
C0603C0G1E2R2BTX	C0G	25V	2.2	± 0.10pF	0.30 ± 0.03
C0603C0G1E2R2CTX	C0G	25V	2.2	± 0.25pF	0.30 ± 0.03
C0603C0G1E2R7BTX	C0G	25V	2.7	± 0.10pF	0.30 ± 0.03
C0603C0G1E2R7CTX	C0G	25V	2.7	± 0.25pF	0.30 ± 0.03
C0603C0G1E030BTX	C0G	25V	3	± 0.10pF	0.30 ± 0.03
C0603C0G1E030CTX	C0G	25V	3	± 0.25pF	0.30 ± 0.03
C0603C0G1E3R3BTX	C0G	25V	3	± 0.10pF	0.30 ± 0.03
C0603C0G1E3R3CTX	C0G	25V	3.3	± 0.25pF	0.30 ± 0.03
C0603C0G1E3R9BTX	C0G	25V	3.9	± 0.10pF	0.30 ± 0.03
C0603C0G1E3R9CTX	C0G	25V	3.9	± 0.25pF	0.30 ± 0.03
C0603C0G1E040BTX	C0G	25V	4	± 0.10pF	0.30 ± 0.03
C0603C0G1E040CTX	C0G	25V	4	± 0.25pF	0.30 ± 0.03
C0603C0G1E4R7BTX	C0G	25V	4.7	± 0.10pF	0.30 ± 0.03
C0603C0G1E4R7CTX	C0G	25V	4.7	± 0.25pF	0.30 ± 0.03
C0603C0G1E050BTX	C0G	25V	5	± 0.10pF	0.30 ± 0.03
C0603C0G1E050CTX	C0G	25V	5	± 0.25pF	0.30 ± 0.03
C0603C0G1E5R6BTX	C0G	25V	5.6	± 0.10pF	0.30 ± 0.03
C0603C0G1E5R6CTX	C0G	25V	5.6	± 0.25pF	0.30 ± 0.03
C0603C0G1E060BTX	C0G	25V	6	± 0.10pF	0.30 ± 0.03
C0603C0G1E060CTX	C0G	25V	6	± 0.25pF	0.30 ± 0.03
C0603C0G1E6R8BTX	C0G	25V	6.8	± 0.10pF	0.30 ± 0.03
C0603C0G1E6R8CTX	C0G	25V	6.8	± 0.25pF	0.30 ± 0.03
C0603C0G1E070BTX	C0G	25V	7	± 0.10pF	0.30 ± 0.03
C0603C0G1E070CTX	C0G	25V	7	± 0.25pF	0.30 ± 0.03
C0603C0G1E080BTX	C0G	25V	8	± 0.10pF	0.30 ± 0.03
C0603C0G1E080CTX	C0G	25V	8	± 0.25pF	0.30 ± 0.03
C0603C0G1E8R2BTX	C0G	25V	8.2	± 0.10pF	0.30 ± 0.03
C0603C0G1E8R2CTX	C0G	25V	8.2	± 0.25pF	0.30 ± 0.03
C0603C0G1E090BTX	C0G	25V	9	± 0.10pF	0.30 ± 0.03
C0603C0G1E090CTX	C0G	25V	9	± 0.25pF	0.30 ± 0.03
C0603C0G1E100ETX	C0G	25V	10	± 0.20pF	0.30 ± 0.03
C0603C0G1E100DTX	C0G	25V	10	± 0.50pF	0.30 ± 0.03
C0603C0G1E120GTX	C0G	25V	12	± 2%	0.30 ± 0.03
C0603C0G1E120JTX	C0G	25V	12	± 5%	0.30 ± 0.03
C0603C0G1E150GTX	C0G	25V	15	± 2%	0.30 ± 0.03
C0603C0G1E150JTX	C0G	25V	15	± 5%	0.30 ± 0.03

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TDK

MULTILAYER CERAMIC CHIP CAPACITORS

C Series
Open Mode Design

Type: C2012 [EIA CC0805]
C3216 [EIA CC1206]
C3225 [EIA CC1210]
C4532 [EIA CC1812]
C5750 [EIA CC2220]

Issue date: October 2010

TDK MLCC
US Catalog

Version A10

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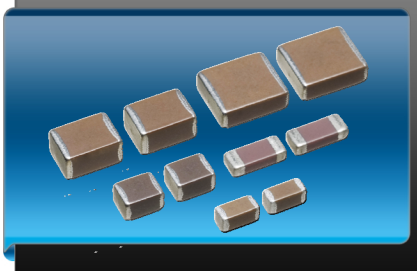


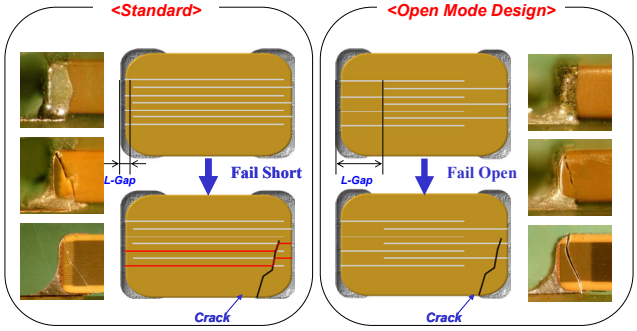
C Series

Open Mode Design

Type: C2012, C3216, C3225, C4532, C5750

Features

- Increase resistance to mechanical bending, temperature cycle, vibration, and electrical stresses
- Available in X7R and X8R dielectrics
- When a chip capacitor is cracked by mechanical stress such as board bending, open mode construction helps user reduce the risk of short circuits
- The Open Mode design defines that the L-Gap length shall be wider than the terminal band width

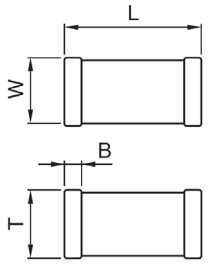


- The Open Mode concept does not guaranteed MLCC will always fail open. This design is intended to reduce the risk of the MLCC failing short. All MLCC caution guidelines apply.

Applications

- Automotive and other high stress applications
- Battery line circuits with high board flex stress

Shape & Dimensions



Dimensions in mm

L	Body Length
W	Body Width
T	Body Height
B	Terminal Width

Part Number Construction

C 3216 X7R 2A 105 K T 5XXX

Series Name

Dimensions L x W (mm)

Case Code	Length	Width
C2012	2.00 ± 0.20	1.25 ± 0.20
C3216	3.20 ± 0.20	1.60 ± 0.20
C3225	3.20 ± 0.40	2.50 ± 0.30
C4532	4.50 ± 0.40	3.20 ± 0.40
C5750	5.70 ± 0.40	5.00 ± 0.40

Temperature Characteristic

Temperature Characteristics	Capacitance Change	Temperature Range
X7R	±15%	-55 to +125ºC
X8R	±15%	-55 to +150ºC

Rated Voltage (DC)

Voltage Code	Voltage(DC)
1C	16V
1E	25V
1H	50V
2A	100V
2E	250V
2J	630V

Internal Codes

Symbol	Design
5	Open Mode

Packaging Style

Packaging Code	Style
T	Tape and Reel

Capacitance Tolerance

Tolerance Code	Tolerance
K	± 10%
M	± 20%

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.

Capacitance Code	Capacitance
0R5	0.5pF
010	1pF
102	1,000pF (1nF)
105	1,000,000pF (1µF)

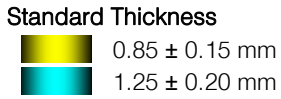
Capacitance Range Chart

C2012 [EIA CC0805]

Capacitance Range Chart

Temperature Characteristics: X7R, (± 15%), X8R (± 15%)
Rated Voltage: 250V (2E), 100V (2A), 50V (1H)

Capacitance (pF)	Cap Code	Tolerance	X7R			X8R
			2E (250V)	2A (100V)	1H (50V)	1H (50V)
1,000	102	K: ± 10%				
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					



Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%), X8R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C2012X7R1H104KT5	X7R	50V	100,000	± 10%	1.25 ± 0.20
C2012X7R2A102KT5	X7R	100V	1,000	± 10%	0.85 ± 0.15
C2012X7R2A152KT5	X7R	100V	1,500	± 10%	0.85 ± 0.15
C2012X7R2A222KT5	X7R	100V	2,200	± 10%	0.85 ± 0.15
C2012X7R2A332KT5	X7R	100V	3,300	± 10%	0.85 ± 0.15
C2012X7R2A472KT5	X7R	100V	4,700	± 10%	0.85 ± 0.15
C2012X7R2A682KT5	X7R	100V	6,800	± 10%	0.85 ± 0.15
C2012X7R2A103KT5	X7R	100V	10,000	± 10%	0.85 ± 0.15
C2012X7R2A153KT5	X7R	100V	15,000	± 10%	1.25 ± 0.20
C2012X7R2A223KT5	X7R	100V	22,000	± 10%	1.25 ± 0.20
C2012X7R2E102KT5	X7R	250V	1,000	± 10%	0.85 ± 0.15
C2012X7R2E152KT5	X7R	250V	1,500	± 10%	0.85 ± 0.15
C2012X7R2E222KT5	X7R	250V	2,200	± 10%	0.85 ± 0.15
C2012X7R2E332KT5	X7R	250V	3,300	± 10%	0.85 ± 0.15
C2012X7R2E472KT5	X7R	250V	4,700	± 10%	0.85 ± 0.15
C2012X7R2E682KT5	X7R	250V	6,800	± 10%	1.25 ± 0.20
C2012X7R2E103KT5	X7R	250V	10,000	± 10%	1.25 ± 0.20
C2012X7R2E153KT5	X7R	250V	15,000	± 10%	1.25 ± 0.20
C2012X8R1H223KT5	X8R	50V	22,000	± 10%	0.85 ± 0.15
C2012X8R1H333KT5	X8R	50V	33,000	± 10%	0.85 ± 0.15
C2012X8R1H473KT5	X8R	50V	47,000	± 10%	1.25 ± 0.20
C2012X8R1H683KT5	X8R	50V	68,000	± 10%	1.25 ± 0.20

Capacitance Range Chart

C3216 [EIA CC1206]

Capacitance Range Chart

Temperature Characteristics: X7R, (± 15%)
Rated Voltage: 630V (2J), 250V (2E), 100V (2A), 16V (1C)

Capacitance (pF)	Cap Code	Tolerance	X7R			
			2J (630V)	2E (250V)	2A (100V)	1C (16V)
1,000	102	K: ± 10%				
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					
1,000,000	105					
4,700,000	475	M: ± 20%				

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C3216X7R1C475MT5	X7R	16V	4,700,000	± 20%	1.60 ± 0.20
C3216X7R2A333KT5	X7R	100V	33,000	± 10%	1.15 ± 0.15
C3216X7R2A473KT5	X7R	100V	47,000	± 10%	1.15 ± 0.15
C3216X7R2A683KT5	X7R	100V	68,000	± 10%	1.60 ± 0.20
C3216X7R2A104KT5	X7R	100V	100,000	± 10%	1.60 ± 0.20
C3216X7R2A154KT5	X7R	100V	150,000	± 10%	1.60 ± 0.20
C3216X7R2A105KT5	X7R	100V	1,000,000	± 10%	1.60 ± 0.20
C3216X7R2E153KT5	X7R	250V	15,000	± 10%	1.15 ± 0.15
C3216X7R2E223KT5	X7R	250V	22,000	± 10%	1.15 ± 0.15
C3216X7R2E333KT5	X7R	250V	33,000	± 10%	1.60 ± 0.20
C3216X7R2E473KT5	X7R	250V	47,000	± 10%	1.60 ± 0.20
C3216X7R2E683KT5	X7R	250V	68,000	± 10%	1.60 ± 0.20
C3216X7R2E104KT5	X7R	250V	100,000	± 10%	1.60 ± 0.20
C3216X7R2J102KT5	X7R	630V	1,000	± 10%	1.15 ± 0.15
C3216X7R2J152KT5	X7R	630V	1,500	± 10%	1.15 ± 0.15
C3216X7R2J222KT5	X7R	630V	2,200	± 10%	1.15 ± 0.15
C3216X7R2J332KT5	X7R	630V	3,300	± 10%	1.15 ± 0.15
C3216X7R2J472KT5	X7R	630V	4,700	± 10%	1.15 ± 0.15
C3216X7R2J682KT5	X7R	630V	6,800	± 10%	1.15 ± 0.15
C3216X7R2J103KT5	X7R	630V	10,000	± 10%	1.15 ± 0.15
C3216X7R2J153KT5	X7R	630V	15,000	± 10%	1.30 ± 0.20
C3216X7R2J223KT5	X7R	630V	22,000	± 10%	1.30 ± 0.20
C3216X7R2J333KT5	X7R	630V	33,000	± 10%	1.60 ± 0.20

Capacitance Range Chart

C3225 [EIA CC1210]

Capacitance Range Chart

Temperature Characteristics: X7R, (± 15%)

Rated Voltage: 630V (2J), 250V (2E), 100V (2A), 50V (1H), 25V (1E), 16V (1C)

Capacitance (pF)	Cap Code	Tolerance	X7R					
			2J (630V)	2E (250V)	2A (100V)	1H (50V)	1E (25V)	1C (16V)
47,000	473	K: ± 10%						
68,000	683							
100,000	104							
150,000	154							
220,000	224							
330,000	334							
470,000	474							
680,000	684							
1,000,000	105							
1,500,000	155							
2,200,000	225							
3,300,000	335							
4,700,000	475							

Standard Thickness

- 1.15 ± 0.15 mm
- 1.60 ± 0.20 mm
- 2.00 ± 0.20 mm
- 2.30 ± 0.20 mm
- 2.50 ± 0.30 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C3225X7R1C335KT5	X7R	16V	3,300,000	± 10%	2.00 ± 0.20
C3225X7R1C475KT5	X7R	16V	4,700,000	± 10%	2.50 ± 0.30
C3225X7R1E105KT5	X7R	25V	1,000,000	± 10%	1.15 ± 0.15
C3225X7R1E155KT5	X7R	25V	1,500,000	± 10%	1.60 ± 0.20
C3225X7R1E225KT5	X7R	25V	2,200,000	± 10%	2.00 ± 0.20
C3225X7R1H474KT5	X7R	50V	470,000	± 10%	1.60 ± 0.20
C3225X7R1H684KT5	X7R	50V	680,000	± 10%	2.00 ± 0.20
C3225X7R2A334KT5	X7R	100V	330,000	± 10%	2.00 ± 0.20
C3225X7R2A225KT5	X7R	100V	2,200,000	± 10%	2.30 ± 0.20
C3225X7R2E104KT5	X7R	250V	100,000	± 10%	2.00 ± 0.20
C3225X7R2E154KT5	X7R	250V	150,000	± 10%	2.00 ± 0.20
C3225X7R2E224KT5	X7R	250V	220,000	± 10%	2.00 ± 0.20
C3225X7R2J473KT5	X7R	630V	47,000	± 10%	2.00 ± 0.20
C3225X7R2J683KT5	X7R	630V	68,000	± 10%	2.00 ± 0.20

Capacitance Range Chart

C4532 [EIA CC1812]

Capacitance Range Chart

Temperature Characteristics: X7R, (± 15%)

Rated Voltage: 630V (2J), 250V (2E), 100V (2A), 50V (1H), 25V (1E), 16V (1C)

Capacitance (pF)	Cap Code	Tolerance	X7R					
			2J (630V)	2E (250V)	2A (100V)	1H (50V)	1E (25V)	1C (16V)
68,000	683	K: ± 10%						
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							
3,300,000	335							
4,700,000	475							
6,800,000	685							
10,000,000	106							

Standard Thickness

- 1.60 ± 0.20 mm
- 2.00 ± 0.20 mm
- 2.30 ± 0.20 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C4532X7R1C685KT5	X7R	16V	6,800,000	± 10%	2.00 ± 0.20
C4532X7R1C106KT5	X7R	16V	10,000,000	± 10%	2.30 ± 0.20
C4532X7R1E335KT5	X7R	25V	3,300,000	± 10%	1.60 ± 0.20
C4532X7R1E475KT5	X7R	25V	4,700,000	± 10%	2.00 ± 0.20
C4532X7R1H105KT5	X7R	50V	1,000,000	± 10%	1.60 ± 0.20
C4532X7R1H155KT5	X7R	50V	1,500,000	± 10%	2.30 ± 0.20
C4532X7R2A684KT5	X7R	100V	680,000	± 10%	2.30 ± 0.20
C4532X7R2E154KT5	X7R	250V	150,000	± 10%	1.60 ± 0.20
C4532X7R2E224KT5	X7R	250V	220,000	± 10%	2.30 ± 0.20
C4532X7R2E334KT5	X7R	250V	330,000	± 10%	2.30 ± 0.20
C4532X7R2E474KT5	X7R	250V	470,000	± 10%	2.30 ± 0.20
C4532X7R2J683KT5	X7R	630V	68,000	± 10%	1.60 ± 0.20
C4532X7R2J104KT5	X7R	630V	100,000	± 10%	2.30 ± 0.20

Capacitance Range Chart

C5750 [EIA CC2220]

Capacitance Range Chart

Temperature Characteristics: X7R, (± 15%)
Rated Voltage: 630V (2J), 250V (2E), 100V (2A), 50V (1H), 25V (1E), 16V (1C)

Capacitance (pF)	Cap Code	Tolerance	X7R					
			2J (630V)	2E (250V)	2A (100V)	1H (50V)	1E (25V)	1C (16V)
150,000	154	K: ± 10%						
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	M: ± 20%						

Standard Thickness
- 1.60 ± 0.20 mm
- 2.00 ± 0.20 mm
- 2.30 ± 0.20 mm
- 2.80 ± 0.30 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C5750X7R1C226MT5	X7R	16V	22,000,000	± 20%	2.80 ± 0.30
C5750X7R1E685KT5	X7R	25V	6,800,000	± 10%	1.60 ± 0.20
C5750X7R1E106KT5	X7R	25V	10,000,000	± 10%	2.00 ± 0.20
C5750X7R1E156MT5	X7R	25V	15,000,000	± 20%	2.80 ± 0.30
C5750X7R1H225KT5	X7R	50V	2,200,000	± 10%	1.60 ± 0.20
C5750X7R1H335KT5	X7R	50V	3,300,000	± 10%	2.30 ± 0.20
C5750X7R1H475KT5	X7R	50V	4,700,000	± 10%	2.80 ± 0.30
C5750X7R2A684KT5	X7R	100V	680,000	± 10%	1.60 ± 0.20
C5750X7R2A105KT5	X7R	100V	1,000,000	± 10%	2.30 ± 0.20
C5750X7R2A155KT5	X7R	100V	1,500,000	± 10%	2.30 ± 0.20
C5750X7R2E334KT5	X7R	250V	330,000	± 10%	1.60 ± 0.20
C5750X7R2E474KT5	X7R	250V	470,000	± 10%	2.30 ± 0.20
C5750X7R2E684KT5	X7R	250V	680,000	± 10%	2.30 ± 0.20
C5750X7R2E105KT5	X7R	250V	1,000,000	± 10%	2.30 ± 0.20
C5750X7R2J154KT5	X7R	630V	150,000	± 10%	1.60 ± 0.20
C5750X7R2J224KT5	X7R	630V	220,000	± 10%	2.30 ± 0.20

TDK

MULTILAYER CERAMIC CHIP CAPACITORS

C Series
Low ESL Flipped Type

Type: C0510 [EIA CC0204]
C0816 [EIA CC0306]
C1220 [EIA CC0508]
C1632 [EIA CC0612]

Issue date: October 2010

TDK MLCC
US Catalog

Version A10

REMINDERS

Please read before using this product

SAFETY REMINDERS

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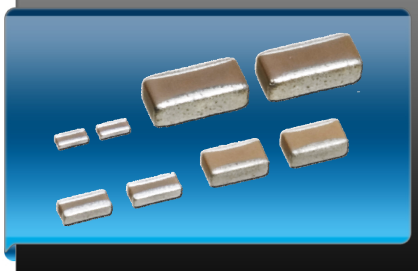


C Series

Low ESL Flipped Type

Type: C0510, C0816, C1220, C1632

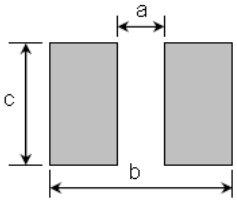
Features

- Positioning the electrodes along the length of the chip device, reduces ESR and ESL components over conventional products.
- Provides high frequency noise suppression effect because the resonating frequency is high.
- Flipped geometry provides low inductance (less than 400 pH).
- Provides stabilization of power line voltage.
- Suitable for IC decoupling application.

Applications

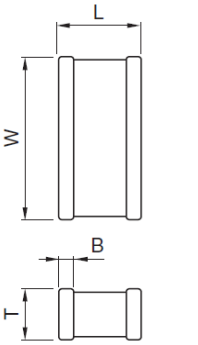
- Decoupling CPU power line
- Bias line in CPU
- High speed digital IC/decoupling
- PC, cell phones, camcorders, etc.

PC Board Pattern



Case Size	Dimensions (mm) a	b	c
C0510	0.2	0.6	1.0
C0816	0.3	1.0	1.6
C1220	0.5	1.6	2.0
C1632	0.75	2.2	3.2

Shape & Dimensions



Dimensions in mm

L	Body Length
W	Body Width
T	Body Height
B	Terminal Width

Part Number Construction

C 1632 X5R 0J 106 M T XXXX

Series Name

Dimensions L x W (mm)

Case Code	Length	Width
C0510	0.52 ± 0.05	1.00 ± 0.05
C0816 (C < 1µF)	0.80 ± 0.10	1.60 ± 0.10
C0816 (C ≥ 1µF)	0.80 ± 0.15	1.60 ± 0.20
C1220	1.25 ± 0.20	2.00 ± 0.20
C1632	1.60 ± 0.20	3.20 ± 0.20

Temperature Characteristic

Temperature Characteristics	Capacitance Change	Temperature Range
X5R	±15%	-55 to +85ºC
X6S	±22%	-55 to +105ºC
X7R	±15%	-55 to +125ºC
X7S	±22%	-55 to +125ºC

Rated Voltage (DC)

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

Internal Codes

Packaging Style

Packaging Code	Style
T	Tape and Reel

Capacitance Tolerance

Tolerance Code	Tolerance
K	± 10%
M	± 20%

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.

Capacitance Code	Capacitance
0R5	0.5pF
010	1pF
102	1,000pF (1nF)
105	1,000,000pF (1µF)

Capacitance Range Chart

C0510 [EIA CC0204]

Capacitance Range Chart

Temperature Characteristics: X6S (± 22%)
Rated Voltage: 4V (0G)

Capacitance (pF)	Cap Code	Tolerance	X6S 0G (4V)
10,000	103	M: ± 20%	
22,000	223		
47,000	473		
100,000	104		■
220,000	224		■
470,000	474		■
1,000,000	105		
2,200,000	225		

Standard Thickness

■ 0.30 ± 0.05 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X6S (± 22%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C0510X6S0G104M	X6S	4V	100,000	± 20%	0.30 ± 0.05
C0510X6S0G224M	X6S	4V	220,000	± 20%	0.30 ± 0.05
C0510X6S0G474M	X6S	4V	470,000	± 20%	0.30 ± 0.05

Capacitance Range Chart

C0816 [EIA CC0306]

Capacitance Range Chart

Temperature Characteristics: X7R, (± 15%), X7S (± 22%), X5R (± 15%), X6S (± 22%)
Rated Voltage: 16V (1C), 10V (1A), 6.3V (0J), 4V (0G)

Capacitance (pF)	Cap Code	Tolerance	X7R		X7S	X5R		X6S
			1C (16V)	0J (6.3V)	0G (4V)	1A (10V)	0J (6.3V)	0G (4V)
10,000	103	K: ± 10%						
22,000	223	M: ± 20%						
47,000	473							
100,000	104							
220,000	224							
470,000	474							
1,000,000	105							
2,200,000	225							

Standard Thickness
0.50 ± 0.10 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X7R, (± 15%), X7S (± 22%), X5R (± 15%), X6S (± 22%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C0816X7R1C103K	X7R	16V	10,000	± 10%	0.50 ± 0.10
C0816X7R1C223K	X7R	16V	22,000	± 10%	0.50 ± 0.10
C0816X7R1C473K	X7R	16V	47,000	± 10%	0.50 ± 0.10
C0816X7R1C104K	X7R	16V	100,000	± 10%	0.50 ± 0.10
C0816X7R0J224K	X7R	6.3V	220,000	± 10%	0.50 ± 0.10
C0816X7S0G474K	X7S	4V	470,000	± 10%	0.50 ± 0.10
C0816X7S0G105M	X7S	4V	1,000,000	± 20%	0.50 ± 0.10
C0816X7S0G225M	X7S	4V	2,200,000	± 20%	0.50 ± 0.10
C0816X6S0G474M	X6S	4V	470,000	± 20%	0.50 ± 0.10
C0816X5R1A224K	X5R	10V	220,000	± 10%	0.50 ± 0.10
C0816X5R1A474K	X5R	10V	470,000	± 10%	0.50 ± 0.10
C0816X5R0J474K	X5R	6.3V	470,000	± 10%	0.50 ± 0.10
C0816X5R0J105M	X5R	6.3V	1,000,000	± 20%	0.50 ± 0.10
C0816X5R0J225M	X5R	6.3V	2,200,000	± 20%	0.50 ± 0.10

Capacitance Range Chart

C1220 [EIA CC0508]

Capacitance Range Chart

Temperature Characteristics: X7R, (± 15%), X5R (± 15%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

Capacitance (pF)	Cap Code	Tolerance	X7R				X5R
			1H (50V)	1E (25V)	1C (16V)	0J (6.3V)	1A (10V)
10,000	103	K: ± 10%					
22,000	223	M: ± 20%					
47,000	473						
100,000	104						
220,000	224						
470,000	474						
1,000,000	105						

Standard Thickness

0.85 ± 0.15 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%), X5R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1220X7R1H103K	X7R	50V	10,000	± 10%	0.85 ± 0.15
C1220X7R1H223K	X7R	50V	22,000	± 10%	0.85 ± 0.15
C1220X7R1H473K	X7R	50V	47,000	± 10%	0.85 ± 0.15
C1220X7R1E104K	X7R	25V	100,000	± 10%	0.85 ± 0.15
C1220X7R1C224K	X7R	16V	220,000	± 10%	0.85 ± 0.15
C1220X7R0J474K	X7R	6.3V	470,000	± 10%	0.85 ± 0.15
C1220X7R0J105M	X7R	6.3V	1,000,000	± 20%	0.85 ± 0.15
C1220X5R1A474K	X5R	10V	470,000	± 10%	0.85 ± 0.15
C1220X5R1A105M	X5R	10V	1,000,000	± 20%	0.85 ± 0.15

Capacitance Range Chart

C1632 [EIA CC0612]

Capacitance Range Chart

Temperature Characteristics: X7R, (± 15%), X7S (± 22%), X5R (± 15%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3 (0J), 4V (0G)

Capacitance (pF)	Cap Code	Tolerance	X7R				X7S	X5R	
			1H (50V)	1E (25V)	1C (16V)	0J (6.3V)	0G (4V)	1A (10V)	0J (6.3V)
10,000	103	K: ± 10%							
22,000	223	M: ± 20%							
47,000	473								
100,000	104								
220,000	224								
470,000	474								
1,000,000	105								
2,200,000	225								
4,700,000	475								
10,000,000	106								

Standard Thickness

0.70 ± 0.10 mm 1.15 ± 0.15 mm 1.30 ± 0.15 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X7R, (± 15%), X7S (± 22%), X5R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
C1632X7R1H103K	X7R	50V	10,000	± 10%	0.70 ± 0.10
C1632X7R1H223K	X7R	50V	22,000	± 10%	0.70 ± 0.10
C1632X7R1H473K	X7R	50V	47,000	± 10%	0.70 ± 0.10
C1632X7R1H104K	X7R	50V	100,000	± 10%	0.70 ± 0.10
C1632X7R1H224K	X7R	50V	220,000	± 10%	1.15 ± 0.15
C1632X7R1E224K	X7R	25V	220,000	± 10%	0.70 ± 0.10
C1632X7R1E474K	X7R	25V	470,000	± 10%	1.15 ± 0.15
C1632X7R1C474K	X7R	16V	470,000	± 10%	0.70 ± 0.10
C1632X7R1C105K	X7R	16V	1,000,000	± 10%	1.15 ± 0.15
C1632X7R0J105M	X7R	6.3V	1,000,000	± 20%	0.70 ± 0.10
C1632X7R0J225M	X7R	6.3V	2,200,000	± 20%	1.15 ± 0.15
C1632X7S0G475M	X7S	4V	4,700,000	± 20%	1.30 ± 0.15
C1632X7S0G106M	X7S	4V	10,000,000	± 20%	1.30 ± 0.15
C1632X5R1A105M	X5R	10V	1,000,000	± 20%	0.70 ± 0.10
C1632X5R1A225M	X5R	10V	2,200,000	± 20%	1.15 ± 0.15
C1632X5R0J475M	X5R	6.3V	4,700,000	± 20%	1.30 ± 0.15
C1632X5R0J106M	X5R	6.3V	10,000,000	± 20%	1.30 ± 0.15

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TDK

MULTILAYER CERAMIC CHIP CAPACITORS

CER Series
Controlled ESR Capacitors

Type: CERB (C1608)
CERD (C2012)

Issue date: October 2010

TDK MLCC
US Catalog

Version A10

REMINDERS

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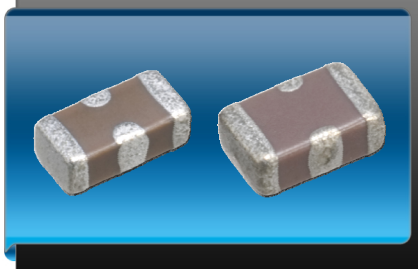


CER Series

Controlled ESR Capacitors

Type: CERB (C1608), CERD (C2012)

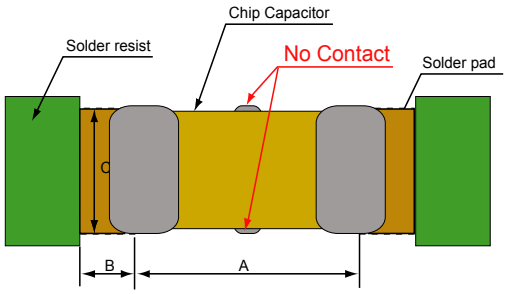
Features

- This is a ceramic chip capacitor with the additional function of controlling (assures design of) the ESR (Equivalent Series Resistance) value as desired.
- This function enables control of voltage change, which can occur between the power source and the CPU, by controlling the impedance of capacitors located around the CPU.
- This enables a reduction in the number of parts used and contributes to cost savings, set downsizing, and upgrading quality.
- The replacement of existing products is easy because the mounting method is the same as products with two terminals.

Applications

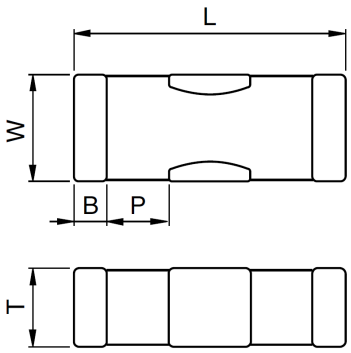
- PC server
- Power decoupling and smoothing
- Voltage regulator
- Output filters
- Plane termination
- USB damping circuit
- Tantalum capacitor replacement

PC Board Pattern



Symbol	CERB	CERD
A	1.10 mm	1.30 mm
B	0.50 mm	0.70 mm
C	0.80 mm	1.30 mm

Shape & Dimensions



Dimensions in mm

Symbol	CERB (C1608)	CERD (C2012)
L	1.60 ± 0.20	2.00 ± 0.20
W	0.80 ± 0.10	1.25 ± 0.20
T	0.80 ± 0.10	0.85 ± 0.15
B	0.10 min.	0.30 ± 0.20
P	0.20 min.	0.20 min.

Part Number Construction

CERD 2J X5R 0G 106 M T XXXX

Series Name

Case Code	Length	Width
CERB	1.60 ± 0.20	0.80 ± 0.10
CERD	2.00 ± 0.20	1.25 ± 0.20

ESR Code

Code	ESR	Code	ESR
1C	20mΩ	2C	200mΩ
1F	35mΩ	2J	500mΩ
1J	50mΩ	2M	650mΩ
2A	100mΩ	3U	1,200mΩ

Temperature Characteristic

Temperature Characteristics	Capacitance Change	Temperature Range
X5R	±15%	-55 to +85ºC

Rated Voltage (DC)

Voltage Code	Voltage(DC)
0G	4V

Internal Codes

Packaging Style

Packaging Code	Style
T	Tape and Reel

Capacitance Tolerance

Tolerance Code	Tolerance
M	± 20%

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.

Capacitance Code	Capacitance
105	1,000,000pF (1µF)
106	10,000,000pF (10µF)

Capacitance Range Table

CERB [EIA CC0603]

Class 2 (Temperature Stable)

Temperature Characteristics: X5R (± 15%)

TDK Part Number (Ordering Code)	ESR	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CERB2CX5R0G105M	200 mΩ ± 30%	X5R	4V	1,000,000	± 20%	0.80 ± 0.10
CERB2MX5R0G105M	650 mΩ ± 30%	X5R	4V	1,000,000	± 20%	0.80 ± 0.10
CERB3UX5R0G105M	1,200 mΩ ± 30%	X5R	4V	1,000,000	± 20%	0.80 ± 0.10

Capacitance Range Table

CERD [EIA CC0805]

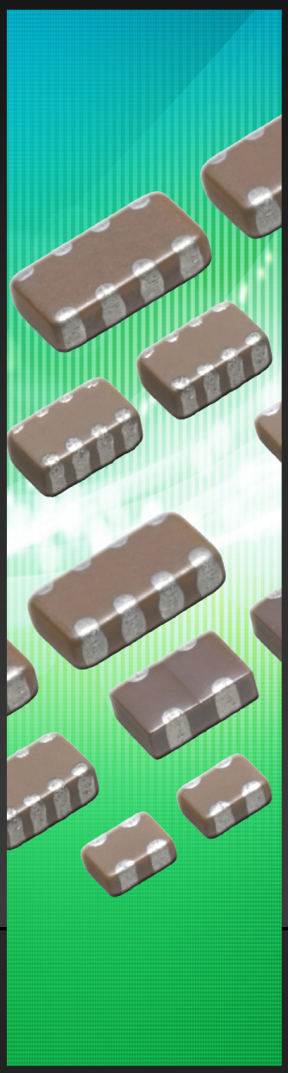
Class 2 (Temperature Stable)

Temperature Characteristics: X5R (± 15%)

TDK Part Number (Ordering Code)	ESR	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CERD1CX5R0G106M	20 mΩ ± 30%	X5R	4V	10,000,000	± 20%	0.85 ± 0.15
CERD1FX5R0G106M	35 mΩ ± 30%	X5R	4V	10,000,000	± 20%	0.85 ± 0.15
CERD1JX5R0G106M	50 mΩ ± 30%	X5R	4V	10,000,000	± 20%	0.85 ± 0.15
CERD2AX5R0G106M	100 mΩ ± 30%	X5R	4V	10,000,000	± 20%	0.85 ± 0.15
CERD2CX5R0G106M	200 mΩ ± 30%	X5R	4V	10,000,000	± 20%	0.85 ± 0.15
CERD2JX5R0G106M	500 mΩ ± 30%	X5R	4V	10,000,000	± 20%	0.85 ± 0.15

TDK

MULTILAYER CERAMIC CHIP CAPACITORS



CKC Series
Array Type Capacitors

Type:	CKCM25 CKCL22 CKCL44 CKCA43
Issue date:	October 2010

TDK MLCC
US Catalog

Version A10

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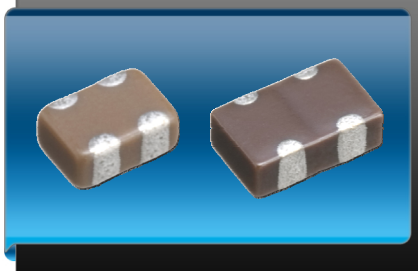


CKC Series

2 Elements Array Capacitors

Type: CKCM25 (C1310), CKCL22 (C2012)

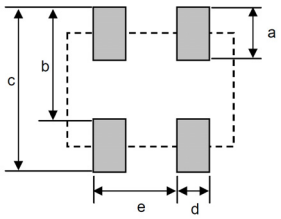
Features

- Multiple capacitors are fitted in a single product, contributing to reduced installation costs.
- The electrostatic capacity range and shape are designed to meet the demands of the cellular phone market.
- Reduced crosstalk (signal interference) between the terminals

Applications

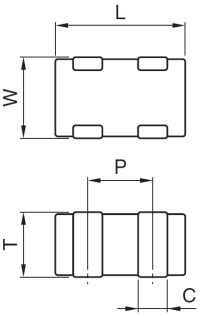
- Cellular telephone interface
- Interface cable circuit
- PC and peripherals
- CPU bus line
- High frequency circuit
- Noise bypass circuit

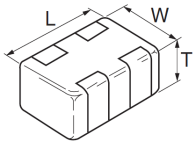
PC Board Pattern



Symbol	CKCM25	CKCL22
a	0.45 mm	0.60 mm
b	0.75 mm	1.00 mm
c	1.20 mm	1.60 mm
d	0.30 mm	0.50 mm
e	0.64 mm	1.00 mm

Shape & Dimensions





L	Body Length
W	Body Width
T	Body Height
C	Terminal Width
P	Terminal Spacing

Dimensions in mm

Symbol	CKCM25 (C1310)	CKCL22 (C2012)
L	1.37 ± 0.15	2.00 ± 0.15
W	1.00 ± 0.15	1.25 ± 0.15
T	0.9 max.	1.0 max
C	0.36 ± 0.10	0.45 ± 0.10
P	0.64 ± 0.10	1.00 ± 0.10

Part Number Construction

CKCM25 X7R 1E 103 M T XXXX

Series Name

Case Code	Length	Width
CKCM25	1.37 ± 0.15	1.00 ± 0.15
CKCL22	2.00 ± 0.15	1.25 ± 0.15

Temperature Characteristic

Temperature Characteristics	Capacitance Change	Temperature Range
C0G	0±30 ppm/ºC	-55 to +125ºC
X5R	±15%	-55 to +85ºC
X7R	±15%	-55 to +125ºC

Rated Voltage (DC)

Voltage Code	Voltage(DC)
0J	6.3V
1A	10V
1C	16V
1E	25V
1H	50V

Internal Codes

Packaging Style

Packaging Code	Style
T	Tape and Reel

Capacitance Tolerance

Tolerance Code	Tolerance
F	± 1%
K	± 10%
M	± 20%

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.

Capacitance Code	Capacitance
0R5	0.5pF
010	1pF
102	1,000pF (1nF)
105	1,000,000pF (1µF)

Capacitance Range Chart

CKCM25 [EIA CC0504]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30 ppm/ºC), X7R, (± 15%), X5R (± 15%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

Capacitance (pF)	Cap Code	Tolerance	C0G	X7R		X5R		
			1H (50V)	1H (50V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)
10	100	F: ± 1%						
15	150	K: ± 10%						
22	220							
33	330							
47	470							
68	680							
100	101							
1,000	102							
2,200	222	M: ± 20%						
4,700	472							
10,000	103							
22,000	223							
47,000	473							
100,000	104							
220,000	224							
470,000	474							
1,000,000	105							

Standard Thickness
0.66 mm maximum
0.90 mm maximum

Capacitance Range Table

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CKCM25C0G1H100F	C0G	50V	10	± 1%	0.66 mm Max.
CKCM25C0G1H150K	C0G	50V	15	± 10%	0.66 mm Max.
CKCM25C0G1H220K	C0G	50V	22	± 10%	0.66 mm Max.
CKCM25C0G1H330K	C0G	50V	33	± 10%	0.66 mm Max.
CKCM25C0G1H470K	C0G	50V	47	± 10%	0.66 mm Max.
CKCM25C0G1H680K	C0G	50V	68	± 10%	0.66 mm Max.
CKCM25C0G1H101K	C0G	50V	100	± 10%	0.66 mm Max.

Class 2 (Temperature Stable)

Temperature Characteristics: X7R, (± 15%), X5R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CKCM25X7R1H102M	X7R	50V	1,000	± 20%	0.66 mm Max.
CKCM25X7R1H222M	X7R	50V	2,200	± 20%	0.66 mm Max.
CKCM25X7R1H472M	X7R	50V	4,700	± 20%	0.66 mm Max.
CKCM25X7R1E103M	X7R	25V	10,000	± 20%	0.66 mm Max.
CKCM25X5R1C223M	X5R	16V	22,000	± 20%	0.66 mm Max.
CKCM25X5R1A473M	X5R	10V	47,000	± 20%	0.66 mm Max.
CKCM25X5R0J104M	X5R	6.3V	100,000	± 20%	0.66 mm Max.
CKCM25X5R0J224M	X5R	6.3V	220,000	± 20%	0.66 mm Max.
CKCM25X5R0J474M	X5R	6.3V	470,000	± 20%	0.90 mm Max.
CKCM25X5R0J105M	X5R	6.3V	1,000,000	± 20%	0.90 mm Max.

Capacitance Range Chart

CKCL22 [EIA CC0805]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30 ppm/ºC), X7R, (± 15%), X5R (± 15%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

Capacitance (pF)	Cap Code	Tolerance	C0G	X7R		X5R		
			1H (50V)	1H (50V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)
10	100	F: ± 1%						
15	150	K: ± 10%						
22	220							
33	330							
47	470							
68	680							
100	101							
150	151							
220	221							
330	331							
470	471							
1,000	102	M: ± 20%						
2,200	222							
4,700	472							
10,000	103							
22,000	223							
47,000	473							
100,000	104							
220,000	224							
470,000	474							
1,000,000	105							
2,200,000	225							

Standard Thickness
0.85 ± 0.15 mm

Capacitance Range Table

CKCL22 [EIA CC0805]

Class 1 (Temperature Compensating)

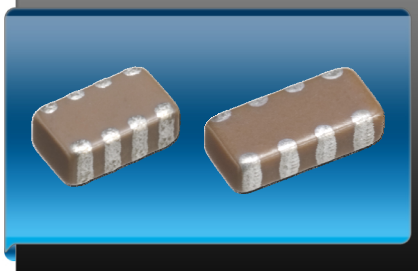
Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CKCL22C0G1H100F	C0G	50V	10	± 1%	0.85 ± 0.15
CKCL22C0G1H150K	C0G	50V	15	± 10%	0.85 ± 0.15
CKCL22C0G1H220K	C0G	50V	22	± 10%	0.85 ± 0.15
CKCL22C0G1H330K	C0G	50V	33	± 10%	0.85 ± 0.15
CKCL22C0G1H470K	C0G	50V	47	± 10%	0.85 ± 0.15
CKCL22C0G1H680K	C0G	50V	68	± 10%	0.85 ± 0.15
CKCL22C0G1H101K	C0G	50V	100	± 10%	0.85 ± 0.15
CKCL22C0G1H151K	C0G	50V	150	± 10%	0.85 ± 0.15
CKCL22C0G1H221K	C0G	50V	220	± 10%	0.85 ± 0.15
CKCL22C0G1H331K	C0G	50V	330	± 10%	0.85 ± 0.15
CKCL22C0G1H471K	C0G	50V	470	± 10%	0.85 ± 0.15

Class 2 (Temperature Stable)

Temperature Characteristics: X7R, (± 15%), X5R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CKCL22X7R1H102M	X7R	50V	1,000	± 20%	0.85 ± 0.15
CKCL22X7R1H222M	X7R	50V	2,200	± 20%	0.85 ± 0.15
CKCL22X7R1H472M	X7R	50V	4,700	± 20%	0.85 ± 0.15
CKCL22X7R1H103M	X7R	50V	10,000	± 20%	0.85 ± 0.15
CKCL22X7R1H223M	X7R	50V	22,000	± 20%	0.85 ± 0.15
CKCL22X7R1H473M	X7R	50V	47,000	± 20%	0.85 ± 0.15
CKCL22X7R1E104M	X7R	25V	100,000	± 20%	0.85 ± 0.15
CKCL22X5R1C224M	X5R	16V	220,000	± 20%	0.85 ± 0.15
CKCL22X5R1A474M	X5R	10V	470,000	± 20%	0.85 ± 0.15
CKCL22X5R0J105M	X5R	6.3V	1,000,000	± 20%	0.85 ± 0.15
CKCL22X5R0J225M	X5R	6.3V	2,200,000	± 20%	0.85 ± 0.15



CKC Series

4 Elements Array Capacitors

Type: CKCL44 (C2012), CKCA43 (C3216)

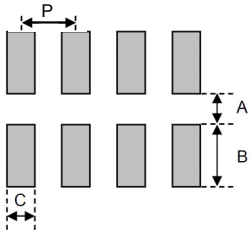
Features

- Multiple capacitors are fitted in a single product, contributing to reduced installation costs.
- The electrostatic capacity range and shape are designed to meet the demands of the cellular phone market.
- Reduced crosstalk (signal interference) between the terminals.

Applications

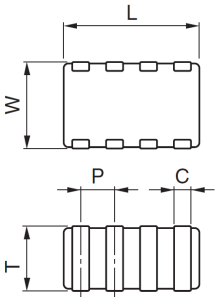
- Cellular telephone interface
- Interface cable circuit
- PC and peripherals
- CPU bus line
- High frequency circuit
- Noise bypass circuit

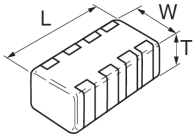
PC Board Pattern



Symbol	CKCL44	CKCA43
A	0.55 mm	0.6~0.7 mm
B	0.60 mm	0.8~1.0 mm
C	0.25 mm	0.30 mm
P	0.50 mm	0.80 mm

Shape & Dimensions





L	Body Length
W	Body Width
T	Body Height
C	Terminal Width
P	Terminal Spacing

Dimensions in mm

Symbol	CKCL44 (C2012)	CKCA43 (C3216)
L	2.00 ± 0.15	3.20 ± 0.20
W	1.25 ± 0.15	1.60 ± 0.20
T	1.00 max.	1.10 max.
C	0.25 ± 0.10	0.40 ± 0.20
P	0.50 ± 0.10	0.80 ± 0.20

Part Number Construction

CKCL44 X7R 1E 103 M T XXXX

Series Name

Case Code	Length	Width
CKCL44	2.00 ± 0.15	1.25 ± 0.15
CKCA43	3.20 ± 0.20	1.60 ± 0.20

Temperature Characteristic

Temperature Characteristics	Capacitance Change	Temperature Range
C0G	0±30 ppm/ºC	-55 to +125ºC
X5R	±15%	-55 to +85ºC
X7R	±15%	-55 to +125ºC

Rated Voltage (DC)

Voltage Code	Voltage(DC)
0J	6.3V
1A	10V
1C	16V
1E	25V
1H	50V

Internal Codes

Packaging Style

Packaging Code	Style
T	Tape and Reel

Capacitance Tolerance

Tolerance Code	Tolerance
F	± 1%
K	± 10%
M	± 20%

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.

Capacitance Code	Capacitance
0R5	0.5pF
010	1pF
102	1,000pF (1nF)
105	1,000,000pF (1µF)

Capacitance Range Chart

CKCL44 [EIA CC0805]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30 ppm/ºC), X7R, (± 15%), X5R (± 15%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

Capacitance (pF)	Cap Code	Tolerance	C0G	X7R			X5R	
			1H (50V)	1H (50V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)
10	100	F: ± 1%						
15	150	K: ± 10%						
22	220							
33	330							
47	470							
68	680							
100	101							
150	151							
220	221	M: ± 20%						
470	471							
1,000	102							
2,200	222							
4,700	472							
10,000	103							
22,000	223							
47,000	473							
100,000	104							

Standard Thickness
0.85 ± 0.15 mm

Capacitance Range Table

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CKCL44C0G1H100F	C0G	50V	10	± 1%	0.85 ± 0.15
CKCL44C0G1H150K	C0G	50V	15	± 10%	0.85 ± 0.15
CKCL44C0G1H220K	C0G	50V	22	± 10%	0.85 ± 0.15
CKCL44C0G1H330K	C0G	50V	33	± 10%	0.85 ± 0.15
CKCL44C0G1H470K	C0G	50V	47	± 10%	0.85 ± 0.15
CKCL44C0G1H680K	C0G	50V	68	± 10%	0.85 ± 0.15
CKCL44C0G1H101K	C0G	50V	100	± 10%	0.85 ± 0.15
CKCL44C0G1H151K	C0G	50V	150	± 10%	0.85 ± 0.15

Class 2 (Temperature Stable)

Temperature Characteristics: X7R, (± 15%), X5R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CKCL44X7R1H221M	X7R	50V	220	± 20%	0.85 ± 0.15
CKCL44X7R1H471M	X7R	50V	470	± 20%	0.85 ± 0.15
CKCL44X7R1H102M	X7R	50V	1,000	± 20%	0.85 ± 0.15
CKCL44X7R1H222M	X7R	50V	2,200	± 20%	0.85 ± 0.15
CKCL44X7R1H472M	X7R	50V	4,700	± 20%	0.85 ± 0.15
CKCL44X7R1E103M	X7R	25V	10,000	± 20%	0.85 ± 0.15
CKCL44X7R1C223M	X7R	16V	22,000	± 20%	0.85 ± 0.15
CKCL44X5R1A473M	X5R	10V	47,000	± 20%	0.85 ± 0.15
CKCL44X5R0J104M	X5R	6.3V	100,000	± 20%	0.85 ± 0.15

Capacitance Range Chart

CKCA43 [EIA CC1206]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30 ppm/ºC), X7R, (± 15%), X5R (± 15%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

Capacitance (pF)	Cap Code	Tolerance	C0G	X7R			X5R	
			1H (50V)	1H (50V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)
10	100	F: ± 1%						
15	150	K: ± 10%						
22	220							
33	330							
47	470							
68	680							
100	101							
150	151							
220	221							
330	331							
470	471	K: ± 10%						
680	681	M: ± 20%						
1,000	102							
2,200	222	M: ± 20%						
4,700	472							
10,000	103							
22,000	223							
47,000	473							
100,000	104							
220,000	224							
470,000	474							
1,000,000	105							

Standard Thickness
1.00 ± 0.10 mm

Capacitance Range Table

CKCA43 [EIA CC1206]

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CKCA43C0G1H100F	C0G	50V	10	± 1%	1.00 ± 0.10
CKCA43C0G1H150K	C0G	50V	15	± 10%	1.00 ± 0.10
CKCA43C0G1H220K	C0G	50V	22	± 10%	1.00 ± 0.10
CKCA43C0G1H330K	C0G	50V	33	± 10%	1.00 ± 0.10
CKCA43C0G1H470K	C0G	50V	47	± 10%	1.00 ± 0.10
CKCA43C0G1H680K	C0G	50V	68	± 10%	1.00 ± 0.10
CKCA43C0G1H101K	C0G	50V	100	± 10%	1.00 ± 0.10
CKCA43C0G1H151K	C0G	50V	150	± 10%	1.00 ± 0.10
CKCA43C0G1H221K	C0G	50V	220	± 10%	1.00 ± 0.10
CKCA43C0G1H331K	C0G	50V	330	± 10%	1.00 ± 0.10
CKCA43C0G1H471K	C0G	50V	470	± 10%	1.00 ± 0.10
CKCA43C0G1H681K	C0G	50V	680	± 10%	1.00 ± 0.10
CKCA43C0G1H102K	C0G	50V	1,000	± 10%	1.00 ± 0.10

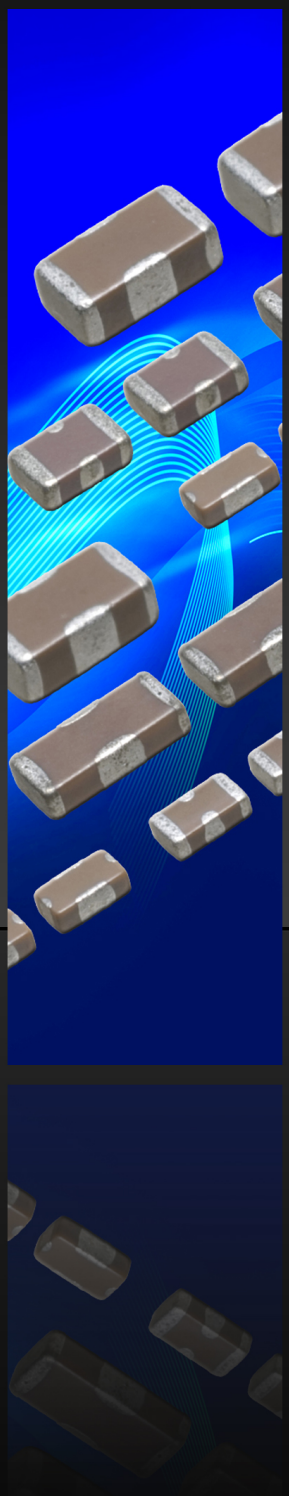
Class 2 (Temperature Stable)

Temperature Characteristics: X7R, (± 15%), X5R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CKCA43X7R1H471M	X7R	50V	470	± 20%	1.00 ± 0.10
CKCA43X7R1H102M	X7R	50V	1,000	± 20%	1.00 ± 0.10
CKCA43X7R1H222M	X7R	50V	2,200	± 20%	1.00 ± 0.10
CKCA43X7R1H472M	X7R	50V	4,700	± 20%	1.00 ± 0.10
CKCA43X7R1H103M	X7R	50V	10,000	± 20%	1.00 ± 0.10
CKCA43X7R1H223M	X7R	50V	22,000	± 20%	1.00 ± 0.10
CKCA43X7R1E473M	X7R	25V	47,000	± 20%	1.00 ± 0.10
CKCA43X7R1C104M	X7R	16V	100,000	± 20%	1.00 ± 0.10
CKCA43X7R1C224M	X7R	16V	220,000	± 20%	1.00 ± 0.10
CKCA43X5R1A474M	X5R	10V	470,000	± 20%	1.00 ± 0.10
CKCA43X5R0J105M	X5R	6.3V	1,000,000	± 20%	1.00 ± 0.10

TDK

MULTILAYER CERAMIC CHIP CAPACITORS



CKD Series
Low ESL Feed Through Capacitors

Type:	CKD110JB CKD310JB CKD510JB CKD610JB CKD61BJB
Issue date:	October 2010

TDK MLCC
US Catalog

Version A10

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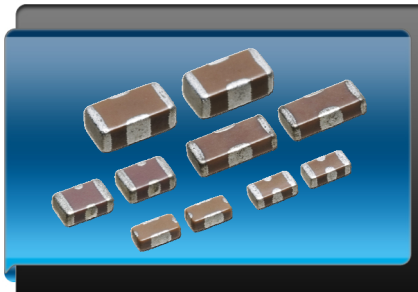


CKD Series

Low ESL Feed Through Capacitors

Type: CKD610JB (C1608), CKD510JB (C2012), CKD110JB (C3212), CKD310JB (C3216), CKD61BJB (C1608)

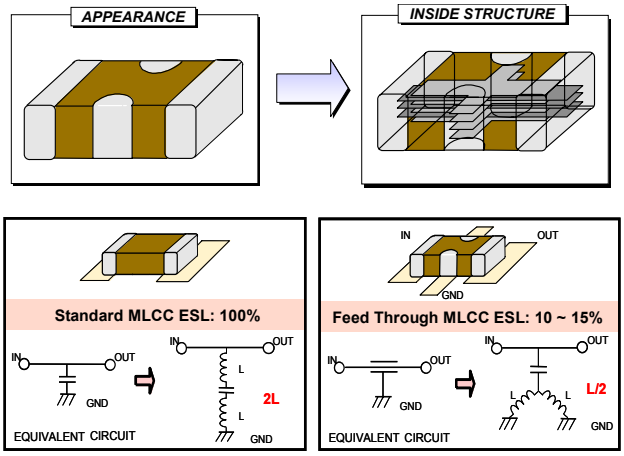
Features

- These small low-cost filters are used for meeting EMC requirements
- Can be used at higher frequencies due to low parasitic inductance
- Optimized for use as a noise bypass capacitor for signal and power source circuits

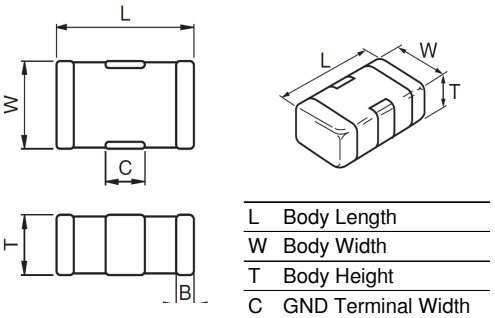
Applications

- Decoupling CPU power line
- High speed digital IC/decoupling
- High impedance/high current circuits
- DC to DC converter input/output smoothing
- Power supply

Structure



Shape & Dimensions



Dimensions in mm

L	Body Length
W	Body Width
T	Body Height
C	GND Terminal Width
B	Terminal Width

Series Name	L	W	Tmax	C	Bmin.
CKD610JB	1.60	0.80	0.90	0.40	0.10
CKD510JB	2.00	1.25	1.00	0.40	0.20
CKD110JB	3.20	1.25	1.00	0.95	0.20
CKD310JB	3.20	1.60	1.60	0.95	0.20
CKD61BJB	1.60	0.80	0.70	0.80	0.05

Part Number Construction

CKD510JB 0J 226 S T XXXX

Series Name

Case Code	Length	Width
CKD610JB	1.60 ± 0.10	0.80 ± 0.10
CKD510JB	2.00 ± 0.20	1.25 ± 0.20
CKD110JB	3.20 ± 0.20	1.25 ± 0.20
CKD310JB	3.20 ± 0.20	1.60 ± 0.20
CKD61BJB	1.60 ± 0.10	0.80 ± 0.10

Rated Voltage (DC)

Voltage Code	Voltage(DC)
0J	6.3V
1A	10V
1C	16V
1E	25V
1H	50V

Internal Codes

Packaging Style

Packaging Code	Style
T	Tape and Reel

Capacitance Tolerance

Tolerance Code	Tolerance
S	+50/-20%

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.

Capacitance Code	Capacitance
0R5	0.5pF
010	1pF
102	1,000pF (1nF)
105	1,000,000pF (1μF)

Capacitance Range Chart

CKD610JB [EIA CC0603]

Capacitance Range Chart

Rated Voltage: 6.3V (0J)

Capacitance (pF)	Cap Code	Tolerance	0J (6.3V)
470,000	474	S: +50/-20%	
1,000,000	105		
2,200,000	225		
4,700,000	475		
10,000,000	106		

Standard Thickness

0.80 ± 0.10 mm

Capacitance Range Table

TDK Part Number (Ordering Code)	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)	Rated Current (Idc) max.	DC Resistance max.
CKD610JB0J105S	6.3V	1,000,000	+50/-20%	0.80 ± 0.10	2000 mA	12 mΩ
CKD610JB0J225S	6.3V	2,200,000	+50/-20%	0.80 ± 0.10	2000 mA	12 mΩ
CKD610JB0J475S	6.3V	4,700,000	+50/-20%	0.80 ± 0.10	2000 mA	12 mΩ

Capacitance Range Chart

CKD510JB [EIA CC0805]

Capacitance Range Chart

Rated Voltage: 50V (1H), 25V (1E), 16V (1C), 10V (1A), 6.3V (0J)

Capacitance (pF)	Cap Code	Tolerance	1H (50V)	1E (25V)	1C (16V)	1A (10V)	0J (6.3V)
22	220	S: +50/-20%					
47	470						
100	101						
220	221						
470	471						
1,000	102						
2,200	222						
4,700	472						
10,000	103						
22,000	223						
47,000	473						
100,000	104						
470,000	474						
1,000,000	105						
2,200,000	225						
4,700,000	475						
10,000,000	106						
22,000,000	226						

Standard Thickness

0.85 ± 0.15 mm

Capacitance Range Table

TDK Part Number (Ordering Code)	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)	Rated Current (Idc) max.	DC Resistance max.
CKD510JB1H220S	50V	22	+50/-20%	0.85 ± 0.15	400 mA	500 mΩ
CKD510JB1H470S	50V	47	+50/-20%	0.85 ± 0.15	400 mA	500 mΩ
CKD510JB1H101S	50V	100	+50/-20%	0.85 ± 0.15	400 mA	500 mΩ
CKD510JB1H221S	50V	220	+50/-20%	0.85 ± 0.15	400 mA	500 mΩ
CKD510JB1H471S	50V	470	+50/-20%	0.85 ± 0.15	400 mA	500 mΩ
CKD510JB1H102S	50V	1,000	+50/-20%	0.85 ± 0.15	400 mA	500 mΩ
CKD510JB1H222S	50V	2,200	+50/-20%	0.85 ± 0.15	400 mA	500 mΩ
CKD510JB1H472S	50V	4,700	+50/-20%	0.85 ± 0.15	400 mA	500 mΩ
CKD510JB1E103S	25V	10,000	+50/-20%	0.85 ± 0.15	1000 mA	80 mΩ
CKD510JB1E223S	25V	22,000	+50/-20%	0.85 ± 0.15	1000 mA	80 mΩ
CKD510JB1E473S	25V	47,000	+50/-20%	0.85 ± 0.15	1000 mA	80 mΩ
CKD510JB1E104S	25V	100,000	+50/-20%	0.85 ± 0.15	1000 mA	80 mΩ
CKD510JB1C474S	16V	470,000	+50/-20%	0.85 ± 0.15	2000 mA	30 mΩ
CKD510JB1A105S	10V	1,000,000	+50/-20%	0.85 ± 0.15	2000 mA	12 mΩ
CKD510JB1A225S	10V	2,200,000	+50/-20%	0.85 ± 0.15	2000 mA	12 mΩ
CKD510JB1A475S	10V	4,700,000	+50/-20%	0.85 ± 0.15	3000 mA	12 mΩ
CKD510JB0J106S	6.3V	10,000,000	+50/-20%	0.85 ± 0.15	4000 mA	5 mΩ
CKD510JB0J226S	6.3V	22,000,000	+50/-20%	0.85 ± 0.15	4000 mA	5 mΩ

Capacitance Range Chart

CKD110JB [EIA CC1205]

Capacitance Range Chart

Rated Voltage: 25V (1E)

Capacitance (pF)	Cap Code	Tolerance	1E (25V)
22	220	S: +50/-20%	
47	470		
100	101		
220	221		
470	471		
1,000	102		
2,200	222		
4,700	472		
10,000	103		
22,000	223		
47,000	473		
100,000	104		

Standard Thickness

0.85 ± 0.15 mm

Capacitance Range Table

TDK Part Number (Ordering Code)	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)	Rated Current (Idc) max.	DC Resistance max.
CKD110JB1E220S	25V	22	+50/-20%	0.85 ± 0.15	200 mA	600 mΩ
CKD110JB1E470S	25V	47	+50/-20%	0.85 ± 0.15	200 mA	600 mΩ
CKD110JB1E101S	25V	100	+50/-20%	0.85 ± 0.15	200 mA	600 mΩ
CKD110JB1E221S	25V	220	+50/-20%	0.85 ± 0.15	200 mA	600 mΩ
CKD110JB1E471S	25V	470	+50/-20%	0.85 ± 0.15	200 mA	600 mΩ
CKD110JB1E102S	25V	1,000	+50/-20%	0.85 ± 0.15	200 mA	600 mΩ
CKD110JB1E222S	25V	2,200	+50/-20%	0.85 ± 0.15	200 mA	600 mΩ
CKD110JB1E472S	25V	4,700	+50/-20%	0.85 ± 0.15	200 mA	600 mΩ
CKD110JB1E103S	25V	10,000	+50/-20%	0.85 ± 0.15	500 mA	300 mΩ
CKD110JB1E223S	25V	22,000	+50/-20%	0.85 ± 0.15	500 mA	300 mΩ
CKD110JB1E473S	25V	47,000	+50/-20%	0.85 ± 0.15	500 mA	300 mΩ
CKD110JB1E104S	25V	100,000	+50/-20%	0.85 ± 0.15	500 mA	300 mΩ

Capacitance Range Chart

CKD310JB [EIA CC1206]

Capacitance Range Chart

Rated Voltage: 16V (1C), 6.3V (0J)

Capacitance (pF)	Cap Code	Tolerance	1C (16V)	0J (6.3V)
100,000	104	S: +50/-20%		
220,000	224			
470,000	474			
1,000,000	105			
22,000,000	226			

Standard Thickness

1.30 ± 0.30 mm

Capacitance Range Table

TDK Part Number (Ordering Code)	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)	Rated Current (Idc) max.	DC Resistance max.
CKD310JB1C104S	16V	100,000	+50/-20%	1.30 ± 0.30	2000 mA	40 mΩ
CKD310JB1C224S	16V	220,000	+50/-20%	1.30 ± 0.30	2000 mA	40 mΩ
CKD310JB1C474S	16V	470,000	+50/-20%	1.30 ± 0.30	2000 mA	40 mΩ
CKD310JB1C105S	16V	1,000,000	+50/-20%	1.30 ± 0.30	2000 mA	40 mΩ
CKD310JB0J226S	6.3V	22,000,000	+50/-20%	1.30 ± 0.30	4000 mA	12 mΩ

Capacitance Range Chart

CKD61BJB [EIA CC0603]

Capacitance Range Chart

Rated Voltage: 6.3V (0J)

Capacitance (pF)	Cap Code	Tolerance	0J (6.3V)
100,000	104	S: +50/-20%	
470,000	474		
1,000,000	105		
4,700,000	475		
10,000,000	106		

Standard Thickness

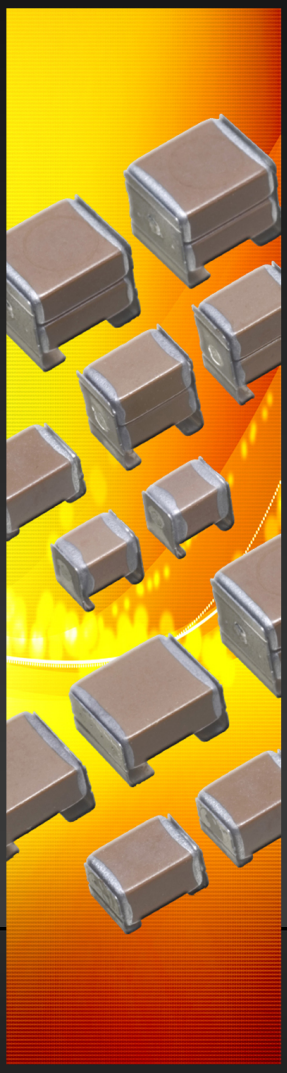
0.60 ± 0.10 mm

Capacitance Range Table

TDK Part Number (Ordering Code)	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)	Rated Current (Idc) max.	DC Resistance max.
CKD61BJB0J474S	6.3V	470,000	+50/-20%	0.60 ± 0.10	2000 mA	30 mΩ
CKD61BJB0J105S	6.3V	1,000,000	+50/-20%	0.60 ± 0.10	2000 mA	30 mΩ
CKD61BJB0J475S	6.3V	4,700,000	+50/-20%	0.60 ± 0.10	2000 mA	12 mΩ

TDK

MULTILAYER CERAMIC CHIP CAPACITORS



CKG Series
Mega Cap Type Capacitors

Type:	CKG32K CKG45K CKG57K CKG45N CKG57N
Issue date:	October 2010

TDK MLCC
US Catalog

Version A10

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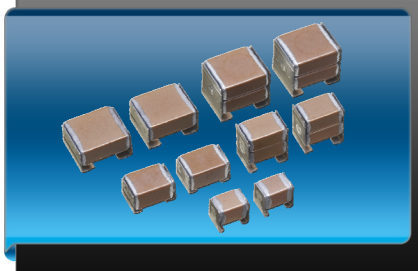


CKG Series

Mega Cap Type Capacitors

Type: CKG32K, CKG45K, CKG57K, CKG45N, CKG57N

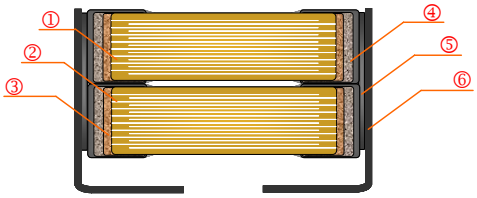
Features

- No polarity
- Twice the capacitance is obtainable on a single capacitor space
- Unique construction provides high reliability
- The metal caps absorb stress from thermal and mechanical shocks, ensuring excellent performance on aluminum circuit substrates
- Low ESR and ESL promise excellent characteristics for high frequency switching power supply

Applications

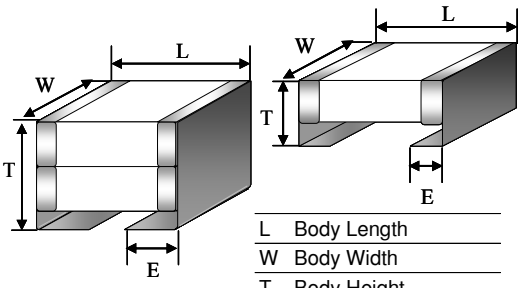
- Smoothing circuits
- Temperature variable applications
- Maintenance free power supplies
- DC to DC converters
- Automotive applications

Structure



No.	Name	Material
①	Dielectric	$BaTiO_3$
②	Electrode	Ni
③	Termination	Cu
④		Ni-Sn
⑤	Metal Cap Joint	High Temp Solder
⑥	Metal Cap	42 Alloy

Shape & Dimensions



Dimensions in mm

L	Body Length
W	Body Width
T	Body Height
E	Frame Edge Width

Series	L (max.)	W (max.)	T (max.)	E (max.)
CKG32K	3.90	2.90	3.45	0.95
CKG45K	5.50	4.00	3.00	1.40
CKG57K	6.50	5.50	3.50	1.90
CKG45N	5.50	4.00	5.50	1.40
CKG57N	6.50	5.50	5.50	1.90

Part Number Construction

CKG32K X7R 1E 106 M T XXXX

Series Name

Case Code	Length	Width
CKG32K	3.60 ± 0.30	2.60 ± 0.30
CKG45K	5.00 ± 0.50	3.50 ± 0.50
CKG57K	6.00 ± 0.50	5.00 ± 0.50
CKG45N	5.00 ± 0.50	3.50 ± 0.50
CKG57N	6.00 ± 0.50	5.00 ± 0.50

Temperature Characteristic

Temperature Characteristics	Capacitance Change	Temperature Range
X5R	±15%	-55 to +85ºC
X7R	±15%	-55 to +125ºC
X7S	±22%	-55 to +125ºC

Rated Voltage (DC)

Voltage Code	Voltage(DC)
1C	16V
1E	25V
1H	50V
2A	100V
2E	250V
2J	630V

Internal Codes

Packaging Style

Packaging Code	Style
T	Tape and Reel

Capacitance Tolerance

Tolerance Code	Tolerance
M	± 20%

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.

Capacitance Code	Capacitance
0R5	0.5pF
010	1pF
102	1,000pF (1nF)
105	1,000,000pF (1µF)

Capacitance Range Chart

CKG32K [Single Stack]

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X7S (± 22), X5R (± 15%)
Rated Voltage: 630V (2J), 250V (2E), 100V (2A), 50V (1H), 25V (1E), 16V (1C)

Capacitance (pF)	Cap Code	Tolerance	X7R					X7S
			2J (630V)	2E (250V)	2A (100V)	1H (50V)	1E (25V)	1H (50V)
47,000	473	M: ± 20%	■					
100,000	104			■				
220,000	224			■				
470,000	474				■			
1,000,000	105				■	■		
4,700,000	475						■	
10,000,000	106						■	■

Standard Thickness

■ 3.35 ± 0.10 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%), X7S (± 22)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CKG32KX7R2J473M	X7R	630V	47,000	± 20%	3.35 ± 0.10
CKG32KX7R2E104M	X7R	250V	100,000	± 20%	3.35 ± 0.10
CKG32KX7R2E224M	X7R	250V	220,000	± 20%	3.35 ± 0.10
CKG32KX7R2A474M	X7R	100V	470,000	± 20%	3.35 ± 0.10
CKG32KX7R2A105M	X7R	100V	1,000,000	± 20%	3.35 ± 0.10
CKG32KX7R1H105M	X7R	50V	1,000,000	± 20%	3.35 ± 0.10
CKG32KX7R1E475M	X7R	25V	4,700,000	± 20%	3.35 ± 0.10
CKG32KX7R1E106M	X7R	25V	10,000,000	± 20%	3.35 ± 0.10
CKG32KX7S1H106M	X7S	50V	10,000,000	± 20%	3.35 ± 0.10

Capacitance Range Chart

CKG45K [Single Stack]

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X7S (± 22)

Rated Voltage: 630V (2J), 250V (2E), 100V (2A), 50V (1H), 25V (1E), 16V (1C)

Capacitance (pF)	Cap Code	Tolerance	X7R						X7S
			2J (630V)	2E (250V)	2A (100V)	1H (50V)	1E (25V)	1C (16V)	2A (100V)
100,000	104	M: ± 20%							
220,000	224								
470,000	474								
1,000,000	105								
2,200,000	225								
3,300,000	335								
4,700,000	475								
10,000,000	106								
22,000,000	226								

Standard Thickness

2.90 ± 0.10 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%), X7S (± 22)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CKG45KX7R2J104M	X7R	630V	100,000	± 20%	2.90 ± 0.10
CKG45KX7R2E224M	X7R	250V	220,000	± 20%	2.90 ± 0.10
CKG45KX7R2E474M	X7R	250V	470,000	± 20%	2.90 ± 0.10
CKG45KX7R2A105M	X7R	100V	1,000,000	± 20%	2.90 ± 0.10
CKG45KX7R2A225M	X7R	100V	2,200,000	± 20%	2.90 ± 0.10
CKG45KX7R1H335M	X7R	50V	3,300,000	± 20%	2.90 ± 0.10
CKG45KX7R1H475M	X7R	50V	4,700,000	± 20%	2.90 ± 0.10
CKG45KX7R1E475M	X7R	25V	4,700,000	± 20%	2.90 ± 0.10
CKG45KX7S2A475M	X7S	100V	4,700,000	± 20%	2.90 ± 0.10
CKG45KX7R1C106M	X7R	16V	10,000,000	± 20%	2.90 ± 0.10
CKG45KX7R1C226M	X7R	16V	22,000,000	± 20%	2.90 ± 0.10

Capacitance Range Chart

CKG57K [Single Stack]

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X7S (± 22)

Rated Voltage: 630V (2J), 250V (2E), 100V (2A), 50V (1H), 25V (1E), 16V (1C)

Capacitance (pF)	Cap Code	Tolerance	X7R						X7S
			2J (630V)	2E (250V)	2A (100V)	1H (50V)	1E (25V)	1C (16V)	2A (100V)
220,000	224	M: ± 20%	■						
470,000	474			■					
1,000,000	105			■	■				
2,200,000	225				■				
3,300,000	335				■				
4,700,000	475				■	■			
10,000,000	106					■	■		■
22,000,000	226						■		
47,000,000	476							■	

Standard Thickness

■ 3.35 ± 0.15 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%), X7S (± 22)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CKG57KX7R2J224M	X7R	630V	220,000	± 20%	3.35 ± 0.15
CKG57KX7R2E474M	X7R	250V	470,000	± 20%	3.35 ± 0.15
CKG57KX7R2A105M	X7R	100V	1,000,000	± 20%	3.35 ± 0.15
CKG57KX7R2E105M	X7R	250V	1,000,000	± 20%	3.35 ± 0.15
CKG57KX7R2A225M	X7R	100V	2,200,000	± 20%	3.35 ± 0.15
CKG57KX7R2A335M	X7R	100V	3,300,000	± 20%	3.35 ± 0.15
CKG57KX7R2A475M	X7R	100V	4,700,000	± 20%	3.35 ± 0.15
CKG57KX7R1H475M	X7R	50V	4,700,000	± 20%	3.35 ± 0.15
CKG57KX7S2A106M	X7S	100V	10,000,000	± 20%	3.35 ± 0.15
CKG57KX7R1E106M	X7R	25V	10,000,000	± 20%	3.35 ± 0.15
CKG57KX7R1H106M	X7R	50V	10,000,000	± 20%	3.35 ± 0.15
CKG57KX7R1E226M	X7R	25V	22,000,000	± 20%	3.35 ± 0.15
CKG57KX7R1C476M	X7R	16V	47,000,000	± 20%	3.35 ± 0.15

Capacitance Range Chart

CKG45N [Double Stack]

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X7S (± 22), X5R (± 15%)
Rated Voltage: 630V (2J), 250V (2E), 100V (2A), 50V (1H), 25V (1E), 16V (1C)

Capacitance (pF)	Cap Code	Tolerance	X7R						X7S	X5R	
			2J (630V)	2E (250V)	2A (100V)	1H (50V)	1E (25V)	1C (16V)	2A (100V)	1H (50V)	1C (16V)
220,000	224	M: ± 20%	■								
470,000	474			■							
1,000,000	105			■							
2,200,000	225				■						
3,300,000	335					■					
4,700,000	475				■						
6,800,000	685					■					
10,000,000	106						■		■	■	
22,000,000	226							■			
47,000,000	476										■

Standard Thickness ■ 5.00 ± 0.50 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%), X7S (± 22), X5R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CKG45NX7R2J224M	X7R	630V	220,000	± 20%	5.00 ± 0.50
CKG45NX7R2E474M	X7R	250V	470,000	± 20%	5.00 ± 0.50
CKG45NX7R2E105M	X7R	250V	1,000,000	± 20%	5.00 ± 0.50
CKG45NX7R2A225M	X7R	100V	2,200,000	± 20%	5.00 ± 0.50
CKG45NX7R1H335M	X7R	50V	3,300,000	± 20%	5.00 ± 0.50
CKG45NX7R2A475M	X7R	100V	4,700,000	± 20%	5.00 ± 0.50
CKG45NX7R1H685M	X7R	50V	6,800,000	± 20%	5.00 ± 0.50
CKG45NX7S2A106M	X7S	100V	10,000,000	± 20%	5.00 ± 0.50
CKG45NX7R1E106M	X7R	25V	10,000,000	± 20%	5.00 ± 0.50
CKG45NX5R1H106M	X5R	50V	10,000,000	± 20%	5.00 ± 0.50
CKG45NX7R1C226M	X7R	16V	22,000,000	± 20%	5.00 ± 0.50
CKG45NX5R1C476M	X5R	16V	47,000,000	± 20%	5.00 ± 0.50

Capacitance Range Chart

CKG57N [Double Stack]

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X7S (± 22), X5R (± 15%)
Rated Voltage: 630V (2J), 250V (2E), 100V (2A), 50V (1H), 25V (1E), 16V (1C)

Capacitance (pF)	Cap Code	Tolerance	X7R						X7S	X5R		
			2J (630V)	2E (250V)	2A (100V)	1H (50V)	1E (25V)	1C (16V)	2A (100V)	1H (50V)	1E (25V)	1C (16V)
470,000	474	M: ± 20%	■									
1,000,000	105			■								
2,200,000	225			■	■							
4,700,000	475				■							
10,000,000	106				■	■						
22,000,000	226						■		■	■		
33,000,000	336							■				
47,000,000	476										■	
100,000,000	107											■

Thickness ■ 5.00 ± 0.50 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%), X7S (± 22), X5R (± 15%)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CKG57NX7R2J474M	X7R	630V	470,000	± 20%	5.00 ± 0.50
CKG57NX7R2E105M	X7R	250V	1,000,000	± 20%	5.00 ± 0.50
CKG57NX7R2A225M	X7R	100V	2,200,000	± 20%	5.00 ± 0.50
CKG57NX7R2E225M	X7R	250V	2,200,000	± 20%	5.00 ± 0.50
CKG57NX7R2A475M	X7R	100V	4,700,000	± 20%	5.00 ± 0.50
CKG57NX7R2A106M	X7R	100V	10,000,000	± 20%	5.00 ± 0.50
CKG57NX7R1H106M	X7R	50V	10,000,000	± 20%	5.00 ± 0.50
CKG57NX7S2A226M	X7S	100V	22,000,000	± 20%	5.00 ± 0.50
CKG57NX7R1E226M	X7R	25V	22,000,000	± 20%	5.00 ± 0.50
CKG57NX5R1H226M	X5R	50V	22,000,000	± 20%	5.00 ± 0.50
CKG57NX7R1C336M	X7R	16V	33,000,000	± 20%	5.00 ± 0.50
CKG57NX5R1E476M	X5R	25V	47,000,000	± 20%	5.00 ± 0.50
CKG57NX5R1C107M	X5R	16V	100,000,000	± 20%	5.00 ± 0.50

TDK

MULTILAYER CERAMIC CHIP CAPACITORS

CLL Series
Ultra Low Inductance Capacitors

Type: CLLC1A
CLLE1A

Issue date: October 2010

TDK MLCC
US Catalog

Version A10

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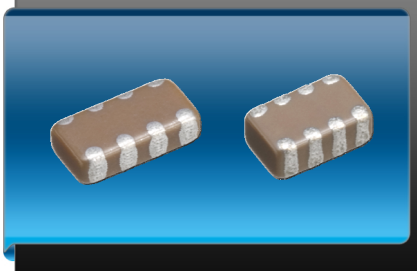


CLL Series

Ultra Low Inductance Capacitors

Type: CLLC1A (C1608), CLLE1A (C2012)

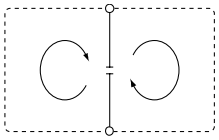
Features

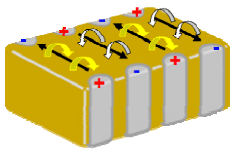
- Features a unique internal structure that cancels magnetic fields to reduce equivalent series inductance
- Eight side terminal electrodes in one capacitor

Applications

- Decoupling CPU power line
- High speed digital IC/decoupling
- GPU/CPU

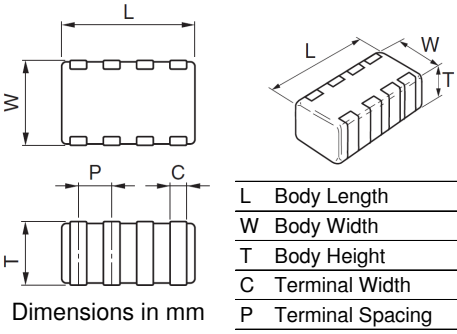
Structure





	ULI		FLIP	STD
CHIP SIZE	C1608	C2012	C1632	C2012
Cap.	1µF	1µF	1µF	1µF
W.V.	0G (4.0V)	0G (4.0V)	1A (10V)	1A (10V)
ESL	65pH	70pH	180pH	850pH

Shape & Dimensions



Dimensions in mm

L	Body Length
W	Body Width
T	Body Height
C	Terminal Width
P	Terminal Spacing

Symbol	CLLC1A (C1608)	CLLE1A (C2012)
L	1.60 ± 0.10	2.00 ± 0.15
W	0.80 ± 0.10	1.25 ± 0.15
T	0.55 max.	0.95 max.
C	0.25 ± 0.10	0.25 +0.15/-0.10
P	0.40 ± 0.10	0.50 ± 0.15

Part Number Construction

CLLC1A X7R 0J 105 M T XXXX

Series Name

Case Code	Length	Width
CLLC1A	1.60 ± 0.10	0.80 ± 0.10
CLLE1A	2.00 ± 0.15	1.25 ± 0.15

Temperature Characteristic

Temperature Characteristics	Capacitance Change	Temperature Range
X7R	±15%	-55 to +125ºC
X7S	±22%	-55 to +125ºC

Rated Voltage (DC)

Voltage Code	Voltage(DC)
0G	4V
0J	6.3V
1A	10V

Internal Codes

Packaging Style

Packaging Code	Style
T	Tape and Reel

Capacitance Tolerance

Tolerance Code	Tolerance
M	± 20%

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.

Capacitance Code	Capacitance
0R5	0.5pF
010	1pF
102	1,000pF (1nF)
105	1,000,000pF (1µF)

Capacitance Range Chart

CLLC1A [EIA CC0603]

Capacitance Range Chart

Temperature Characteristics: X7S (± 22)
Rated Voltage: 4V (0G)

Capacitance (pF)	Cap Code	Tolerance	X7S 0G (4V)
330,000	334	M: ± 20%	
470,000	474		
680,000	684		
1,000,000	105		

Standard Thickness
0.50 ± 0.05 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X7S (± 22)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CLLC1AX7S0G334M	X7S	4V	330,000	± 20%	0.50 ± 0.05
CLLC1AX7S0G474M	X7S	4V	470,000	± 20%	0.50 ± 0.05
CLLC1AX7S0G684M	X7S	4V	680,000	± 20%	0.50 ± 0.05
CLLC1AX7S0G105M	X7S	4V	1,000,000	± 20%	0.50 ± 0.05

Capacitance Range Chart

CLLE1A [EIA CC0805]

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X7S (± 22)
Rated Voltage: 10V (1A), 6.3V (0J), 4V (0G)

Capacitance (pF)	Cap Code	Tolerance	X7R		X7S
			1A (10V)	0J (6.3V)	0G (4V)
100,000	104	M: ± 20%			
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				
4,700,000	475				

Standard Thickness
0.50 ± 0.05 mm
0.85 ± 0.10 mm

Capacitance Range Table

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%), X7S (± 22)

TDK Part Number (Ordering Code)	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CLLE1AX7R1A104M	X7R	10V	100,000	± 20%	0.50 ± 0.05
CLLE1AX7R1A154M	X7R	10V	150,000	± 20%	0.50 ± 0.05
CLLE1AX7R1A224M	X7R	10V	220,000	± 20%	0.50 ± 0.05
CLLE1AX7R1A334M	X7R	10V	330,000	± 20%	0.50 ± 0.05
CLLE1AX7R0J474M	X7R	6.3V	470,000	± 20%	0.50 ± 0.05
CLLE1AX7R0J684M	X7R	6.3V	680,000	± 20%	0.50 ± 0.05
CLLE1AX7R0J105M	X7R	6.3V	1,000,000	± 20%	0.85 ± 0.10
CLLE1AX7R0J155M	X7R	6.3V	1,500,000	± 20%	0.85 ± 0.10
CLLE1AX7S0G105M	X7S	4V	1,000,000	± 20%	0.50 ± 0.05
CLLE1AX7S0G155M	X7S	4V	1,500,000	± 20%	0.50 ± 0.05
CLLE1AX7S0G225M/0.50	X7S	4V	2,200,000	± 20%	0.50 ± 0.05
CLLE1AX7S0G225M/0.85	X7S	4V	2,200,000	± 20%	0.85 ± 0.10
CLLE1AX7S0G475M	X7S	4V	4,700,000	± 20%	0.85 ± 0.10

TDK

MULTILAYER CERAMIC CHIP CAPACITORS

CGA Series
Automotive Grade Capacitors

Type: CGA2 [EIA CC0402]
CGA3 [EIA CC0603]
CGA4 [EIA CC0805]
CGA5 [EIA CC1206]
CGA6 [EIA CC1210]

Issue date: October 2010

TDK MLCC
US Catalog

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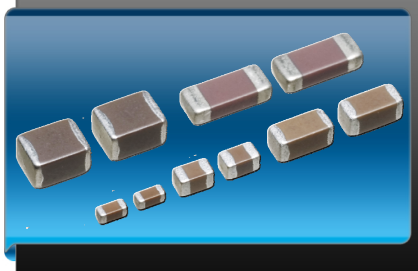


CGA Series

Automotive Grade Capacitors

Type: CGA2 (C1005), CGA3 (C1608), CGA4 (C2012), CGA5 (C3216), CGA6 (C3225)

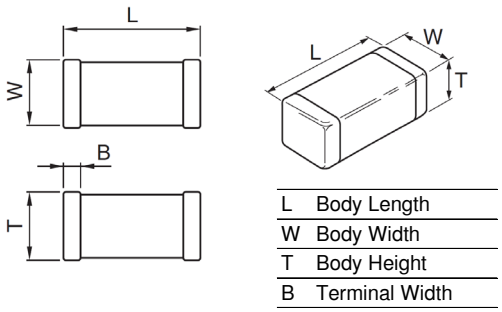
Features

- The CGA series consists of products that can be used for the power train, safety equipment, etc. of a vehicle
- Qualified to AEC Q200 test standard
- Parts are manufactured using tested and stable manufacturing processes and are subjected to increased inspections to guarantee a higher level of reliability
- A monolithic structure ensures superior mechanical strength and reliability
- Available in X8R temperature characteristic for up to 150ºC operating temperature
- High capacitance has been achieved through precision technologies that enable the use of multiple thinner ceramic dielectric layers
- High-accuracy automatic mounting is facilitated through the maintenance of very precise dimensional tolerances
- Low stray capacitance ensures high conformity with nominal values, thereby simplifying the circuit design process

Applications

- Automotive applications
- High reliability requirement applications
- Harsh environment requirement applications
- Smart meter
- Base stations
- Noise bypass in automotive

Shape & Dimensions



L	Body Length
W	Body Width
T	Body Height
B	Terminal Width

Dimensions in mm

Part Number Construction

CGA 5 L 2 X8R 1E 105 K T XXXX

Series Name

Dimensions L x W (mm)

Symbol	Length	Width
2	1.00 ± 0.05	0.50 ± 0.05
3	1.60 ± 0.10	0.80 ± 0.10
4	2.00 ± 0.20	1.25 ± 0.20
5	3.20 ± 0.20	1.60 ± 0.20
6	3.20 ± 0.40	2.50 ± 0.30

Thickness T (mm)

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

Voltage Condition for Life Test

Symbol	Thickness	Symbol	Thickness
1	1 x Rated Voltage	3	1.5 x Rated Voltage
2	2 x Rated Voltage	4	1.2 x Rated Voltage

Temperature Characteristic

Temperature Characteristics	Capacitance Change	Temperature Range
C0G	0±30 ppm/ºC	-55 to +125ºC
X7R	±15%	-55 to +125ºC
X8R	±15%	-55 to +150ºC

Internal Codes

Packaging Style

Packaging Code	Style
T	Tape and Reel

Capacitance Tolerance

Tolerance Code	Tolerance
C	± 0.25pF
D	± 0.50pF
J	± 5%
K	± 10%
M	± 20%

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.

Capacitance Code	Capacitance
0R5	0.5pF
010	1pF
102	1,000pF (1nF)
105	1,000,000pF (1µF)

Rated Voltage (DC)

Voltage Code	Voltage(DC)	Voltage Code	Voltage(DC)
1C	16V	2A	100V
1E	25V	2E	250V
1H	50V	2J	630V

• All specifications are subject to change without notice. Please read the precautions before using the product.

Capacitance Range Chart

CGA2 [EIA CC0402/JIS C1005]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC)
Rated Voltage: 50V (1H)

Capacitance (pF)	Cap Code	Tolerance	C0G 1H (50V)
1.0	010	C: ± 0.25pF	■
1.5	1R5		■
2.0	020		■
2.2	2R2		■
3.0	030		■
3.3	3R3		■
4.0	040		■
4.7	4R7		■
5.0	050		■
6.0	060	D: ± 0.50pF	■
6.8	6R8		■
7.0	070		■
8.0	080		■
9.0	090		■
10	100		■
12	120	J: ± 5%	■
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		■

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X8R (± 15%)
Rated Voltage: 50V (1H), 25V (1E), 16V (1C)

Capacitance (pF)	Cap Code	Tolerance	X7R 1H (50V)	X7R 1E (25V)	X7R 1C (16V)	X8R 1H (50V)	X8R 1E (25V)
150	151	K: ± 10%				■	
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			■			■
22,000	223			■			
47,000	473			■	■		
68,000	683				■		
100,000	104				■		

Standard Thickness
■ 0.50 ± 0.05 mm

• All specifications are subject to change without notice. Please read the precautions before using the product.

Capacitance Range Table

CGA2 [EIA CC0402/JIS C1005]

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Voltage Condition in Life Test	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CGA2B2C0G1H010C	2 x Rated Voltage	C0G	50V	1.0	± 0.25pF	0.50 ± 0.05
CGA2B2C0G1H1R5C	2 x Rated Voltage	C0G	50V	1.5	± 0.25pF	0.50 ± 0.05
CGA2B2C0G1H020C	2 x Rated Voltage	C0G	50V	2.0	± 0.25pF	0.50 ± 0.05
CGA2B2C0G1H2R2C	2 x Rated Voltage	C0G	50V	2.2	± 0.25pF	0.50 ± 0.05
CGA2B2C0G1H030C	2 x Rated Voltage	C0G	50V	3.0	± 0.25pF	0.50 ± 0.05
CGA2B2C0G1H3R3C	2 x Rated Voltage	C0G	50V	3.3	± 0.25pF	0.50 ± 0.05
CGA2B2C0G1H040C	2 x Rated Voltage	C0G	50V	4.0	± 0.25pF	0.50 ± 0.05
CGA2B2C0G1H4R7C	2 x Rated Voltage	C0G	50V	4.7	± 0.25pF	0.50 ± 0.05
CGA2B2C0G1H050C	2 x Rated Voltage	C0G	50V	5.0	± 0.25pF	0.50 ± 0.05
CGA2B2C0G1H060D	2 x Rated Voltage	C0G	50V	6.0	± 0.50pF	0.50 ± 0.05
CGA2B2C0G1H6R8D	2 x Rated Voltage	C0G	50V	6.8	± 0.50pF	0.50 ± 0.05
CGA2B2C0G1H070D	2 x Rated Voltage	C0G	50V	7.0	± 0.50pF	0.50 ± 0.05
CGA2B2C0G1H080D	2 x Rated Voltage	C0G	50V	8.0	± 0.50pF	0.50 ± 0.05
CGA2B2C0G1H090D	2 x Rated Voltage	C0G	50V	9.0	± 0.50pF	0.50 ± 0.05
CGA2B2C0G1H100D	2 x Rated Voltage	C0G	50V	10	± 0.50pF	0.50 ± 0.05
CGA2B2C0G1H120J	2 x Rated Voltage	C0G	50V	12	± 5%	0.50 ± 0.05
CGA2B2C0G1H150J	2 x Rated Voltage	C0G	50V	15	± 5%	0.50 ± 0.05
CGA2B2C0G1H180J	2 x Rated Voltage	C0G	50V	18	± 5%	0.50 ± 0.05
CGA2B2C0G1H220J	2 x Rated Voltage	C0G	50V	22	± 5%	0.50 ± 0.05
CGA2B2C0G1H270J	2 x Rated Voltage	C0G	50V	27	± 5%	0.50 ± 0.05
CGA2B2C0G1H330J	2 x Rated Voltage	C0G	50V	33	± 5%	0.50 ± 0.05
CGA2B2C0G1H390J	2 x Rated Voltage	C0G	50V	39	± 5%	0.50 ± 0.05
CGA2B2C0G1H470J	2 x Rated Voltage	C0G	50V	47	± 5%	0.50 ± 0.05
CGA2B2C0G1H560J	2 x Rated Voltage	C0G	50V	56	± 5%	0.50 ± 0.05
CGA2B2C0G1H680J	2 x Rated Voltage	C0G	50V	68	± 5%	0.50 ± 0.05
CGA2B2C0G1H820J	2 x Rated Voltage	C0G	50V	82	± 5%	0.50 ± 0.05
CGA2B2C0G1H101J	2 x Rated Voltage	C0G	50V	100	± 5%	0.50 ± 0.05
CGA2B2C0G1H121J	2 x Rated Voltage	C0G	50V	120	± 5%	0.50 ± 0.05
CGA2B2C0G1H151J	2 x Rated Voltage	C0G	50V	150	± 5%	0.50 ± 0.05
CGA2B2C0G1H181J	2 x Rated Voltage	C0G	50V	180	± 5%	0.50 ± 0.05
CGA2B2C0G1H221J	2 x Rated Voltage	C0G	50V	220	± 5%	0.50 ± 0.05
CGA2B2C0G1H271J	2 x Rated Voltage	C0G	50V	270	± 5%	0.50 ± 0.05
CGA2B2C0G1H331J	2 x Rated Voltage	C0G	50V	330	± 5%	0.50 ± 0.05
CGA2B2C0G1H391J	2 x Rated Voltage	C0G	50V	390	± 5%	0.50 ± 0.05
CGA2B2C0G1H471J	2 x Rated Voltage	C0G	50V	470	± 5%	0.50 ± 0.05

Capacitance Range Table

CGA2 [EIA CC0402/JIS C1005]

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%), X8R (± 15%)

TDK Part Number (Ordering Code)	Voltage Condition in Life Test	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CGA2B2X7R1H102K	2 x Rated Voltage	X7R	50V	1,000	± 10%	0.50 ± 0.05
CGA2B2X7R1H222K	2 x Rated Voltage	X7R	50V	2,200	± 10%	0.50 ± 0.05
CGA2B2X7R1H472K	2 x Rated Voltage	X7R	50V	4,700	± 10%	0.50 ± 0.05
CGA2B2X7R1E103K	2 x Rated Voltage	X7R	25V	10,000	± 10%	0.50 ± 0.05
CGA2B2X7R1E223K	2 x Rated Voltage	X7R	25V	22,000	± 10%	0.50 ± 0.05
CGA2B1X7R1E473K	1 x Rated Voltage	X7R	25V	47,000	± 10%	0.50 ± 0.05
CGA2B2X7R1C473K	2 x Rated Voltage	X7R	16V	47,000	± 10%	0.50 ± 0.05
CGA2B1X7R1C683K	1 x Rated Voltage	X7R	16V	68,000	± 10%	0.50 ± 0.05
CGA2B1X7R1C104K	1 x Rated Voltage	X7R	16V	100,000	± 10%	0.50 ± 0.05
CGA2B2X8R1E682K	2 x Rated Voltage	X8R	25V	6,800	± 10%	0.50 ± 0.05
CGA2B2X8R1E103K	2 x Rated Voltage	X8R	25V	10,000	± 10%	0.50 ± 0.05
CGA2B2X8R1H151K	2 x Rated Voltage	X8R	50V	150	± 10%	0.50 ± 0.05
CGA2B2X8R1H221K	2 x Rated Voltage	X8R	50V	220	± 10%	0.50 ± 0.05
CGA2B2X8R1H331K	2 x Rated Voltage	X8R	50V	330	± 10%	0.50 ± 0.05
CGA2B2X8R1H471K	2 x Rated Voltage	X8R	50V	470	± 10%	0.50 ± 0.05
CGA2B2X8R1H681K	2 x Rated Voltage	X8R	50V	680	± 10%	0.50 ± 0.05
CGA2B2X8R1H102K	2 x Rated Voltage	X8R	50V	1,000	± 10%	0.50 ± 0.05
CGA2B2X8R1H152K	2 x Rated Voltage	X8R	50V	1,500	± 10%	0.50 ± 0.05
CGA2B2X8R1H222K	2 x Rated Voltage	X8R	50V	2,200	± 10%	0.50 ± 0.05
CGA2B2X8R1H332K	2 x Rated Voltage	X8R	50V	3,300	± 10%	0.50 ± 0.05
CGA2B2X8R1H472K	2 x Rated Voltage	X8R	50V	4,700	± 10%	0.50 ± 0.05

Capacitance Range Chart

CGA3 [EIA CC0603/JIS C1608]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC)
Rated Voltage: 250V (2E), 100V (2A), 50V (1H)

Capacitance (pF)	Cap Code	Tolerance	C0G		
			2E (250V)	2A (100V)	1H (50V)
1	010	C: ± 0.25pF			■
2	1R5				■
2	020				■
2	2R2				■
3	030				■
3	3R3				■
4	040				■
5	4R7				■
5	050	D: ± 0.50pF			■
6	060				■
7	6R8				■
7	070				■
8	080				■
9	090				■
10	100				■
12	120	J: ± 5%			■
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			■	■
1,200	122			■	■
1,500	152				■
1,800	182				■
2,200	222				■
2,700	272				■
3,300	332				■

Standard Thickness

■ 0.80 ± 0.10 mm

Capacitance Range Chart

CGA3 [EIA CC0603/JIS C1608]

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X8R (± 15%)
Rated Voltage: 100V (2A), 50V (1H), 25V (1E), 16V (1C)

Capacitance (pF)	Cap Code	Tolerance	X7R				X8R		
			2A (100V)	1H (50V)	1E (25V)	1C (16V)	2A (100V)	1H (50V)	1E (25V)
1,000	102	K: ± 10%	■	■			■	■	
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					■			

Standard Thickness

■ 0.80 ± 0.10 mm

Capacitance Range Table

CGA3 [EIA CC0603/JIS C1608]

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Voltage Condition in Life Test	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CGA3E2C0G1H010C	2 x Rated Voltage	C0G	50V	1.0	± 0.25pF	0.80 ± 0.10
CGA3E2C0G1H1R5C	2 x Rated Voltage	C0G	50V	1.5	± 0.25pF	0.80 ± 0.10
CGA3E2C0G1H020C	2 x Rated Voltage	C0G	50V	2.0	± 0.25pF	0.80 ± 0.10
CGA3E2C0G1H2R2C	2 x Rated Voltage	C0G	50V	2.2	± 0.25pF	0.80 ± 0.10
CGA3E2C0G1H030C	2 x Rated Voltage	C0G	50V	3.0	± 0.25pF	0.80 ± 0.10
CGA3E2C0G1H3R3C	2 x Rated Voltage	C0G	50V	3.3	± 0.25pF	0.80 ± 0.10
CGA3E2C0G1H040C	2 x Rated Voltage	C0G	50V	4.0	± 0.25pF	0.80 ± 0.10
CGA3E2C0G1H4R7C	2 x Rated Voltage	C0G	50V	4.7	± 0.25pF	0.80 ± 0.10
CGA3E2C0G1H050C	2 x Rated Voltage	C0G	50V	5.0	± 0.25pF	0.80 ± 0.10
CGA3E2C0G1H060D	2 x Rated Voltage	C0G	50V	6.0	± 0.50pF	0.80 ± 0.10
CGA3E2C0G1H6R8D	2 x Rated Voltage	C0G	50V	6.8	± 0.50pF	0.80 ± 0.10
CGA3E2C0G1H070D	2 x Rated Voltage	C0G	50V	7.0	± 0.50pF	0.80 ± 0.10
CGA3E2C0G1H080D	2 x Rated Voltage	C0G	50V	8.0	± 0.50pF	0.80 ± 0.10
CGA3E2C0G1H090D	2 x Rated Voltage	C0G	50V	9.0	± 0.50pF	0.80 ± 0.10
CGA3E2C0G1H100D	2 x Rated Voltage	C0G	50V	10	± 0.50pF	0.80 ± 0.10
CGA3E2C0G1H120J	2 x Rated Voltage	C0G	50V	12	± 5%	0.80 ± 0.10
CGA3E2C0G1H150J	2 x Rated Voltage	C0G	50V	15	± 5%	0.80 ± 0.10
CGA3E2C0G1H180J	2 x Rated Voltage	C0G	50V	18	± 5%	0.80 ± 0.10
CGA3E2C0G1H220J	2 x Rated Voltage	C0G	50V	22	± 5%	0.80 ± 0.10
CGA3E2C0G1H270J	2 x Rated Voltage	C0G	50V	27	± 5%	0.80 ± 0.10
CGA3E2C0G1H330J	2 x Rated Voltage	C0G	50V	33	± 5%	0.80 ± 0.10
CGA3E2C0G1H390J	2 x Rated Voltage	C0G	50V	39	± 5%	0.80 ± 0.10
CGA3E2C0G1H470J	2 x Rated Voltage	C0G	50V	47	± 5%	0.80 ± 0.10
CGA3E2C0G1H560J	2 x Rated Voltage	C0G	50V	56	± 5%	0.80 ± 0.10
CGA3E2C0G1H680J	2 x Rated Voltage	C0G	50V	68	± 5%	0.80 ± 0.10
CGA3E2C0G1H820J	2 x Rated Voltage	C0G	50V	82	± 5%	0.80 ± 0.10
CGA3E2C0G1H101J	2 x Rated Voltage	C0G	50V	100	± 5%	0.80 ± 0.10
CGA3E2C0G1H121J	2 x Rated Voltage	C0G	50V	120	± 5%	0.80 ± 0.10
CGA3E2C0G1H151J	2 x Rated Voltage	C0G	50V	150	± 5%	0.80 ± 0.10
CGA3E2C0G1H181J	2 x Rated Voltage	C0G	50V	180	± 5%	0.80 ± 0.10
CGA3E2C0G1H221J	2 x Rated Voltage	C0G	50V	220	± 5%	0.80 ± 0.10
CGA3E2C0G1H271J	2 x Rated Voltage	C0G	50V	270	± 5%	0.80 ± 0.10
CGA3E2C0G1H331J	2 x Rated Voltage	C0G	50V	330	± 5%	0.80 ± 0.10
CGA3E2C0G1H391J	2 x Rated Voltage	C0G	50V	390	± 5%	0.80 ± 0.10
CGA3E2C0G1H471J	2 x Rated Voltage	C0G	50V	470	± 5%	0.80 ± 0.10
CGA3E2C0G1H561J	2 x Rated Voltage	C0G	50V	560	± 5%	0.80 ± 0.10
CGA3E2C0G1H681J	2 x Rated Voltage	C0G	50V	680	± 5%	0.80 ± 0.10
CGA3E2C0G1H821J	2 x Rated Voltage	C0G	50V	820	± 5%	0.80 ± 0.10
CGA3E2C0G1H102J	2 x Rated Voltage	C0G	50V	1,000	± 5%	0.80 ± 0.10
CGA3E2C0G1H122J	2 x Rated Voltage	C0G	50V	1,200	± 5%	0.80 ± 0.10
CGA3E2C0G1H152J	2 x Rated Voltage	C0G	50V	1,500	± 5%	0.80 ± 0.10
CGA3E2C0G1H182J	2 x Rated Voltage	C0G	50V	1,800	± 5%	0.80 ± 0.10
CGA3E2C0G1H222J	2 x Rated Voltage	C0G	50V	2,200	± 5%	0.80 ± 0.10
CGA3E2C0G1H272J	2 x Rated Voltage	C0G	50V	2,700	± 5%	0.80 ± 0.10
CGA3E2C0G1H332J	2 x Rated Voltage	C0G	50V	3,300	± 5%	0.80 ± 0.10
CGA3E2C0G2A101J	2 x Rated Voltage	C0G	100V	100	± 5%	0.80 ± 0.10
CGA3E2C0G2A121J	2 x Rated Voltage	C0G	100V	120	± 5%	0.80 ± 0.10
CGA3E2C0G2A151J	2 x Rated Voltage	C0G	100V	150	± 5%	0.80 ± 0.10
CGA3E2C0G2A181J	2 x Rated Voltage	C0G	100V	180	± 5%	0.80 ± 0.10
CGA3E2C0G2A221J	2 x Rated Voltage	C0G	100V	220	± 5%	0.80 ± 0.10
CGA3E2C0G2A271J	2 x Rated Voltage	C0G	100V	270	± 5%	0.80 ± 0.10
CGA3E2C0G2A331J	2 x Rated Voltage	C0G	100V	330	± 5%	0.80 ± 0.10
CGA3E2C0G2A391J	2 x Rated Voltage	C0G	100V	390	± 5%	0.80 ± 0.10
CGA3E2C0G2A471J	2 x Rated Voltage	C0G	100V	470	± 5%	0.80 ± 0.10
CGA3E2C0G2A561J	2 x Rated Voltage	C0G	100V	560	± 5%	0.80 ± 0.10

Capacitance Range Table

CGA3 [EIA CC0603/JIS C1608]

Class 1 (Temperature Compensating) (Continued)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Voltage Condition in Life Test	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CGA3E2C0G2A681J	2 x Rated Voltage	C0G	100V	680	± 5%	0.80 ± 0.10
CGA3E2C0G2A821J	2 x Rated Voltage	C0G	100V	820	± 5%	0.80 ± 0.10
CGA3E2C0G2A102J	2 x Rated Voltage	C0G	100V	1,000	± 5%	0.80 ± 0.10
CGA3E2C0G2A122J	2 x Rated Voltage	C0G	100V	1,200	± 5%	0.80 ± 0.10
CGA3E3C0G2E101J	1.5 x Rated Voltage	C0G	250V	100	± 5%	0.80 ± 0.10
CGA3E3C0G2E121J	1.5 x Rated Voltage	C0G	250V	120	± 5%	0.80 ± 0.10
CGA3E3C0G2E151J	1.5 x Rated Voltage	C0G	250V	150	± 5%	0.80 ± 0.10
CGA3E3C0G2E181J	1.5 x Rated Voltage	C0G	250V	180	± 5%	0.80 ± 0.10
CGA3E3C0G2E221J	1.5 x Rated Voltage	C0G	250V	220	± 5%	0.80 ± 0.10
CGA3E3C0G2E271J	1.5 x Rated Voltage	C0G	250V	270	± 5%	0.80 ± 0.10
CGA3E3C0G2E331J	1.5 x Rated Voltage	C0G	250V	330	± 5%	0.80 ± 0.10
CGA3E3C0G2E391J	1.5 x Rated Voltage	C0G	250V	390	± 5%	0.80 ± 0.10
CGA3E3C0G2E471J	1.5 x Rated Voltage	C0G	250V	470	± 5%	0.80 ± 0.10
CGA3E3C0G2E561J	1.5 x Rated Voltage	C0G	250V	560	± 5%	0.80 ± 0.10
CGA3E3C0G2E681J	1.5 x Rated Voltage	C0G	250V	680	± 5%	0.80 ± 0.10

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%), X8R (± 15%)

TDK Part Number (Ordering Code)	Voltage Condition in Life Test	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CGA3E2X7R1H102K	2 x Rated Voltage	X7R	50V	1,000	± 10%	0.80 ± 0.10
CGA3E2X7R1H222K	2 x Rated Voltage	X7R	50V	2,200	± 10%	0.80 ± 0.10
CGA3E2X7R1H472K	2 x Rated Voltage	X7R	50V	4,700	± 10%	0.80 ± 0.10
CGA3E2X7R1H103K	2 x Rated Voltage	X7R	50V	10,000	± 10%	0.80 ± 0.10
CGA3E2X7R1H223K	2 x Rated Voltage	X7R	50V	22,000	± 10%	0.80 ± 0.10
CGA3E2X7R1H473K	2 x Rated Voltage	X7R	50V	47,000	± 10%	0.80 ± 0.10
CGA3E2X7R1H683K	2 x Rated Voltage	X7R	50V	68,000	± 10%	0.80 ± 0.10
CGA3E2X7R1H104K	2 x Rated Voltage	X7R	50V	100,000	± 10%	0.80 ± 0.10
CGA3E2X7R1E104K	2 x Rated Voltage	X7R	25V	100,000	± 10%	0.80 ± 0.10
CGA3E2X7R1E154K	2 x Rated Voltage	X7R	25V	150,000	± 10%	0.80 ± 0.10
CGA3E1X7R1E224K	1 x Rated Voltage	X7R	25V	220,000	± 10%	0.80 ± 0.10
CGA3E2X7R1C224K	2 x Rated Voltage	X7R	16V	220,000	± 10%	0.80 ± 0.10
CGA3E1X7R1C334K	1 x Rated Voltage	X7R	16V	330,000	± 10%	0.80 ± 0.10
CGA3E1X7R1C474K	1 x Rated Voltage	X7R	16V	470,000	± 10%	0.80 ± 0.10
CGA3E1X7R1C684K	1 x Rated Voltage	X7R	16V	680,000	± 10%	0.80 ± 0.10
CGA3E2X7R2A102K	2 x Rated Voltage	X7R	100V	1,000	± 10%	0.80 ± 0.10
CGA3E2X7R2A152K	2 x Rated Voltage	X7R	100V	1,500	± 10%	0.80 ± 0.10
CGA3E2X7R2A222K	2 x Rated Voltage	X7R	100V	2,200	± 10%	0.80 ± 0.10
CGA3E2X7R2A332K	2 x Rated Voltage	X7R	100V	3,300	± 10%	0.80 ± 0.10
CGA3E2X7R2A472K	2 x Rated Voltage	X7R	100V	4,700	± 10%	0.80 ± 0.10
CGA3E2X7R2A682K	2 x Rated Voltage	X7R	100V	6,800	± 10%	0.80 ± 0.10
CGA3E2X7R2A103K	2 x Rated Voltage	X7R	100V	10,000	± 10%	0.80 ± 0.10
CGA3E2X7R2A153K	2 x Rated Voltage	X7R	100V	15,000	± 10%	0.80 ± 0.10
CGA3E2X7R2A223K	2 x Rated Voltage	X7R	100V	22,000	± 10%	0.80 ± 0.10
CGA3E2X8R1E683K	2 x Rated Voltage	X8R	25V	68,000	± 10%	0.80 ± 0.10
CGA3E2X8R1E104K	2 x Rated Voltage	X8R	25V	100,000	± 10%	0.80 ± 0.10
CGA3E2X8R1H102K	2 x Rated Voltage	X8R	50V	1,000	± 10%	0.80 ± 0.10
CGA3E2X8R1H152K	2 x Rated Voltage	X8R	50V	1,500	± 10%	0.80 ± 0.10
CGA3E2X8R1H222K	2 x Rated Voltage	X8R	50V	2,200	± 10%	0.80 ± 0.10
CGA3E2X8R1H332K	2 x Rated Voltage	X8R	50V	3,300	± 10%	0.80 ± 0.10
CGA3E2X8R1H472K	2 x Rated Voltage	X8R	50V	4,700	± 10%	0.80 ± 0.10
CGA3E2X8R1H682K	2 x Rated Voltage	X8R	50V	6,800	± 10%	0.80 ± 0.10
CGA3E2X8R1H103K	2 x Rated Voltage	X8R	50V	10,000	± 10%	0.80 ± 0.10
CGA3E2X8R1H153K	2 x Rated Voltage	X8R	50V	15,000	± 10%	0.80 ± 0.10
CGA3E2X8R1H223K	2 x Rated Voltage	X8R	50V	22,000	± 10%	0.80 ± 0.10

Capacitance Range Table

CGA3 [EIA CC0603/JIS C1608]

Class 2 (Temperature Stable) (Continued)

Temperature Characteristics: X8R (± 15%)

TDK Part Number (Ordering Code)	Voltage Condition in Life Test	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CGA3E2X8R1H333K	2 x Rated Voltage	X8R	50V	33,000	± 10%	0.80 ± 0.10
CGA3E2X8R1H473K	2 x Rated Voltage	X8R	50V	47,000	± 10%	0.80 ± 0.10
CGA3E2X8R2A102K	2 x Rated Voltage	X8R	100V	1,000	± 10%	0.80 ± 0.10
CGA3E2X8R2A152K	2 x Rated Voltage	X8R	100V	1,500	± 10%	0.80 ± 0.10
CGA3E2X8R2A222K	2 x Rated Voltage	X8R	100V	2,200	± 10%	0.80 ± 0.10
CGA3E2X8R2A332K	2 x Rated Voltage	X8R	100V	3,300	± 10%	0.80 ± 0.10
CGA3E2X8R2A472K	2 x Rated Voltage	X8R	100V	4,700	± 10%	0.80 ± 0.10
CGA3E2X8R2A682K	2 x Rated Voltage	X8R	100V	6,800	± 10%	0.80 ± 0.10
CGA3E2X8R2A103K	2 x Rated Voltage	X8R	100V	10,000	± 10%	0.80 ± 0.10
CGA3E2X8R2A153K	2 x Rated Voltage	X8R	100V	15,000	± 10%	0.80 ± 0.10

Capacitance Range Chart

CGA4 [EIA CC0805/JIS C2012]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC)
Rated Voltage: 250V (2E), 100V (2A), 50V (1H)

Capacitance (pF)	Cap Code	Tolerance	C0G		
			2E (250V)	2A (100V)	1H (50V)
820	821	J: ± 5%			
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				

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X8R (± 15%)
Rated Voltage: 250V (2E), 100V (2A), 50V (1H), 25V (1E), 16V (1C)

Capacitance (pF)	Cap Code	Tolerance	X7R					X8R		
			2E (250V)	2A (100V)	1H (50V)	1E (25V)	1C (16V)	2A (100V)	1H (50V)	1E (25V)
1,000	102	K: ± 10%								
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

0.60 ± 0.15 mm 0.85 ± 0.15 mm 1.25 ± 0.20 mm

Capacitance Range Table

CGA4 [EIA CC0805/JIS C2012]

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Voltage Condition in Life Test	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CGA4C2C0G1H272J	2 x Rated Voltage	C0G	50V	2,700	± 5%	0.60 ± 0.15
CGA4C2C0G1H332J	2 x Rated Voltage	C0G	50V	3,300	± 5%	0.60 ± 0.15
CGA4F2C0G1H392J	2 x Rated Voltage	C0G	50V	3,900	± 5%	0.85 ± 0.15
CGA4F2C0G1H472J	2 x Rated Voltage	C0G	50V	4,700	± 5%	0.85 ± 0.15
CGA4F2C0G1H562J	2 x Rated Voltage	C0G	50V	5,600	± 5%	0.85 ± 0.15
CGA4J2C0G1H682J	2 x Rated Voltage	C0G	50V	6,800	± 5%	1.25 ± 0.20
CGA4J2C0G1H822J	2 x Rated Voltage	C0G	50V	8,200	± 5%	1.25 ± 0.20
CGA4J2C0G1H103J	2 x Rated Voltage	C0G	50V	10,000	± 5%	1.25 ± 0.20
CGA4C2C0G2A102J	2 x Rated Voltage	C0G	100V	1,000	± 5%	0.60 ± 0.15
CGA4C2C0G2A122J	2 x Rated Voltage	C0G	100V	1,200	± 5%	0.60 ± 0.15
CGA4C2C0G2A152J	2 x Rated Voltage	C0G	100V	1,500	± 5%	0.60 ± 0.15
CGA4F2C0G2A182J	2 x Rated Voltage	C0G	100V	1,800	± 5%	0.85 ± 0.15
CGA4F2C0G2A222J	2 x Rated Voltage	C0G	100V	2,200	± 5%	0.85 ± 0.15
CGA4J2C0G2A272J	2 x Rated Voltage	C0G	100V	2,700	± 5%	1.25 ± 0.20
CGA4J2C0G2A332J	2 x Rated Voltage	C0G	100V	3,300	± 5%	1.25 ± 0.20
CGA4J2C0G2A392J	2 x Rated Voltage	C0G	100V	3,900	± 5%	1.25 ± 0.20
CGA4J2C0G2A472J	2 x Rated Voltage	C0G	100V	4,700	± 5%	1.25 ± 0.20
CGA4C3C0G2E821J	1.5 x Rated Voltage	C0G	250V	820	± 5%	0.60 ± 0.15
CGA4F3C0G2E102J	1.5 x Rated Voltage	C0G	250V	1,000	± 5%	0.85 ± 0.15
CGA4F3C0G2E122J	1.5 x Rated Voltage	C0G	250V	1,200	± 5%	0.85 ± 0.15
CGA4F3C0G2E152J	1.5 x Rated Voltage	C0G	250V	1,500	± 5%	0.85 ± 0.15
CGA4J3C0G2E182J	1.5 x Rated Voltage	C0G	250V	1,800	± 5%	1.25 ± 0.20
CGA4J3C0G2E222J	1.5 x Rated Voltage	C0G	250V	2,200	± 5%	1.25 ± 0.20
CGA4J3C0G2E272J	1.5 x Rated Voltage	C0G	250V	2,700	± 5%	1.25 ± 0.20

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%)

TDK Part Number (Ordering Code)	Voltage Condition in Life Test	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CGA4J2X7R1H154K	2 x Rated Voltage	X7R	50V	150,000	± 10%	1.25 ± 0.20
CGA4J2X7R1H224K	2 x Rated Voltage	X7R	50V	220,000	± 10%	1.25 ± 0.20
CGA4J2X7R1H334K	2 x Rated Voltage	X7R	50V	330,000	± 10%	1.25 ± 0.20
CGA4J2X7R1E474K	2 x Rated Voltage	X7R	25V	470,000	± 10%	1.25 ± 0.20
CGA4J3X7R1E684K	1.5 x Rated Voltage	X7R	25V	680,000	± 10%	1.25 ± 0.20
CGA4J3X7R1E105K	1.5 x Rated Voltage	X7R	25V	1,000,000	± 10%	1.25 ± 0.20
CGA4J2X7R1C684K	2 x Rated Voltage	X7R	16V	680,000	± 10%	1.25 ± 0.20
CGA4J2X7R1C105K	2 x Rated Voltage	X7R	16V	1,000,000	± 10%	1.25 ± 0.20
CGA4J3X7R1C155K	1.5 x Rated Voltage	X7R	16V	1,500,000	± 10%	1.25 ± 0.20
CGA4J3X7R1C225K	1.5 x Rated Voltage	X7R	16V	2,200,000	± 10%	1.25 ± 0.20
CGA4F2X7R2A102K	2 x Rated Voltage	X7R	100V	1,000	± 10%	0.85 ± 0.15
CGA4F2X7R2A152K	2 x Rated Voltage	X7R	100V	1,500	± 10%	0.85 ± 0.15
CGA4F2X7R2A222K	2 x Rated Voltage	X7R	100V	2,200	± 10%	0.85 ± 0.15
CGA4F2X7R2A332K	2 x Rated Voltage	X7R	100V	3,300	± 10%	0.85 ± 0.15
CGA4F2X7R2A472K	2 x Rated Voltage	X7R	100V	4,700	± 10%	0.85 ± 0.15
CGA4F2X7R2A682K	2 x Rated Voltage	X7R	100V	6,800	± 10%	0.85 ± 0.15
CGA4F2X7R2A103K	2 x Rated Voltage	X7R	100V	10,000	± 10%	0.85 ± 0.15
CGA4J2X7R2A153K	2 x Rated Voltage	X7R	100V	15,000	± 10%	1.25 ± 0.20
CGA4J2X7R2A223K	2 x Rated Voltage	X7R	100V	22,000	± 10%	1.25 ± 0.20
CGA4J2X7R2A333K	2 x Rated Voltage	X7R	100V	33,000	± 10%	1.25 ± 0.20
CGA4J2X7R2A473K	2 x Rated Voltage	X7R	100V	47,000	± 10%	1.25 ± 0.20
CGA4F2X7R2A683K	2 x Rated Voltage	X7R	100V	68,000	± 10%	0.85 ± 0.15
CGA4J2X7R2A104K	2 x Rated Voltage	X7R	100V	100,000	± 10%	1.25 ± 0.20
CGA4F3X7R2E102K	1.5 x Rated Voltage	X7R	250V	1,000	± 10%	0.85 ± 0.15
CGA4F3X7R2E152K	1.5 x Rated Voltage	X7R	250V	1,500	± 10%	0.85 ± 0.15
CGA4F3X7R2E222K	1.5 x Rated Voltage	X7R	250V	2,200	± 10%	0.85 ± 0.15

Capacitance Range Table

CGA4 [EIA CC0805/JIS C2012]

Class 2 (Temperature Stable) (Continued)

Temperature Characteristics: X7R (± 15%), X8R (± 15%)

TDK Part Number (Ordering Code)	Voltage Condition in Life Test	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CGA4F3X7R2E332K	1.5 x Rated Voltage	X7R	250V	3,300	± 10%	0.85 ± 0.15
CGA4F3X7R2E472K	1.5 x Rated Voltage	X7R	250V	4,700	± 10%	0.85 ± 0.15
CGA4J3X7R2E682K	1.5 x Rated Voltage	X7R	250V	6,800	± 10%	1.25 ± 0.20
CGA4J3X7R2E103K	1.5 x Rated Voltage	X7R	250V	10,000	± 10%	1.25 ± 0.20
CGA4J3X7R2E153K	1.5 x Rated Voltage	X7R	250V	15,000	± 10%	1.25 ± 0.20
CGA4J3X7R2E223K	1.5 x Rated Voltage	X7R	250V	22,000	± 10%	1.25 ± 0.20
CGA4F2X8R1E154K	2 x Rated Voltage	X8R	25V	150,000	± 10%	0.85 ± 0.15
CGA4J2X8R1E224K	2 x Rated Voltage	X8R	25V	220,000	± 10%	1.25 ± 0.20
CGA4J2X8R1E334K	2 x Rated Voltage	X8R	25V	330,000	± 10%	1.25 ± 0.20
CGA4J2X8R1H683K	2 x Rated Voltage	X8R	50V	68,000	± 10%	1.25 ± 0.20
CGA4J2X8R1H104K	2 x Rated Voltage	X8R	50V	100,000	± 10%	1.25 ± 0.20
CGA4J2X8R2A223K	2 x Rated Voltage	X8R	100V	22,000	± 10%	1.25 ± 0.20

Capacitance Range Chart

CGA5 [EIA CC1206/JIS C3216]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC)
Rated Voltage: 630V (2J), 250V (2E), 100V (2A), 50V (1H)

Capacitance (pF)	Cap Code	Tolerance	C0G			
			2J (630V)	2E (250V)	2A (100V)	1H (50V)
100	101	J: ± 5%				
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					
1,200	122					
1,500	152					
1,800	182					
2,200	222					
2,700	272					
3,300	332					
3,900	392					
4,700	472					
5,600	562					
6,800	682					
8,200	822					
10,000	103					
15,000	153					
22,000	223					
33,000	333					

Standard Thickness

0.60 ± 0.15 mm 0.85 ± 0.15 mm 1.15 ± 0.15 mm 1.60 ± 0.20 mm

Capacitance Range Chart

CGA5 [EIA CC1206/JIS C3216]

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X8R (± 15%)
Rated Voltage: 630V (2J), 250V (2E), 100V (2A), 50V (1H), 25V (1E), 16V (1C)

Capacitance (pF)	Cap Code	Tolerance	X7R						X8R		
			2J (630V)	2E (250V)	2A (100V)	1H (50V)	1E (25V)	1C (16V)	2A (100V)	1H (50V)	1E (25V)
1,000	102	K: ± 10%									
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										
3,300,000	335										
4,700,000	475										
6,800,000	685										

Standard Thickness

0.85 ± 0.15 mm 1.15 ± 0.15 mm 1.30 ± 0.20 mm 1.60 ± 0.20 mm

Capacitance Range Table

CGA5 [EIA CC1206/JIS C3216]

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Voltage Condition in Life Test	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CGA5C2C0G1H472J	2 x Rated Voltage	C0G	50V	4,700	± 5%	0.60 ± 0.15
CGA5C2C0G1H562J	2 x Rated Voltage	C0G	50V	5,600	± 5%	0.60 ± 0.15
CGA5C2C0G1H682J	2 x Rated Voltage	C0G	50V	6,800	± 5%	0.60 ± 0.15
CGA5F2C0G1H822J	2 x Rated Voltage	C0G	50V	8,200	± 5%	0.85 ± 0.15
CGA5F2C0G1H103J	2 x Rated Voltage	C0G	50V	10,000	± 5%	0.85 ± 0.15
CGA5H2C0G1H153J	2 x Rated Voltage	C0G	50V	15,000	± 5%	1.15 ± 0.15
CGA5H2C0G1H223J	2 x Rated Voltage	C0G	50V	22,000	± 5%	1.15 ± 0.15
CGA5L2C0G1H333J	2 x Rated Voltage	C0G	50V	33,000	± 5%	1.60 ± 0.20
CGA5C2C0G2A392J	2 x Rated Voltage	C0G	100V	3,900	± 5%	0.60 ± 0.15
CGA5F2C0G2A472J	2 x Rated Voltage	C0G	100V	4,700	± 5%	0.85 ± 0.15
CGA5F2C0G2A562J	2 x Rated Voltage	C0G	100V	5,600	± 5%	0.85 ± 0.15
CGA5H2C0G2A682J	2 x Rated Voltage	C0G	100V	6,800	± 5%	1.15 ± 0.15
CGA5H2C0G2A822J	2 x Rated Voltage	C0G	100V	8,200	± 5%	1.15 ± 0.15
CGA5H2C0G2A103J	2 x Rated Voltage	C0G	100V	10,000	± 5%	1.15 ± 0.15
CGA5F3C0G2E332J	1.5 x Rated Voltage	C0G	250V	3,300	± 5%	0.85 ± 0.15
CGA5H3C0G2E392J	1.5 x Rated Voltage	C0G	250V	3,900	± 5%	1.15 ± 0.15
CGA5H3C0G2E472J	1.5 x Rated Voltage	C0G	250V	4,700	± 5%	1.15 ± 0.15
CGA5H3C0G2E562J	1.5 x Rated Voltage	C0G	250V	5,600	± 5%	1.15 ± 0.15
CGA5L3C0G2E682J	1.5 x Rated Voltage	C0G	250V	6,800	± 5%	1.60 ± 0.20
CGA5L3C0G2E822J	1.5 x Rated Voltage	C0G	250V	8,200	± 5%	1.60 ± 0.20
CGA5C4C0G2J101J	1.2 x Rated Voltage	C0G	630V	100	± 5%	0.60 ± 0.15
CGA5C4C0G2J121J	1.2 x Rated Voltage	C0G	630V	120	± 5%	0.60 ± 0.15
CGA5C4C0G2J151J	1.2 x Rated Voltage	C0G	630V	150	± 5%	0.60 ± 0.15
CGA5C4C0G2J181J	1.2 x Rated Voltage	C0G	630V	180	± 5%	0.60 ± 0.15
CGA5C4C0G2J221J	1.2 x Rated Voltage	C0G	630V	220	± 5%	0.60 ± 0.15
CGA5C4C0G2J271J	1.2 x Rated Voltage	C0G	630V	270	± 5%	0.60 ± 0.15
CGA5C4C0G2J331J	1.2 x Rated Voltage	C0G	630V	330	± 5%	0.60 ± 0.15
CGA5C4C0G2J391J	1.2 x Rated Voltage	C0G	630V	390	± 5%	0.60 ± 0.15
CGA5F4C0G2J471J	1.2 x Rated Voltage	C0G	630V	470	± 5%	0.85 ± 0.15
CGA5F4C0G2J561J	1.2 x Rated Voltage	C0G	630V	560	± 5%	0.85 ± 0.15
CGA5F4C0G2J681J	1.2 x Rated Voltage	C0G	630V	680	± 5%	0.85 ± 0.15
CGA5F4C0G2J821J	1.2 x Rated Voltage	C0G	630V	820	± 5%	0.85 ± 0.15
CGA5F4C0G2J102J	1.2 x Rated Voltage	C0G	630V	1,000	± 5%	0.85 ± 0.15
CGA5F4C0G2J122J	1.2 x Rated Voltage	C0G	630V	1,200	± 5%	0.85 ± 0.15
CGA5H4C0G2J152J	1.2 x Rated Voltage	C0G	630V	1,500	± 5%	1.15 ± 0.15
CGA5H4C0G2J182J	1.2 x Rated Voltage	C0G	630V	1,800	± 5%	1.15 ± 0.15
CGA5H4C0G2J222J	1.2 x Rated Voltage	C0G	630V	2,200	± 5%	1.15 ± 0.15
CGA5L4C0G2J272J	1.2 x Rated Voltage	C0G	630V	2,700	± 5%	1.60 ± 0.20
CGA5L4C0G2J332J	1.2 x Rated Voltage	C0G	630V	3,300	± 5%	1.60 ± 0.20

Capacitance Range Table

CGA5 [EIA CC1206/JIS C3216]

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%), X8R (± 15%)

TDK Part Number (Ordering Code)	Voltage Condition in Life Test	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CGA5L2X7R1H474K	2 x Rated Voltage	X7R	50V	470,000	± 10%	1.60 ± 0.20
CGA5L2X7R1H684K	2 x Rated Voltage	X7R	50V	680,000	± 10%	1.60 ± 0.20
CGA5L3X7R1H105K	1.5 x Rated Voltage	X7R	50V	1,000,000	± 10%	1.60 ± 0.20
CGA5L2X7R1E155K	2 x Rated Voltage	X7R	25V	1,500,000	± 10%	1.60 ± 0.20
CGA5L2X7R1E225K	2 x Rated Voltage	X7R	25V	2,200,000	± 10%	1.60 ± 0.20
CGA5L1X7R1E335K	1 x Rated Voltage	X7R	25V	3,300,000	± 10%	1.60 ± 0.20
CGA5L1X7R1E475K	1 x Rated Voltage	X7R	25V	4,700,000	± 10%	1.60 ± 0.20
CGA5L1X7R1C685K	1 x Rated Voltage	X7R	16V	6,800,000	± 10%	1.60 ± 0.20
CGA5H2X7R2A333K	2 x Rated Voltage	X7R	100V	33,000	± 10%	1.15 ± 0.15
CGA5H2X7R2A473K	2 x Rated Voltage	X7R	100V	47,000	± 10%	1.15 ± 0.15
CGA5L2X7R2A683K	2 x Rated Voltage	X7R	100V	68,000	± 10%	1.60 ± 0.20
CGA5L2X7R2A104K	2 x Rated Voltage	X7R	100V	100,000	± 10%	1.60 ± 0.20
CGA5L2X7R2A154K	2 x Rated Voltage	X7R	100V	150,000	± 10%	1.60 ± 0.20
CGA5H2X7R2A224K	2 x Rated Voltage	X7R	100V	220,000	± 10%	1.15 ± 0.15
CGA5K2X7R2A334K	2 x Rated Voltage	X7R	100V	330,000	± 10%	1.30 ± 0.20
CGA5L2X7R2A474K	2 x Rated Voltage	X7R	100V	470,000	± 10%	1.60 ± 0.20
CGA5L2X7R2A105K	2 x Rated Voltage	X7R	100V	1,000,000	± 10%	1.60 ± 0.20
CGA5H3X7R2E153K	1.5 x Rated Voltage	X7R	250V	15,000	± 10%	1.15 ± 0.15
CGA5H3X7R2E223K	1.5 x Rated Voltage	X7R	250V	22,000	± 10%	1.15 ± 0.15
CGA5L3X7R2E333K	1.5 x Rated Voltage	X7R	250V	33,000	± 10%	1.60 ± 0.20
CGA5L3X7R2E473K	1.5 x Rated Voltage	X7R	250V	47,000	± 10%	1.60 ± 0.20
CGA5L3X7R2E683K	1.5 x Rated Voltage	X7R	250V	68,000	± 10%	1.60 ± 0.20
CGA5L3X7R2E104K	1.5 x Rated Voltage	X7R	250V	100,000	± 10%	1.60 ± 0.20
CGA5H4X7R2J102K	1.2 x Rated Voltage	X7R	630V	1,000	± 10%	1.15 ± 0.15
CGA5H4X7R2J152K	1.2 x Rated Voltage	X7R	630V	1,500	± 10%	1.15 ± 0.15
CGA5H4X7R2J222K	1.2 x Rated Voltage	X7R	630V	2,200	± 10%	1.15 ± 0.15
CGA5H4X7R2J332K	1.2 x Rated Voltage	X7R	630V	3,300	± 10%	1.15 ± 0.15
CGA5H4X7R2J472K	1.2 x Rated Voltage	X7R	630V	4,700	± 10%	1.15 ± 0.15
CGA5H4X7R2J682K	1.2 x Rated Voltage	X7R	630V	6,800	± 10%	1.15 ± 0.15
CGA5H4X7R2J103K	1.2 x Rated Voltage	X7R	630V	10,000	± 10%	1.15 ± 0.15
CGA5K4X7R2J153K	1.2 x Rated Voltage	X7R	630V	15,000	± 10%	1.30 ± 0.20
CGA5K4X7R2J223K	1.2 x Rated Voltage	X7R	630V	22,000	± 10%	1.30 ± 0.20
CGA5L4X7R2J333K	1.2 x Rated Voltage	X7R	630V	33,000	± 10%	1.60 ± 0.20
CGA5F2X8R1E334K	2 x Rated Voltage	X8R	25V	330,000	± 10%	0.85 ± 0.15
CGA5F2X8R1E474K	2 x Rated Voltage	X8R	25V	470,000	± 10%	0.85 ± 0.15
CGA5H2X8R1E684K	2 x Rated Voltage	X8R	25V	680,000	± 10%	1.15 ± 0.15
CGA5L2X8R1E105K	2 x Rated Voltage	X8R	25V	1,000,000	± 10%	1.60 ± 0.20
CGA5F2X8R1H154K	2 x Rated Voltage	X8R	50V	150,000	± 10%	0.85 ± 0.15
CGA5H2X8R1H224K	2 x Rated Voltage	X8R	50V	220,000	± 10%	1.15 ± 0.15
CGA5L2X8R1H334K	2 x Rated Voltage	X8R	50V	330,000	± 10%	1.60 ± 0.20
CGA5L2X8R1H474K	2 x Rated Voltage	X8R	50V	470,000	± 10%	1.60 ± 0.20
CGA5F2X8R2A333K	2 x Rated Voltage	X8R	100V	33,000	± 10%	0.85 ± 0.15
CGA5F2X8R2A473K	2 x Rated Voltage	X8R	100V	47,000	± 10%	0.85 ± 0.15
CGA5H2X8R2A683K	2 x Rated Voltage	X8R	100V	68,000	± 10%	1.15 ± 0.15
CGA5H2X8R2A104K	2 x Rated Voltage	X8R	100V	100,000	± 10%	1.15 ± 0.15
CGA5L2X8R2A154K	2 x Rated Voltage	X8R	100V	150,000	± 10%	1.60 ± 0.20

Capacitance Range Chart

CGA6 [EIA CC1210/JIS C3225]

Capacitance Range Chart

Temperature Characteristics: C0G (0 ± 30ppm/ºC)
Rated Voltage: 630V (2J), 250V (2E), 100V (2A), 50V (1H)

Capacitance (pF)	Cap Code	Tolerance	C0G			
			2J (630V)	2E (250V)	2A (100V)	1H (50V)
3,900	392	J: ± 5%				
4,700	472					
5,600	562					
6,800	682					
10,000	103					
15,000	153					
22,000	223					
33,000	333					
47,000	473					
68,000	683					
100,000	104					

Capacitance Range Chart

Temperature Characteristics: X7R (± 15%), X8R (± 15%)
Rated Voltage: 630V (2J), 250V (2E), 100V (2A), 50V (1H), 25V (1E), 16V (1C)

Capacitance (pF)	Cap Code	Tolerance	X7R						X8R
			2J (630V)	2E (250V)	2A (100V)	1H (50V)	1E (25V)	1C (16V)	1E (25V)
47,000	473	K: ± 10%							
68,000	683								
100,000	104								
150,000	154								
220,000	224								
330,000	334								
470,000	474								
680,000	684								
1,000,000	105								
1,500,000	155								
2,200,000	225								
3,300,000	335								
4,700,000	475								
6,800,000	685								
10,000,000	106	M: ± 20%							
15,000,000	156								
22,000,000	226								

Standard Thickness

1.25 ± 0.20 mm 1.60 ± 0.20 mm 2.00 ± 0.20 mm 2.30 ± 0.20 mm 2.50 ± 0.30 mm

Capacitance Range Table

CGA6 [EIA CC1210/JIS C3225]

Class 1 (Temperature Compensating)

Temperature Characteristics: C0G (0 ± 30 ppm/ºC)

TDK Part Number (Ordering Code)	Voltage Condition in Life Test	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CGA6J2C0G1H223J	2 x Rated Voltage	C0G	50V	22,000	± 5%	1.25 ± 0.20
CGA6L2C0G1H333J	2 x Rated Voltage	C0G	50V	33,000	± 5%	1.60 ± 0.20
CGA6M2C0G1H473J	2 x Rated Voltage	C0G	50V	47,000	± 5%	2.00 ± 0.20
CGA6M2C0G1H683J	2 x Rated Voltage	C0G	50V	68,000	± 5%	2.00 ± 0.20
CGA6P2C0G1H104J	2 x Rated Voltage	C0G	50V	100,000	± 5%	2.50 ± 0.30
CGA6J2C0G2A153J	2 x Rated Voltage	C0G	100V	15,000	± 5%	1.25 ± 0.20
CGA6L2C0G2A223J	2 x Rated Voltage	C0G	100V	22,000	± 5%	1.60 ± 0.20
CGA6M2C0G2A333J	2 x Rated Voltage	C0G	100V	33,000	± 5%	2.00 ± 0.20
CGA6N2C0G2A473J	2 x Rated Voltage	C0G	100V	47,000	± 5%	2.30 ± 0.20
CGA6L3C0G2E103J	1.5 x Rated Voltage	C0G	250V	10,000	± 5%	1.60 ± 0.20
CGA6M3C0G2E153J	1.5 x Rated Voltage	C0G	250V	15,000	± 5%	2.00 ± 0.20
CGA6J4C0G2J392J	1.2 x Rated Voltage	C0G	630V	3,900	± 5%	1.25 ± 0.20
CGA6L4C0G2J472J	1.2 x Rated Voltage	C0G	630V	4,700	± 5%	1.60 ± 0.20
CGA6L4C0G2J562J	1.2 x Rated Voltage	C0G	630V	5,600	± 5%	1.60 ± 0.20
CGA6M4C0G2J682J	1.2 x Rated Voltage	C0G	630V	6,800	± 5%	2.00 ± 0.20

Class 2 (Temperature Stable)

Temperature Characteristics: X7R (± 15%), X8R (± 15%)

TDK Part Number (Ordering Code)	Voltage Condition in Life Test	Temperature Characteristics	Rated Voltage	Capacitance (pF)	Capacitance Tolerance	Thickness (mm)
CGA6L2X7R1H105K	2 x Rated Voltage	X7R	50V	1,000,000	± 10%	1.60 ± 0.20
CGA6M2X7R1H155K	2 x Rated Voltage	X7R	50V	1,500,000	± 10%	2.00 ± 0.20
CGA6M3X7R1H225K	1.5 x Rated Voltage	X7R	50V	2,200,000	± 10%	2.00 ± 0.20
CGA6P3X7R1H335K	1.5 x Rated Voltage	X7R	50V	3,300,000	± 10%	2.50 ± 0.30
CGA6L2X7R1E335K	2 x Rated Voltage	X7R	25V	3,300,000	± 10%	1.60 ± 0.20
CGA6M2X7R1E475K	2 x Rated Voltage	X7R	25V	4,700,000	± 10%	2.00 ± 0.20
CGA6P3X7R1E685K	1.5 x Rated Voltage	X7R	25V	6,800,000	± 10%	2.50 ± 0.30
CGA6P1X7R1E106K	1 x Rated Voltage	X7R	25V	10,000,000	± 10%	2.50 ± 0.30
CGA6M3X7R1C106K	1.5 x Rated Voltage	X7R	16V	10,000,000	± 10%	2.00 ± 0.20
CGA6P3X7R1C156M	1.5 x Rated Voltage	X7R	16V	15,000,000	± 20%	2.50 ± 0.30
CGA6P1X7R1C226M	1 x Rated Voltage	X7R	16V	22,000,000	± 20%	2.50 ± 0.30
CGA6M2X7R2A334K	2 x Rated Voltage	X7R	100V	330,000	± 10%	2.00 ± 0.20
CGA6M2X7R2A474K	2 x Rated Voltage	X7R	100V	470,000	± 10%	2.00 ± 0.20
CGA6L2X7R2A684K	2 x Rated Voltage	X7R	100V	680,000	± 10%	1.60 ± 0.20
CGA6M2X7R2A105K	2 x Rated Voltage	X7R	100V	1,000,000	± 10%	2.00 ± 0.20
CGA6N3X7R2A225K	1.5 x Rated Voltage	X7R	100V	2,200,000	± 10%	2.30 ± 0.20
CGA6M3X7R2E104K	1.5 x Rated Voltage	X7R	250V	100,000	± 10%	2.00 ± 0.20
CGA6M3X7R2E154K	1.5 x Rated Voltage	X7R	250V	150,000	± 10%	2.00 ± 0.20
CGA6M3X7R2E224K	1.5 x Rated Voltage	X7R	250V	220,000	± 10%	2.00 ± 0.20
CGA6M4X7R2J473K	1.2 x Rated Voltage	X7R	630V	47,000	± 10%	2.00 ± 0.20
CGA6M4X7R2J683K	1.2 x Rated Voltage	X7R	630V	68,000	± 10%	2.00 ± 0.20
CGA6L2X8R1E155K	2 x Rated Voltage	X8R	25V	1,500,000	± 10%	1.60 ± 0.20
CGA6M2X8R1E225K	2 x Rated Voltage	X8R	25V	2,200,000	± 10%	2.00 ± 0.20
CGA6P2X8R1E335K	2 x Rated Voltage	X8R	25V	3,300,000	± 10%	2.50 ± 0.30

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