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Please read this before using the product.

SAFETY REMINDERS

REMINDERS

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General Multilayer Ceramic Chip Capacitors

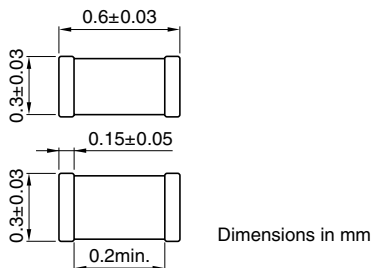
C Series C0603 (EIA CC0201) Type

Conformity to RoHS Directive

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.

SHAPES AND DIMENSIONS



PRODUCT IDENTIFICATION

C	0603	CH	1E	100	D	□
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Series name

(2) Dimensions L×W

0603	0.6×0.3mm
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(3) Capacitance temperature characteristics

Class 1 (Temperature compensation)

Temperature characteristics	Capacitance change	Temperature range
CH	0±60ppm/°C	-25 to +85°C
C0G	0±30ppm/°C	-55 to +125°C

Class 2 (Temperature stable and general purpose)

Temperature characteristics	Capacitance change	Temperature range
JB	±10%	-25 to +85°C
JF	+30, -80%	-25 to +85°C
X7R	±15%	-55 to +125°C
X5R	±15%	-55 to +85°C
Y5V	+22, -82%	-30 to +85°C

(4) Rated voltage E_{dc}

0J	6.3V
1A	10V
1C	16V
1E	25V

(5) Nominal capacitance

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.

010	1pF
100	10pF
102	1,000pF
0R5	0.5pF

(6) Capacitance tolerance

Symbol	Tolerance	Applicable capacitance range
C	±0.25pF	10pF or less
D	±0.5pF	
J	±5%	Over 10pF
K	±10%	
M	±20%	
Z	+80, -20%	

(7) Packaging style

T	Taping (reel)
B	Bulk

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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CAPACITANCE RANGES: CLASS 1 (TEMPERATURE COMPENSATION)

TEMPERATURE CHARACTERISTICS: CH(0±60ppm/°C), C0G(0±30ppm/°C)

RATED VOLTAGE E_{dc}: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
0.5	±0.25pF	0.30±0.03	C0603CH1E0R5C	C0603C0G1E0R5C
0.75	±0.25pF	0.30±0.03	C0603CH1ER75C	C0603C0G1ER75C
1	±0.25pF	0.30±0.03	C0603CH1E010C	C0603C0G1E010C
1.5	±0.25pF	0.30±0.03	C0603CH1E1R5C	C0603C0G1E1R5C
2	±0.25pF	0.30±0.03	C0603CH1E020C	C0603C0G1E020C
3	±0.25pF	0.30±0.03	C0603CH1E030C	C0603C0G1E030C
4	±0.25pF	0.30±0.03	C0603CH1E040C	C0603C0G1E040C
5	±0.25pF	0.30±0.03	C0603CH1E050C	C0603C0G1E050C
6	±0.5pF	0.30±0.03	C0603CH1E060D	C0603C0G1E060D
7	±0.5pF	0.30±0.03	C0603CH1E070D	C0603C0G1E070D
8	±0.5pF	0.30±0.03	C0603CH1E080D	C0603C0G1E080D
9	±0.5pF	0.30±0.03	C0603CH1E090D	C0603C0G1E090D
10	±0.5pF	0.30±0.03	C0603CH1E100D	C0603C0G1E100D
12	±5%	0.30±0.03	C0603CH1E120J	C0603C0G1E120J
15	±5%	0.30±0.03	C0603CH1E150J	C0603C0G1E150J
18	±5%	0.30±0.03	C0603CH1E180J	C0603C0G1E180J
22	±5%	0.30±0.03	C0603CH1E220J	C0603C0G1E220J
27	±5%	0.30±0.03	C0603CH1E270J	C0603C0G1E270J
33	±5%	0.30±0.03	C0603CH1E330J	C0603C0G1E330J
39	±5%	0.30±0.03	C0603CH1E390J	C0603C0G1E390J
47	±5%	0.30±0.03	C0603CH1E470J	C0603C0G1E470J
56	±5%	0.30±0.03	C0603CH1E560J	C0603C0G1E560J
68	±5%	0.30±0.03	C0603CH1E680J	C0603C0G1E680J
82	±5%	0.30±0.03	C0603CH1E820J	C0603C0G1E820J
100	±5%	0.30±0.03	C0603CH1E101J	C0603C0G1E101J

CAPACITANCE RANGES: CLASS 2

TEMPERATURE CHARACTERISTICS: JB(±10%), X5R/X7R(±15%)

RATED VOLTAGE E_{dc}: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
100	±10%	0.30±0.03	C0603JB1E101K	C0603X5R1E101K	C0603X7R1E101K
150	±10%	0.30±0.03	C0603JB1E151K	C0603X5R1E151K	C0603X7R1E151K
220	±10%	0.30±0.03	C0603JB1E221K	C0603X5R1E221K	C0603X7R1E221K
330	±10%	0.30±0.03	C0603JB1E331K	C0603X5R1E331K	C0603X7R1E331K
470	±10%	0.30±0.03	C0603JB1E471K	C0603X5R1E471K	C0603X7R1E471K
680	±10%	0.30±0.03	C0603JB1E681K	C0603X5R1E681K	C0603X7R1E681K
1,000	±10%	0.30±0.03	C0603JB1E102K	C0603X5R1E102K	C0603X7R1E102K
1,500	±10%	0.30±0.03	C0603JB1E152K	C0603X5R1E152K	C0603X7R1E152K
2,200	±10%	0.30±0.03	C0603JB1E222K	C0603X5R1E222K	C0603X7R1E222K
3,300	±10%	0.30±0.03	C0603JB1E332K	C0603X5R1E332K	C0603X7R1E332K

RATED VOLTAGE E_{dc}: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
4,700	±10%	0.30±0.03	C0603JB1C472K	C0603X5R1C472K	C0603X7R1C472K

TEMPERATURE CHARACTERISTICS: JB(±10%), X5R(±15%)

RATED VOLTAGE E_{dc}: 10V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
6,800	±10%	0.30±0.03	C0603JB1A682K	C0603X5R1A682K
10,000	±10%	0.30±0.03	C0603JB1A103K	C0603X5R1A103K

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RATED VOLTAGE Edc: 6.3V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
15,000	±10%	0.30±0.03	C0603JB0J153K	C0603X5R0J153K
	±20%	0.30±0.03	C0603JB0J153M	C0603X5R0J153M
22,000	±10%	0.30±0.03	C0603JB0J223K	C0603X5R0J223K
	±20%	0.30±0.03	C0603JB0J223M	C0603X5R0J223M
33,000	±10%	0.30±0.03	C0603JB0J333K	C0603X5R0J333K
	±20%	0.30±0.03	C0603JB0J333M	C0603X5R0J333M
47,000	±10%	0.30±0.03	C0603JB0J473K	C0603X5R0J473K
	±20%	0.30±0.03	C0603JB0J473M	C0603X5R0J473M
68,000	±10%	0.30±0.03	C0603JB0J683K	C0603X5R0J683K
	±20%	0.30±0.03	C0603JB0J683M	C0603X5R0J683M
100,000	±10%	0.30±0.03	C0603JB0J104K	C0603X5R0J104K
	±20%	0.30±0.03	C0603JB0J104M	C0603X5R0J104M

TEMPERATURE CHARACTERISTICS: JF(+30, -80%), Y5V(+22, -82%)
RATED VOLTAGE Edc: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
10,000	+80,-20%	0.30±0.03	C0603JF1C103Z	C0603Y5V1C103Z

• For more information about the products of other capacitance or data, please contact us.

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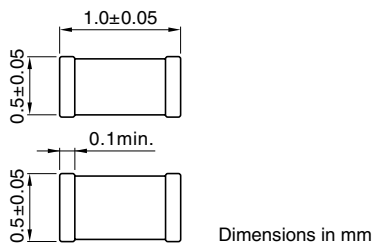
C Series C1005(EIA CC0402) Type

Conformity to RoHS Directive

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.

SHAPES AND DIMENSIONS



PRODUCT IDENTIFICATION

C 1005 CH 1H 100 D □
 (1) (2) (3) (4) (5) (6) (7)

(1) Series name

(2) Dimensions L×W

1005	1.0×0.5mm
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(3) Capacitance temperature characteristics

Class 1 (Temperature compensation)

Temperature characteristics	Capacitance change	Temperature range
CH	0±60ppm/°C	-25 to +85°C
C0G	0±30ppm/°C	-55 to +125°C

Class 2 (Temperature stable and general purpose)

Temperature characteristics	Capacitance change	Temperature range
JB	±10%	-25 to +85°C
JF	+30, -80%	-25 to +85°C
X7R	±15%	-55 to +125°C
X5R	±15%	-55 to +85°C
Y5V	+22, -82%	-30 to +85°C

(4) Rated voltage E_{dc}

0J	6.3V
1A	10V
1C	16V
1E	25V
1H	50V

(5) Nominal capacitance

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.

010	1pF
100	10pF
102	1,000pF
0R5	0.5pF

(6) Capacitance tolerance

Symbol	Tolerance	Applicable capacitance range
C	±0.25pF	10pF or less
D	±0.5pF	
J	±5%	Over 10pF
K	±10%	
M	±20%	
Z	+80, -20%	

(7) Packaging style

T	Taping (reel)
B	Bulk

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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CAPACITANCE RANGES: CLASS 1 (TEMPERATURE COMPENSATION)
TEMPERATURE CHARACTERISTICS: CH(0±60ppm/°C), C0G(0±30ppm/°C)

 RATED VOLTAGE E_{dc}: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
0.5	±0.25pF	0.50±0.05	C1005CH1H0R5C	C1005C0G1H0R5C
0.75	±0.25pF	0.50±0.05	C1005CH1HR75C	C1005C0G1HR75C
1	±0.25pF	0.50±0.05	C1005CH1H010C	C1005C0G1H010C
1.5	±0.25pF	0.50±0.05	C1005CH1H1R5C	C1005C0G1H1R5C
2	±0.25pF	0.50±0.05	C1005CH1H020C	C1005C0G1H020C
3	±0.25pF	0.50±0.05	C1005CH1H030C	C1005C0G1H030C
4	±0.25pF	0.50±0.05	C1005CH1H040C	C1005C0G1H040C
5	±0.25pF	0.50±0.05	C1005CH1H050C	C1005C0G1H050C
6	±0.5pF	0.50±0.05	C1005CH1H060D	C1005C0G1H060D
7	±0.5pF	0.50±0.05	C1005CH1H070D	C1005C0G1H070D
8	±0.5pF	0.50±0.05	C1005CH1H080D	C1005C0G1H080D
9	±0.5pF	0.50±0.05	C1005CH1H090D	C1005C0G1H090D
10	±0.5pF	0.50±0.05	C1005CH1H100D	C1005C0G1H100D
12	±5%	0.50±0.05	C1005CH1H120J	C1005C0G1H120J
15	±5%	0.50±0.05	C1005CH1H150J	C1005C0G1H150J
18	±5%	0.50±0.05	C1005CH1H180J	C1005C0G1H180J
22	±5%	0.50±0.05	C1005CH1H220J	C1005C0G1H220J
27	±5%	0.50±0.05	C1005CH1H270J	C1005C0G1H270J
33	±5%	0.50±0.05	C1005CH1H330J	C1005C0G1H330J
39	±5%	0.50±0.05	C1005CH1H390J	C1005C0G1H390J
47	±5%	0.50±0.05	C1005CH1H470J	C1005C0G1H470J
56	±5%	0.50±0.05	C1005CH1H560J	C1005C0G1H560J
68	±5%	0.50±0.05	C1005CH1H680J	C1005C0G1H680J
82	±5%	0.50±0.05	C1005CH1H820J	C1005C0G1H820J
100	±5%	0.50±0.05	C1005CH1H101J	C1005C0G1H101J
120	±5%	0.50±0.05	C1005CH1H121J	C1005C0G1H121J
150	±5%	0.50±0.05	C1005CH1H151J	C1005C0G1H151J
180	±5%	0.50±0.05	C1005CH1H181J	C1005C0G1H181J
220	±5%	0.50±0.05	C1005CH1H221J	C1005C0G1H221J
270	±5%	0.50±0.05	C1005CH1H271J	C1005C0G1H271J
330	±5%	0.50±0.05	C1005CH1H331J	C1005C0G1H331J
390	±5%	0.50±0.05	C1005CH1H391J	C1005C0G1H391J
470	±5%	0.50±0.05	C1005CH1H471J	C1005C0G1H471J

CAPACITANCE RANGES: CLASS 2
TEMPERATURE CHARACTERISTICS: JB(±10%), X5R/X7R(±15%)

 RATED VOLTAGE E_{dc}: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
220	±10%	0.50±0.05	C1005JB1H221K	C1005X5R1H221K	C1005X7R1H221K
330	±10%	0.50±0.05	C1005JB1H331K	C1005X5R1H331K	C1005X7R1H331K
470	±10%	0.50±0.05	C1005JB1H471K	C1005X5R1H471K	C1005X7R1H471K
680	±10%	0.50±0.05	C1005JB1H681K	C1005X5R1H681K	C1005X7R1H681K
1,000	±10%	0.50±0.05	C1005JB1H102K	C1005X5R1H102K	C1005X7R1H102K
1,500	±10%	0.50±0.05	C1005JB1H152K	C1005X5R1H152K	C1005X7R1H152K
2,200	±10%	0.50±0.05	C1005JB1H222K	C1005X5R1H222K	C1005X7R1H222K
3,300	±10%	0.50±0.05	C1005JB1H332K	C1005X5R1H332K	C1005X7R1H332K
4,700	±10%	0.50±0.05	C1005JB1H472K	C1005X5R1H472K	C1005X7R1H472K
6,800	±10%	0.50±0.05	C1005JB1H682K	C1005X5R1H682K	C1005X7R1H682K

 RATED VOLTAGE E_{dc}: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
10,000	±10%	0.50±0.05	C1005JB1E103K	C1005X5R1E103K	C1005X7R1E103K
15,000	±10%	0.50±0.05	C1005JB1E153K	C1005X5R1E153K	C1005X7R1E153K
22,000	±10%	0.50±0.05	C1005JB1E223K	C1005X5R1E223K	C1005X7R1E223K
33,000	±10%	0.50±0.05	C1005JB1E333K	C1005X5R1E333K	C1005X7R1E333K
47,000	±10%	0.50±0.05	C1005JB1E473K	C1005X5R1E473K	C1005X7R1E473K

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RATED VOLTAGE Edc: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
68,000	±10%	0.50±0.05	C1005JB1C683K	C1005X5R1C683K	C1005X7R1C683K
100,000	±10%	0.50±0.05	C1005JB1C104K	C1005X5R1C104K	C1005X7R1C104K

TEMPERATURE CHARACTERISTICS: JB(±10%), X5R(±15%)

RATED VOLTAGE Edc: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
150,000	±10%	0.50±0.05	C1005JB1C154K	C1005X5R1C154K
	±20%	0.50±0.05	C1005JB1C154M	C1005X5R1C154M
220,000	±10%	0.50±0.05	C1005JB1C224K	C1005X5R1C224K
	±20%	0.50±0.05	C1005JB1C224M	C1005X5R1C224M

RATED VOLTAGE Edc: 10V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
330,000	±10%	0.50±0.05	C1005JB1A334K	C1005X5R1A334K
	±20%	0.50±0.05	C1005JB1A334M	C1005X5R1A334M
470,000	±10%	0.50±0.05	C1005JB1A474K	C1005X5R1A474K
	±20%	0.50±0.05	C1005JB1A474M	C1005X5R1A474M
680,000	±10%	0.50±0.05	C1005JB1A684K	C1005X5R1A684K
	±20%	0.50±0.05	C1005JB1A684M	C1005X5R1A684M
1,000,000	±10%	0.50±0.05	C1005JB1A105K	C1005X5R1A105K
	±20%	0.50±0.05	C1005JB1A105M	C1005X5R1A105M

RATED VOLTAGE Edc: 6.3V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
680,000	±10%	0.50±0.05	C1005JB0J684K	C1005X5R0J684K
	±20%	0.50±0.05	C1005JB0J684M	C1005X5R0J684M
1,000,000	±10%	0.50±0.05	C1005JB0J105K	C1005X5R0J105K
	±20%	0.50±0.05	C1005JB0J105M	C1005X5R0J105M
1,500,000	±10%	0.50±0.05	C1005JB0J155K	C1005X5R0J155K
	±20%	0.50±0.05	C1005JB0J155M	C1005X5R0J155M
2,200,000	±20%	0.50±0.05	C1005JB0J225M	C1005X5R0J225M

TEMPERATURE CHARACTERISTICS: JF(+30, -80%), Y5V(+22, -82%)

RATED VOLTAGE Edc: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
100,000	+80,-20%	0.50±0.05	C1005JF1E104Z	C1005Y5V1E104Z
220,000	+80,-20%	0.50±0.05	C1005JF1E224Z	C1005Y5V1E224Z

RATED VOLTAGE Edc: 10V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
470,000	+80,-20%	0.50±0.05	C1005JF1A474Z	C1005Y5V1A474Z

RATED VOLTAGE Edc: 6.3V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
1,000,000	+80,-20%	0.50±0.05	C1005JF0J105Z	C1005Y5V0J105Z

• For more information about the products of other capacitance or data, please contact us.

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

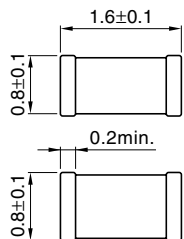
C Series C1608 (EIA CC0603) Types

Conformity to RoHS Directive

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.

SHAPES AND DIMENSIONS



Dimensions in mm



PRODUCT IDENTIFICATION

C 1608 CH 1H 100 D □
(1) (2) (3) (4) (5) (6) (7)

(1) Series name

(2) Dimensions L×W

1608	1.6×0.8mm
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(3) Capacitance temperature characteristics

Class 1 (Temperature compensation)

Temperature characteristics	Capacitance change	Temperature range
CH	0±60ppm/°C	-25 to +85°C
C0G	0±30ppm/°C	-55 to +125°C

Class 2 (Temperature stable and general purpose)

Temperature characteristics	Capacitance change	Temperature range
JB	±10%	-25 to +85°C
JF	+30, -80%	-25 to +85°C
X7R	±15%	-55 to +125°C
X5R	±15%	-55 to +85°C
Y5V	+22, -82%	-30 to +85°C

(4) Rated voltage E_{dc}

0J	6.3V
1A	10V
1C	16V
1E	25V
1H	50V

(5) Nominal capacitance

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.

010	1pF
100	10pF
102	1,000pF
0R5	0.5pF

(6) Capacitance tolerance

Symbol	Tolerance	Applicable capacitance range
C	±0.25pF	10pF or less
D	±0.5pF	
J	±5%	Over 10pF
K	±10%	
M	±20%	
Z	+80, -20%	

(7) Packaging style

T	Taping (reel)
B	Bulk

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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CAPACITANCE RANGES: CLASS 1 (TEMPERATURE COMPENSATION)
TEMPERATURE CHARACTERISTICS: CH(0±60ppm/°C), C0G(0±30ppm/°C)

 RATED VOLTAGE E_{dc}: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
0.5	±0.25pF	0.8±0.10	C1608CH1H0R5C	C1608C0G1H0R5C
0.75	±0.25pF	0.8±0.10	C1608CH1HR75C	C1608C0G1HR75C
1	±0.25pF	0.8±0.10	C1608CH1H010C	C1608C0G1H010C
1.5	±0.25pF	0.8±0.10	C1608CH1H1R5C	C1608C0G1H1R5C
2	±0.25pF	0.8±0.10	C1608CH1H020C	C1608C0G1H020C
3	±0.25pF	0.8±0.10	C1608CH1H030C	C1608C0G1H030C
4	±0.25pF	0.8±0.10	C1608CH1H040C	C1608C0G1H040C
5	±0.25pF	0.8±0.10	C1608CH1H050C	C1608C0G1H050C
6	±0.5pF	0.8±0.10	C1608CH1H060D	C1608C0G1H060D
7	±0.5pF	0.8±0.10	C1608CH1H070D	C1608C0G1H070D
8	±0.5pF	0.8±0.10	C1608CH1H080D	C1608C0G1H080D
9	±0.5pF	0.8±0.10	C1608CH1H090D	C1608C0G1H090D
10	±0.5pF	0.8±0.10	C1608CH1H100D	C1608C0G1H100D
12	±5%	0.8±0.10	C1608CH1H120J	C1608C0G1H120J
15	±5%	0.8±0.10	C1608CH1H150J	C1608C0G1H150J
18	±5%	0.8±0.10	C1608CH1H180J	C1608C0G1H180J
22	±5%	0.8±0.10	C1608CH1H220J	C1608C0G1H220J
27	±5%	0.8±0.10	C1608CH1H270J	C1608C0G1H270J
33	±5%	0.8±0.10	C1608CH1H330J	C1608C0G1H330J
39	±5%	0.8±0.10	C1608CH1H390J	C1608C0G1H390J
47	±5%	0.8±0.10	C1608CH1H470J	C1608C0G1H470J
56	±5%	0.8±0.10	C1608CH1H560J	C1608C0G1H560J
68	±5%	0.8±0.10	C1608CH1H680J	C1608C0G1H680J
82	±5%	0.8±0.10	C1608CH1H820J	C1608C0G1H820J
100	±5%	0.8±0.10	C1608CH1H101J	C1608C0G1H101J
120	±5%	0.8±0.10	C1608CH1H121J	C1608C0G1H121J
150	±5%	0.8±0.10	C1608CH1H151J	C1608C0G1H151J
180	±5%	0.8±0.10	C1608CH1H181J	C1608C0G1H181J
220	±5%	0.8±0.10	C1608CH1H221J	C1608C0G1H221J
270	±5%	0.8±0.10	C1608CH1H271J	C1608C0G1H271J
330	±5%	0.8±0.10	C1608CH1H331J	C1608C0G1H331J
390	±5%	0.8±0.10	C1608CH1H391J	C1608C0G1H391J
470	±5%	0.8±0.10	C1608CH1H471J	C1608C0G1H471J
560	±5%	0.8±0.10	C1608CH1H561J	C1608C0G1H561J
680	±5%	0.8±0.10	C1608CH1H681J	C1608C0G1H681J
820	±5%	0.8±0.10	C1608CH1H821J	C1608C0G1H821J
1,000	±5%	0.8±0.10	C1608CH1H102J	C1608C0G1H102J
1,500	±5%	0.8±0.10	C1608CH1H152J	C1608C0G1H152J
2,200	±5%	0.8±0.10	C1608CH1H222J	C1608C0G1H222J
3,300	±5%	0.8±0.10	C1608CH1H332J	C1608C0G1H332J

CAPACITANCE RANGES: CLASS 2
TEMPERATURE CHARACTERISTICS: JB(±10%), X5R/X7R(±15%)

 RATED VOLTAGE E_{dc}: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
10,000	±10%	0.8±0.10	C1608JB1H103K	C1608X5R1H103K	C1608X7R1H103K
15,000	±10%	0.8±0.10	C1608JB1H153K	C1608X5R1H153K	C1608X7R1H153K
22,000	±10%	0.8±0.10	C1608JB1H223K	C1608X5R1H223K	C1608X7R1H223K
33,000	±10%	0.8±0.10	C1608JB1H333K	C1608X5R1H333K	C1608X7R1H333K
47,000	±10%	0.8±0.10	C1608JB1H473K	C1608X5R1H473K	C1608X7R1H473K
68,000	±10%	0.8±0.10	C1608JB1H683K	C1608X5R1H683K	C1608X7R1H683K
100,000	±10%	0.8±0.10	C1608JB1H104K	C1608X5R1H104K	C1608X7R1H104K
	±20%	0.8±0.10	C1608JB1H104M	C1608X5R1H104M	C1608X7R1H104M

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RATED VOLTAGE Edc: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
150,000	±10%	0.8±0.10	C1608JB1E154K	C1608X5R1E154K	C1608X7R1E154K
	±20%	0.8±0.10	C1608JB1E154M	C1608X5R1E154M	C1608X7R1E154M
220,000	±10%	0.8±0.10	C1608JB1E224K	C1608X5R1E224K	C1608X7R1E224K
	±20%	0.8±0.10	C1608JB1E224M	C1608X5R1E224M	C1608X7R1E224M
330,000	±10%	0.8±0.10	C1608JB1E334K	C1608X5R1E334K	C1608X7R1E334K
	±20%	0.8±0.10	C1608JB1E334M	C1608X5R1E334M	C1608X7R1E334M

RATED VOLTAGE Edc: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
470,000	±10%	0.8+0.15, -0.1	C1608JB1C474K	C1608X5R1C474K	C1608X7R1C474K
	±20%	0.8+0.15, -0.1	C1608JB1C474M	C1608X5R1C474M	C1608X7R1C474M
680,000	±10%	0.8+0.15, -0.1	C1608JB1C684K	C1608X5R1C684K	C1608X7R1C684K
	±20%	0.8+0.15, -0.1	C1608JB1C684M	C1608X5R1C684M	C1608X7R1C684M
1,000,000	±10%	0.8+0.15, -0.1	C1608JB1C105K	C1608X5R1C105K	C1608X7R1C105K
	±20%	0.8+0.15, -0.1	C1608JB1C105M	C1608X5R1C105M	C1608X7R1C105M

TEMPERATURE CHARACTERISTICS: JB(±10%), X5R(±15%)

RATED VOLTAGE Edc: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
470,000	±10%	0.8+0.15, -0.1	C1608JB1E474K	C1608X5R1E474K
	±20%	0.8+0.15, -0.1	C1608JB1E474M	C1608X5R1E474M
680,000	±10%	0.8+0.15, -0.1	C1608JB1E684K	C1608X5R1E684K
	±20%	0.8+0.15, -0.1	C1608JB1E684M	C1608X5R1E684M
1,000,000	±10%	0.8+0.15, -0.1	C1608JB1E105K	C1608X5R1E105K
	±20%	0.8+0.15, -0.1	C1608JB1E105M	C1608X5R1E105M

RATED VOLTAGE Edc: 6.3V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
1,500,000	±10%	0.8±0.10	C1608JB0J155K	C1608X5R0J155K
	±20%	0.8±0.10	C1608JB0J155M	C1608X5R0J155M
2,200,000	±10%	0.8±0.10	C1608JB0J225K	C1608X5R0J225K
	±20%	0.8±0.10	C1608JB0J225M	C1608X5R0J225M
3,300,000	±10%	0.8±0.10	C1608JB0J335K	C1608X5R0J335K
	±20%	0.8±0.10	C1608JB0J335M	C1608X5R0J335M
4,700,000	±10%	0.8±0.10	C1608JB0J475K	C1608X5R0J475K
	±20%	0.8±0.10	C1608JB0J475M	C1608X5R0J475M
6,800,000	±10%	0.8+0.15, -0.1	C1608JB0J685K	C1608X5R0J685K
	±20%	0.8+0.15, -0.1	C1608JB0J685M	C1608X5R0J685M
10,000,000	±20%	0.8+0.15, -0.1	C1608JB0J106M	C1608X5R0J106M

TEMPERATURE CHARACTERISTICS: JF(+30, -80%), Y5V(+22, -82%)

RATED VOLTAGE Edc: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
100,000	+80,-20%	0.8±0.10	C1608JF1H104Z	C1608Y5V1H104Z
220,000	+80,-20%	0.8±0.10	C1608JF1H224Z	C1608Y5V1H224Z
470,000	+80,-20%	0.8±0.10	C1608JF1H474Z	C1608Y5V1H474Z

RATED VOLTAGE Edc: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: JF	Temperature characteristics: Y5V
1,000,000	+80,-20%	0.8±0.10	C1608JF1E105Z	C1608Y5V1E105Z

RATED VOLTAGE Edc: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: JF	Temperature characteristics: Y5V
2,200,000	+80,-20%	0.8±0.10	C1608JF1C225Z	C1608Y5V1C225Z

RATED VOLTAGE Edc: 6.3V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: JF	Temperature characteristics: Y5V
4,700,000	+80,-20%	0.8±0.10	C1608JF0J475Z	C1608Y5V0J475Z
10,000,000	+80,-20%	0.8+0.15,-0.10	C1608JF0J106Z	C1608Y5V0J106Z

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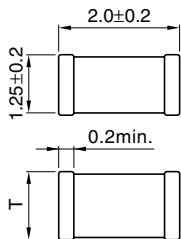
C Series C2012 (EIA CC0805) Type

Conformity to RoHS Directive

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.

SHAPES AND DIMENSIONS



Dimensions in mm



PRODUCT IDENTIFICATION

C	2012	CH	1H	103	J	□
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Series name

(2) Dimensions L×W

2012	2.0×1.25mm
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(3) Capacitance temperature characteristics

Class 1 (Temperature compensation)

Temperature characteristics	Capacitance change	Temperature range
CH	0±60ppm/°C	-25 to +85°C
C0G	0±30ppm/°C	-55 to +125°C

Class 2 (Temperature stable and general purpose)

Temperature characteristics	Capacitance change	Temperature range
JB	±10%	-25 to +85°C
JF	+30, -80%	-25 to +85°C
X7R	±15%	-55 to +125°C
X5R	±15%	-55 to +85°C
Y5V	+22, -82%	-30 to +85°C

(4) Rated voltage E_{dc}

0J	6.3V
1A	10V
1C	16V
1E	25V
1H	50V

(5) Nominal capacitance

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.

010	1pF
100	10pF
102	1,000pF

(6) Capacitance tolerance

J	±5%
K	±10%
M	±20%
Z	+80, -20%

(7) Packaging style

T	Taping (reel)
B	Bulk

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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

CAPACITANCE RANGES: CLASS 1 (TEMPERATURE COMPENSATION)**TEMPERATURE CHARACTERISTICS: CH(0±60ppm/°C), C0G(0±30ppm/°C)**RATED VOLTAGE E_{dc}: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
3,300	±5%	0.60±0.10	C2012CH1H332J	C2012C0G1H332J
4,700	±5%	0.85±0.10	C2012CH1H472J	C2012C0G1H472J
6,800	±5%	1.25±0.10	C2012CH1H682J	C2012C0G1H682J
10,000	±5%	1.25±0.10	C2012CH1H103J	C2012C0G1H103J

CAPACITANCE RANGES: CLASS 2**TEMPERATURE CHARACTERISTICS: JB(±10%), X5R/X7R(±15%)**RATED VOLTAGE E_{dc}: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
150,000	±10%	1.25±0.10	C2012JB1H154K	C2012X5R1H154K	C2012X7R1H154K
	±20%	1.25±0.10	C2012JB1H154M	C2012X5R1H154M	C2012X7R1H154M
220,000	±10%	1.25±0.10	C2012JB1H224K	C2012X5R1H224K	C2012X7R1H224K
	±20%	1.25±0.10	C2012JB1H224M	C2012X5R1H224M	C2012X7R1H224M
330,000	±10%	1.25±0.10	C2012JB1H334K	C2012X5R1H334K	C2012X7R1H334K
	±20%	1.25±0.10	C2012JB1H334M	C2012X5R1H334M	C2012X7R1H334M

RATED VOLTAGE E_{dc}: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
470,000	±10%	1.25±0.10	C2012JB1E474K	C2012X5R1E474K	C2012X7R1E474K
	±20%	1.25±0.10	C2012JB1E474M	C2012X5R1E474M	C2012X7R1E474M
680,000	±10%	1.25±0.10	C2012JB1E684K	C2012X5R1E684K	C2012X7R1E684K
	±20%	1.25±0.10	C2012JB1E684M	C2012X5R1E684M	C2012X7R1E684M
1,000,000	±10%	1.25±0.10	C2012JB1E105K	C2012X5R1E105K	C2012X7R1E105K
	±20%	1.25±0.10	C2012JB1E105M	C2012X5R1E105M	C2012X7R1E105M

RATED VOLTAGE E_{dc}: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
330,000	±10%	0.85±0.10	C2012JB1C334K	C2012X5R1C334K	C2012X7R1C334K
	±20%	0.85±0.10	C2012JB1C334M	C2012X5R1C334M	C2012X7R1C334M
1,500,000	±10%	1.25±0.10	C2012JB1C155K	C2012X5R1C155K	C2012X7R1C155K
	±20%	1.25±0.10	C2012JB1C155M	C2012X5R1C155M	C2012X7R1C155M
2,200,000	±10%	1.25±0.10	C2012JB1C225K	C2012X5R1C225K	C2012X7R1C225K
	±20%	1.25±0.10	C2012JB1C225M	C2012X5R1C225M	C2012X7R1C225M

TEMPERATURE CHARACTERISTICS: JB(±10%), X5R(±15%)RATED VOLTAGE E_{dc}: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
150,000	±10%	0.85±0.10	C2012JB1H154K	C2012X5R1H154K
	±20%	0.85±0.10	C2012JB1H154M	C2012X5R1H154M
220,000	±10%	0.85+0.15,-0.10	C2012JB1H224K	C2012X5R1H224K
	±20%	0.85+0.15,-0.10	C2012JB1H224M	C2012X5R1H224M

RATED VOLTAGE Edc: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
150,000	±10%	0.6±0.10	C2012JB1E154K	C2012X5R1E154K
	±20%	0.6±0.10	C2012JB1E154M	C2012X5R1E154M
220,000	±10%	0.6±0.10	C2012JB1E224K	C2012X5R1E224K
	±20%	0.6±0.10	C2012JB1E224M	C2012X5R1E224M
330,000	±10%	0.8+0.15,-0.10	C2012JB1E334K	C2012X5R1E334K
	±20%	0.8+0.15,-0.10	C2012JB1E334M	C2012X5R1E334M
470,000	±10%	0.8+0.15,-0.10	C2012JB1E474K	C2012X5R1E474K
	±20%	0.8+0.15,-0.10	C2012JB1E474M	C2012X5R1E474M
1,000,000	±10%	1.25±0.10	C2012JB1E105K	C2012X5R1E105K
	±20%	1.25±0.10	C2012JB1E105M	C2012X5R1E105M
1,500,000	±10%	1.25±0.10	C2012JB1E155K	C2012X5R1E155K
	±20%	1.25±0.10	C2012JB1E155M	C2012X5R1E155M
2,200,000	±10%	1.25±0.10	C2012JB1E225K	C2012X5R1E225K
	±20%	1.25±0.10	C2012JB1E225M	C2012X5R1E225M

RATED VOLTAGE Edc: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
330,000	±10%	0.6±0.10	C2012JB1C334K	C2012X5R1C334K
	±20%	0.6±0.10	C2012JB1C334M	C2012X5R1C334M
470,000	±10%	0.6±0.10	C2012JB1C474K	C2012X5R1C474K
	±20%	0.6±0.10	C2012JB1C474M	C2012X5R1C474M
680,000	±10%	0.8+0.15,-0.10	C2012JB1C684K	C2012X5R1C684K
	±20%	0.8+0.15,-0.10	C2012JB1C684M	C2012X5R1C684M
1,000,000	±10%	0.8+0.15,-0.10	C2012JB1C105K	C2012X5R1C105K
	±20%	0.8+0.15,-0.10	C2012JB1C105M	C2012X5R1C105M
3,300,000	±10%	1.25±0.20	C2012JB1C335K	C2012X5R1C335K
	±20%	1.25±0.20	C2012JB1C335M	C2012X5R1C335M
4,700,000	±10%	1.25±0.20	C2012JB1C475K	C2012X5R1C475K
	±20%	1.25±0.20	C2012JB1C475M	C2012X5R1C475M
6,800,000	±10%	1.25±0.10	C2012JB1C685K	C2012X5R1C685K
	±20%	1.25±0.10	C2012JB1C685M	C2012X5R1C685M
10,000,000	±10%	1.25±0.10	C2012JB1C106K	C2012X5R1C106K
	±20%	1.25±0.10	C2012JB1C106M	C2012X5R1C106M

RATED VOLTAGE Edc: 10V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
680,000	±10%	0.6±0.10	C2012JB1A684K	C2012X5R1A684K
	±20%	0.6±0.10	C2012JB1A684M	C2012X5R1A684M
1,000,000	±10%	0.85±0.10	C2012JB1A105K	C2012X5R1A105K
	±20%	0.85±0.10	C2012JB1A105M	C2012X5R1A105M
1,500,000	±10%	0.85±0.10	C2012JB1A155K	C2012X5R1A155K
	±20%	0.85±0.10	C2012JB1A155M	C2012X5R1A155M
2,200,000	±10%	0.8+0.15,-0.10	C2012JB1A225K	C2012X5R1A225K
	±20%	0.8+0.15,-0.10	C2012JB1A225M	C2012X5R1A225M
3,300,000	±10%	1.25±0.10	C2012JB1A335K	C2012X5R1A335K
	±20%	1.25±0.10	C2012JB1A335M	C2012X5R1A335M
4,700,000	±10%	1.25±0.10	C2012JB1A475K	C2012X5R1A475K
	±20%	1.25±0.10	C2012JB1A475M	C2012X5R1A475M
6,800,000	±10%	1.25±0.10	C2012JB1A685K	C2012X5R1A685K
	±20%	1.25±0.10	C2012JB1A685M	C2012X5R1A685M
10,000,000	±10%	1.25±0.10	C2012JB1A106K	C2012X5R1A106K
	±20%	1.25±0.10	C2012JB1A106M	C2012X5R1A106M
15,000,000	±10%	1.25±0.10	C2012JB1A156K	C2012X5R1A156K
	±20%	1.25±0.10	C2012JB1A156M	C2012X5R1A156M
22,000,000	±10%	1.25±0.10	C2012JB1A226K	C2012X5R1A226K
	±20%	1.25±0.10	C2012JB1A226M	C2012X5R1A226M

RATED VOLTAGE Edc: 6.3V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
1,000,000	±10%	0.6±0.10	C2012JB0J105K	C2012X5R0J105K
	±20%	0.6±0.10	C2012JB0J105M	C2012X5R0J105M
3,300,000	±10%	0.85+0.15,-0.10	C2012JB0J335K	C2012X5R0J335K
	±20%	0.85+0.15,-0.10	C2012JB0J335M	C2012X5R0J335M
4,700,000	±10%	0.85+0.15,-0.10	C2012JB0J475K	C2012X5R0J475K
	±20%	0.85+0.15,-0.10	C2012JB0J475M	C2012X5R0J475M
6,800,000	±10%	1.25±0.20	C2012JB0J685K	C2012X5R0J685K
	±20%	1.25±0.20	C2012JB0J685M	C2012X5R0J685M
10,000,000	±10%	1.25±0.20	C2012JB0J106K	C2012X5R0J106K
	±20%	1.25±0.20	C2012JB0J106M	C2012X5R0J106M
15,000,000	±20%	1.25±0.20	C2012JB0J156M	C2012X5R0J156M
22,000,000	±20%	1.25±0.20	C2012JB0J226M	C2012X5R0J226M

TEMPERATURE CHARACTERISTICS: X5R/X7R(±15%)
RATED VOLTAGE Edc: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: X5R	Temperature characteristics: X7R
680,000	±10%	1.25±0.10	C2012X5R1E684K	C2012X7R1E684K
	±20%	1.25±0.10	C2012X5R1E684M	C2012X7R1E684M
1,000,000	±10%	1.25±0.10	C2012X5R1E105K	C2012X7R1E105K
	±20%	1.25±0.10	C2012X5R1E105M	C2012X7R1E105M
1,500,000	±10%	1.25±0.20	C2012X5R1E155K	C2012X7R1E155K
	±20%	1.25±0.20	C2012X5R1E155M	C2012X7R1E155M

RATED VOLTAGE Edc: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: X5R	Temperature characteristics: X7R
1,000,000	±10%	0.85±0.10	C2012X5R1C105K	C2012X7R1C105K
	±20%	0.85±0.10	C2012X5R1C105M	C2012X7R1C105M
1,500,000	±10%	1.25±0.10	C2012X5R1C155K	C2012X7R1C155K
	±20%	1.25±0.10	C2012X5R1C155M	C2012X7R1C155M
2,200,000	±10%	1.25±0.20	C2012X5R1C225K	C2012X7R1C225K
	±20%	1.25±0.20	C2012X5R1C225M	C2012X7R1C225M

TEMPERATURE CHARACTERISTICS: X5R(±15%)
RATED VOLTAGE Edc: 6.3V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.
			Temperature characteristics: X5R
4,700,000	±10%	0.85±0.10	C2012X5R0J475K
	±20%	0.85±0.10	C2012X5R0J475M
15,000,000	±20%	0.85+0.15,-0.10	C2012X5R0J156M

TEMPERATURE CHARACTERISTICS: JF(+30, -80%), Y5V(+22, -82%)
RATED VOLTAGE E_{dc}: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
1,000,000	+80,-20%	0.85±0.10	C2012JF1H105Z	C2012Y5V1H105Z
2,200,000	+80,-20%	1.25±0.20	C2012JF1H225Z	C2012Y5V1H225Z

RATED VOLTAGE E_{dc}: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
4,700,000	+80,-20%	1.25±0.20	C2012JF1E475Z	C2012Y5V1E475Z

RATED VOLTAGE E_{dc}: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
10,000,000	+80,-20%	1.25±0.20	C2012JF1C106Z	C2012Y5V1C106Z

RATED VOLTAGE E_{dc}: 6.3V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
22,000,000	+80,-20%	1.25±0.20	C2012JF0J226Z	C2012Y5V0J226Z

- For more information about the products of other capacitance or data, please contact us.

- All specifications are subject to change without notice.
Please read the precautions before using this catalog.

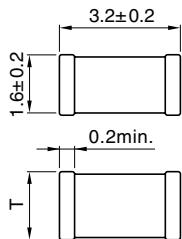
C Series C3216 (EIA CC1206) Type

Conformity to RoHS Directive

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.

SHAPES AND DIMENSIONS



Dimensions in mm



PRODUCT IDENTIFICATION

C 3216 CH 1H 103 J □
(1) (2) (3) (4) (5) (6) (7)

(1) Series name

(2) Dimensions L×W

3216	3.2×1.6mm
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(3) Capacitance temperature characteristics

Class 1 (Temperature compensation)

Temperature characteristics	Capacitance change	Temperature range
CH	0±60ppm/°C	-25 to +85°C
C0G	0±30ppm/°C	-55 to +125°C

Class 2 (Temperature stable and general purpose)

Temperature characteristics	Capacitance change	Temperature range
JB	±10%	-25 to +85°C
JF	+30, -80%	-25 to +85°C
X7R	±15%	-55 to +125°C
X5R	±15%	-55 to +85°C
Y5V	+22, -82%	-30 to +85°C

(4) Rated voltage E_{dc}

0J	6.3V
1A	10V
1C	16V
1E	25V
1H	50V

(5) Nominal capacitance

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.

010	1pF
100	10pF
102	1,000pF

(6) Capacitance tolerance

J	±5%
K	±10%
M	±20%
Z	+80, -20%

(7) Packaging style

T	Taping (reel)
B	Bulk

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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

CAPACITANCE RANGES: CLASS 1 (TEMPERATURE COMPENSATION)
TEMPERATURE CHARACTERISTICS: CH(0±60ppm/°C), C0G(0±30ppm/°C)

 RATED VOLTAGE E_{dc}: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
4,700	±5%	0.60±0.10	C3216CH1H472J	C3216C0G1H472J
6,800	±5%	0.60±0.10	C3216CH1H682J	C3216C0G1H682J
10,000	±5%	0.85±0.10	C3216CH1H103J	C3216C0G1H103J
15,000	±5%	1.15±0.10	C3216CH1H153J	C3216C0G1H153J
22,000	±5%	1.15±0.10	C3216CH1H223J	C3216C0G1H223J
33,000	±5%	1.60±0.20	C3216CH1H333J	C3216C0G1H333J

CAPACITANCE RANGES: CLASS 2
TEMPERATURE CHARACTERISTICS: JB(±10%), X5R/X7R(±15%)

 RATED VOLTAGE E_{dc}: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
470,000	±10%	1.6±0.15	C3216JB1H474K	C3216X5R1H474K	C3216X7R1H474K
	±20%	1.6±0.15	C3216JB1H474M	C3216X5R1H474M	C3216X7R1H474M
680,000	±10%	1.6±0.15	C3216JB1H684K	C3216X5R1H684K	C3216X7R1H684K
	±20%	1.6±0.15	C3216JB1H684M	C3216X5R1H684M	C3216X7R1H684M
1,000,000	±10%	1.6±0.15	C3216JB1H105K	C3216X5R1H105K	C3216X7R1H105K
	±20%	1.6±0.15	C3216JB1H105M	C3216X5R1H105M	C3216X7R1H105M

 RATED VOLTAGE E_{dc}: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
1,500,000	±10%	1.6±0.15	C3216JB1E155K	C3216X5R1E155K	C3216X7R1E155K
	±20%	1.6±0.15	C3216JB1E155M	C3216X5R1E155M	C3216X7R1E155M
2,200,000	±10%	1.6±0.15	C3216JB1E225K	C3216X5R1E225K	C3216X7R1E225K
	±20%	1.6±0.15	C3216JB1E225M	C3216X5R1E225M	C3216X7R1E225M
3,300,000	±10%	1.6±0.15	C3216JB1E335K	C3216X5R1E335K	C3216X7R1E335K
	±20%	1.6±0.15	C3216JB1E335M	C3216X5R1E335M	C3216X7R1E335M
4,700,000	±10%	1.6±0.15	C3216JB1E475K	C3216X5R1E475K	C3216X7R1E475K
	±20%	1.6±0.15	C3216JB1E475M	C3216X5R1E475M	C3216X7R1E475M

 RATED VOLTAGE E_{dc}: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
2,200,000	±10%	1.15±0.15	C3216JB1C225K	C3216X5R1C225K	C3216X7R1C225K
	±20%	1.15±0.15	C3216JB1C225M	C3216X5R1C225M	C3216X7R1C225M
3,300,000	±10%	0.85±0.15	C3216JB1C335K	C3216X5R1C335K	C3216X7R1C335K
	±20%	0.85±0.15	C3216JB1C335M	C3216X5R1C335M	C3216X7R1C335M
4,700,000	±10%	1.15±0.15	C3216JB1C475K	C3216X5R1C475K	C3216X7R1C475K
	±20%	1.15±0.15	C3216JB1C475M	C3216X5R1C475M	C3216X7R1C475M
6,800,000	±10%	1.6±0.15	C3216JB1C685K	C3216X5R1C685K	C3216X7R1C685K
	±20%	1.6±0.15	C3216JB1C685M	C3216X5R1C685M	C3216X7R1C685M
10,000,000	±10%	1.6±0.15	C3216JB1C106K	C3216X5R1C106K	C3216X7R1C106K
	±20%	1.6±0.15	C3216JB1C106M	C3216X5R1C106M	C3216X7R1C106M

TEMPERATURE CHARACTERISTICS: JB($\pm 10\%$), X5R($\pm 15\%$)
RATED VOLTAGE E_{dc}: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
470,000	$\pm 10\%$	0.85 \pm 0.10	C3216JB1H474K	C3216X5R1H474K
	$\pm 20\%$	0.85 \pm 0.10	C3216JB1H474M	C3216X5R1H474M

RATED VOLTAGE E_{dc}: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
1,000,000	$\pm 10\%$	0.85+0.15,-0.10	C3216JB1E105K	C3216X5R1E105K
	$\pm 20\%$	0.85+0.15,-0.10	C3216JB1E105M	C3216X5R1E105M
1,500,000	$\pm 10\%$	0.85+0.15,-0.10	C3216JB1E155K	C3216X5R1E155K
	$\pm 20\%$	0.85+0.15,-0.10	C3216JB1E155M	C3216X5R1E155M
3,300,000	$\pm 10\%$	0.85+0.15,-0.10	C3216JB1E335K	C3216X5R1E335K
	$\pm 20\%$	0.85+0.15,-0.10	C3216JB1E335M	C3216X5R1E335M

RATED VOLTAGE E_{dc}: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
1,000,000	$\pm 10\%$	0.85 \pm 0.10	C3216JB1C105K	C3216X5R1C105K
	$\pm 20\%$	0.85 \pm 0.10	C3216JB1C105M	C3216X5R1C105M
1,500,000	$\pm 10\%$	0.85 \pm 0.10	C3216JB1C155K	C3216X5R1C155K
	$\pm 20\%$	0.85 \pm 0.10	C3216JB1C155M	C3216X5R1C155M

RATED VOLTAGE E_{dc}: 10V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
2,200,000	$\pm 10\%$	0.85 \pm 0.10	C3216JB1A225K	C3216X5R1A225K
	$\pm 20\%$	0.85 \pm 0.10	C3216JB1A225M	C3216X5R1A225M
3,300,000	$\pm 10\%$	0.85+0.15,-0.10	C3216JB1A335K	C3216X5R1A335K
	$\pm 20\%$	0.85+0.15,-0.10	C3216JB1A335M	C3216X5R1A335M

RATED VOLTAGE E_{dc}: 6.3V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
10,000,000	$\pm 10\%$	1.6 \pm 0.15	C3216JB0J106K	C3216X5R0J106K
	$\pm 20\%$	1.6 \pm 0.15	C3216JB0J106M	C3216X5R0J106M
15,000,000	$\pm 20\%$	1.6 \pm 0.15	C3216JB0J156M	C3216X5R0J156M
22,000,000	$\pm 20\%$	0.85 \pm 0.10	C3216JB0J226M	C3216X5R0J226M
33,000,000	$\pm 20\%$	1.30 \pm 0.15	C3216JB0J336M	C3216X5R0J336M
47,000,000	$\pm 20\%$	1.6 \pm 0.15	C3216JB0J476M	C3216X5R0J476M

TEMPERATURE CHARACTERISTICS: X5R/X7R($\pm 15\%$)

RATED VOLTAGE Edc: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: X5R	Temperature characteristics: X7R
3,300,000	$\pm 10\%$	1.15 \pm 0.15	C3216X5R1C335K	C3216X7R1C335K
	$\pm 20\%$	1.15 \pm 0.15	C3216X5R1C335M	C3216X7R1C335M
4,700,000	$\pm 10\%$	1.6 \pm 0.15	C3216X5R1C475K	C3216X7R1C475K
	$\pm 20\%$	1.6 \pm 0.15	C3216X5R1C475M	C3216X7R1C475M

TEMPERATURE CHARACTERISTICS: X5R($\pm 15\%$)

RATED VOLTAGE Edc: 6.3V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: X5R	
15,000,000	$\pm 20\%$	1.6 \pm 0.15	C3216X5R0J156M	

TEMPERATURE CHARACTERISTICS: JF(+30, -80%), Y5V(+22, -82%)

RATED VOLTAGE Edc: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
4,700,000	+80, -20%	1.6 \pm 0.15	C3216JF1H475Z	C3216Y5V1H475Z

RATED VOLTAGE Edc: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
10,000,000	+80, -20%	1.6 \pm 0.15	C3216JF1E106Z	C3216Y5V1E106Z

RATED VOLTAGE Edc: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
22,000,000	+80, -20%	1.6 \pm 0.20	C3216JF1C226Z	C3216Y5V1C226Z

RATED VOLTAGE Edc: 6.3V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
47,000,000	+80, -20%	1.6 \pm 0.15	C3216JF0J476Z	C3216Y5V0J476Z

- For more information about the products of other capacitance or data, please contact us.

- All specifications are subject to change without notice.

Please read the precautions before using this catalog.

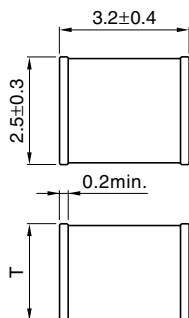
C Series C3225(EIA CC1210) Type

Conformity to RoHS Directive

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.

SHAPES AND DIMENSIONS



Dimensions in mm



PRODUCT IDENTIFICATION

C 3225 CH 1H 104 J □
(1) (2) (3) (4) (5) (6) (7)

(1) Series name

(2) Dimensions L×W

3225	3.2×2.5mm
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(3) Capacitance temperature characteristics

Class 1 (Temperature compensation)

Temperature characteristics	Capacitance change	Temperature range
CH	0±60ppm/°C	-25 to +85°C
C0G	0±30ppm/°C	-55 to +125°C

Class 2 (Temperature stable and general purpose)

Temperature characteristics	Capacitance change	Temperature range
JB	±10%	-25 to +85°C
JF	+30, -80%	-25 to +85°C
X7R	±15%	-55 to +125°C
X5R	±15%	-55 to +85°C
Y5V	+22, -82%	-30 to +85°C

(4) Rated voltage E_{dc}

0J	6.3V
1A	10V
1C	16V
1E	25V
1H	50V

(5) Nominal capacitance

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.

010	1pF
100	10pF
102	1,000pF

(6) Capacitance tolerance

J	±5%
K	±10%
M	±20%
Z	+80, -20%

(7) Packaging style

T	Taping (reel)
B	Bulk

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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

CAPACITANCE RANGES: CLASS 1 (TEMPERATURE COMPENSATION)**TEMPERATURE CHARACTERISTICS: CH(0±60ppm/°C), C0G(0±30ppm/°C)**RATED VOLTAGE E_{dc}: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
22,000	±5%	1.25±0.20	C3225CH1H223J	C3225C0G1H223J
33,000	±5%	1.6±0.20	C3225CH1H333J	C3225C0G1H333J
47,000	±5%	2.0±0.20	C3225CH1H473J	C3225C0G1H473J
68,000	±5%	2.0±0.20	C3225CH1H683J	C3225C0G1H683J
100,000	±5%	2.5±0.30	C3225CH1H104J	C3225C0G1H104J

CAPACITANCE RANGES: CLASS 2**TEMPERATURE CHARACTERISTICS: JB(±10%), X5R/X7R(±15%)**RATED VOLTAGE E_{dc}: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
470,000	±10%	1.15±0.10	C3225JB1H474K	C3225X5R1H474K	C3225X7R1H474K
	±20%	1.15±0.10	C3225JB1H474M	C3225X5R1H474M	C3225X7R1H474M
1,000,000	±10%	1.6±0.15	C3225JB1H105K	C3225X5R1H105K	C3225X7R1H105K
	±20%	1.6±0.15	C3225JB1H105M	C3225X5R1H105M	C3225X7R1H105M
1,500,000	±10%	2.0±0.20	C3225JB1H155K	C3225X5R1H155K	C3225X7R1H155K
	±20%	2.0±0.20	C3225JB1H155M	C3225X5R1H155M	C3225X7R1H155M
2,200,000	±10%	2.0±0.20	C3225JB1H225K	C3225X5R1H225K	C3225X7R1H225K
	±20%	2.0±0.20	C3225JB1H225M	C3225X5R1H225M	C3225X7R1H225M
3,300,000	±10%	2.5±0.20	C3225JB1H335K	C3225X5R1H335K	C3225X7R1H335K
	±20%	2.5±0.20	C3225JB1H335M	C3225X5R1H335M	C3225X7R1H335M

RATED VOLTAGE E_{dc}: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
1,500,000	±10%	1.15±0.10	C3225JB1E155K	C3225X5R1E155K	C3225X7R1E155K
	±20%	1.15±0.10	C3225JB1E155M	C3225X5R1E155M	C3225X7R1E155M
2,200,000	±10%	1.15±0.10	C3225JB1E225K	C3225X5R1E225K	C3225X7R1E225K
	±20%	1.15±0.10	C3225JB1E225M	C3225X5R1E225M	C3225X7R1E225M
3,300,000	±10%	1.6±0.15	C3225JB1E335K	C3225X5R1E335K	C3225X7R1E335K
	±20%	1.6±0.15	C3225JB1E335M	C3225X5R1E335M	C3225X7R1E335M
4,700,000	±10%	2.0±0.20	C3225JB1E475K	C3225X5R1E475K	C3225X7R1E475K
	±20%	2.0±0.20	C3225JB1E475M	C3225X5R1E475M	C3225X7R1E475M
6,800,000	±10%	2.0±0.20	C3225JB1E685K	C3225X5R1E685K	C3225X7R1E685K
	±20%	2.0±0.20	C3225JB1E685M	C3225X5R1E685M	C3225X7R1E685M
10,000,000	±10%	2.5±0.20	C3225JB1E106K	C3225X5R1E106K	C3225X7R1E106K
	±20%	2.5±0.20	C3225JB1E106M	C3225X5R1E106M	C3225X7R1E106M

RATED VOLTAGE E_{dc}: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
15,000,000	±20%	2.5±0.20	C3225JB1C156M	C3225X5R1C156M	C3225X7R1C156M
22,000,000	±20%	2.5±0.20	C3225JB1C226M	C3225X5R1C226M	C3225X7R1C226M

TEMPERATURE CHARACTERISTICS: JB($\pm 10\%$), X5R($\pm 15\%$)
RATED VOLTAGE E_{dc}: 10V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
15,000,000	$\pm 20\%$	2.3 \pm 0.20	C3225JB1A156M	C3225X5R1A156M
22,000,000	$\pm 20\%$	2.3 \pm 0.20	C3225JB1A226M	C3225X5R1A226M
33,000,000	$\pm 20\%$	2.0 \pm 0.20	C3225JB1A336M	C3225X5R1A336M
47,000,000	$\pm 20\%$	2.5 \pm 0.20	C3225JB1A476M	C3225X5R1A476M

RATED VOLTAGE E_{dc}: 6.3V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JB	Temperature characteristics: X5R
68,000,000	$\pm 20\%$	2.0 \pm 0.20	C3225JB0J686M	C3225X5R0J686M
100,000,000	$\pm 20\%$	2.5 \pm 0.40	C3225JB0J107M	C3225X5R0J107M

TEMPERATURE CHARACTERISTICS: X5R/X7R($\pm 15\%$)
RATED VOLTAGE E_{dc}: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: X5R	Temperature characteristics: X7R
2,200,000	$\pm 10\%$	2.0 \pm 0.20	C3225X5R1H225K	C3225X7R1H225K
	$\pm 20\%$	2.0 \pm 0.20	C3225X5R1H225M	C3225X7R1H225M
3,300,000	$\pm 10\%$	2.5 \pm 0.30	C3225X5R1H335K	C3225X7R1H335K
	$\pm 20\%$	2.5 \pm 0.30	C3225X5R1H335M	C3225X7R1H335M

RATED VOLTAGE E_{dc}: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: X5R	Temperature characteristics: X7R
6,800,000	$\pm 10\%$	2.5 \pm 0.20	C3225X5R1E685K	C3225X7R1E685K
	$\pm 20\%$	2.5 \pm 0.20	C3225X5R1E685M	C3225X7R1E685M
10,000,000	$\pm 10\%$	2.5 \pm 0.30	C3225X5R1E106K	C3225X7R1E106K
	$\pm 20\%$	2.5 \pm 0.30	C3225X5R1E106M	C3225X7R1E106M

RATED VOLTAGE E_{dc}: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: X5R	Temperature characteristics: X7R
10,000,000	$\pm 10\%$	2.0 \pm 0.20	C3225X5R1C106K	C3225X7R1C106K
	$\pm 20\%$	2.0 \pm 0.20	C3225X5R1C106M	C3225X7R1C106M
15,000,000	$\pm 20\%$	2.5 \pm 0.30	C3225X5R1C156M	C3225X7R1C156M
22,000,000	$\pm 20\%$	2.5 \pm 0.30	C3225X5R1C226M	C3225X7R1C226M

TEMPERATURE CHARACTERISTICS: X5R($\pm 15\%$)
RATED VOLTAGE E_{dc}: 10V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: X5R	
15,000,000	$\pm 20\%$	2.0 \pm 0.20	C3225X5R1A156M	
22,000,000	$\pm 20\%$	2.3 \pm 0.30	C3225X5R1A226M	

RATED VOLTAGE E_{dc}: 6.3V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: X5R	
22,000,000	$\pm 20\%$	1.6 \pm 0.15	C3225X5R0J226M	
33,000,000	$\pm 20\%$	2.0 \pm 0.20	C3225X5R0J336M	
47,000,000	$\pm 20\%$	2.5 \pm 0.40	C3225X5R0J476M	

TEMPERATURE CHARACTERISTICS: JF(+30, -80%), Y5V(+22, -82%)
RATED VOLTAGE Edc: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
4,700,000	+80,-20%	1.15±0.10	C3225JF1H475Z	C3225Y5V1H475Z
10,000,000	+80,-20%	1.6±0.15	C3225JF1H106Z	C3225Y5V1H106Z

RATED VOLTAGE Edc: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
10,000,000	+80,-20%	1.3±0.20	C3225JF1E106Z	C3225Y5V1E106Z
22,000,000	+80,-20%	2.0±0.20	C3225JF1E226Z	C3225Y5V1E226Z

RATED VOLTAGE Edc: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
22,000,000	+80,-20%	1.3±0.20	C3225JF1C226Z	C3225Y5V1C226Z
47,000,000	+80,-20%	2.3±0.20	C3225JF1C476Z	C3225Y5V1C476Z

RATED VOLTAGE Edc: 10V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
22,000,000	+80,-20%	1.15±0.10	C3225JF1A226Z	C3225Y5V1A226Z
47,000,000	+80,-20%	2.0±0.20	C3225JF1A476Z	C3225Y5V1A476Z

RATED VOLTAGE Edc: 6.3V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
100,000,000	+80,-20%	2.5±0.40	C3225JF0J107Z	C3225Y5V0J107Z

- For more information about the products of other capacitance or data, please contact us.

- All specifications are subject to change without notice.

Please read the precautions before using this catalog.

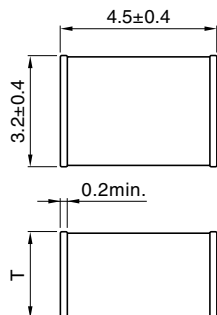
C Series C4532(EIA CC1812) Type

Conformity to RoHS Directive

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.

SHAPES AND DIMENSIONS



Dimensions in mm

PRODUCT IDENTIFICATION

C 4532 CH 1H 104 J □
(1) (2) (3) (4) (5) (6) (7)

(1) Series name

(2) Dimensions L×W

4532	4.5×3.2mm
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(3) Capacitance temperature characteristics

Class 1 (Temperature compensation)

Temperature characteristics	Capacitance change	Temperature range
CH	0±60ppm/°C	-25 to +85°C
C0G	0±30ppm/°C	-55 to +125°C

Class 2 (Temperature stable and general purpose)

Temperature characteristics	Capacitance change	Temperature range
JB	±10%	-25 to +85°C
JF	+30, -80%	-25 to +85°C
X7R	±15%	-55 to +125°C
X5R	±15%	-55 to +85°C
Y5V	+22, -82%	-30 to +85°C

(4) Rated voltage E_{dc}

1A	10V
1C	16V
1E	25V
1H	50V

(5) Nominal capacitance

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.

010	1pF
100	10pF
102	1,000pF

(6) Capacitance tolerance

J	±5%
K	±10%
M	±20%
Z	+80, -20%

(7) Packaging style

T	Taping (reel)
B	Bulk

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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CAPACITANCE RANGES: CLASS 1 (TEMPERATURE COMPENSATION)**TEMPERATURE CHARACTERISTICS: CH(0±60ppm/°C), C0G(0±30ppm/°C)**RATED VOLTAGE E_{dc}: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
47,000	±5%	1.6±0.15	C4532CH1H473J	C4532C0G1H473J
68,000	±5%	1.6±0.15	C4532CH1H683J	C4532C0G1H683J
100,000	±5%	2.0±0.2	C4532CH1H104J	C4532C0G1H104J
150,000	±5%	2.5±0.3	C4532CH1H154J	C4532C0G1H154J
220,000	±5%	3.2±0.3	C4532CH1H224J	C4532C0G1H224J

CAPACITANCE RANGES: CLASS 2**TEMPERATURE CHARACTERISTICS: JB(±10%), X5R/X7R(±15%)**RATED VOLTAGE E_{dc}: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
1,500,000	±10%	1.6±0.15	C4532JB1H155K	C4532X5R1H155K	C4532X7R1H155K
	±20%	1.6±0.15	C4532JB1H155M	C4532X5R1H155M	C4532X7R1H155M
2,200,000	±10%	1.6±0.15	C4532JB1H225K	C4532X5R1H225K	C4532X7R1H225K
	±20%	1.6±0.15	C4532JB1H225M	C4532X5R1H225M	C4532X7R1H225M
3,300,000	±10%	2.0±0.20	C4532JB1H335K	C4532X5R1H335K	C4532X7R1H335K
	±20%	2.0±0.20	C4532JB1H335M	C4532X5R1H335M	C4532X7R1H335M
4,700,000	±10%	2.3±0.20	C4532JB1H475K	C4532X5R1H475K	C4532X7R1H475K
	±20%	2.3±0.20	C4532JB1H475M	C4532X5R1H475M	C4532X7R1H475M
6,800,000	±10%	2.5±0.30	C4532JB1H685K	C4532X5R1H685K	C4532X7R1H685K
	±20%	2.5±0.30	C4532JB1H685M	C4532X5R1H685M	C4532X7R1H685M

RATED VOLTAGE E_{dc}: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
10,000,000	±10%	2.5±0.30	C4532JB1E106K	C4532X5R1E106K	C4532X7R1E106K
	±20%	2.5±0.30	C4532JB1E106M	C4532X5R1E106M	C4532X7R1E106M
15,000,000	±20%	2.5±0.30	C4532JB1E156M	C4532X5R1E156M	C4532X7R1E156M
22,000,000	±20%	2.5±0.30	C4532JB1E226M	C4532X5R1E226M	C4532X7R1E226M

RATED VOLTAGE E_{dc}: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
22,000,000	±20%	2.0±0.20	C4532JB1C226M	C4532X5R1C226M	C4532X7R1C226M
33,000,000	±20%	2.5±0.30	C4532JB1C336M	C4532X5R1C336M	C4532X7R1C336M

TEMPERATURE CHARACTERISTICS: X5R/X7R(±15%)RATED VOLTAGE E_{dc}: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: X5R	Temperature characteristics: X7R
4,700,000	±10%	2.0±0.20	C4532X5R1H475K	C4532X7R1H475K
	±20%	2.0±0.20	C4532X5R1H475M	C4532X7R1H475M
6,800,000	±10%	2.5±0.30	C4532X5R1H685K	C4532X7R1H685K
	±20%	2.5±0.30	C4532X5R1H685M	C4532X7R1H685M

RATED VOLTAGE E_{dc}: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: X5R	Temperature characteristics: X7R
15,000,000	±20%	2.8±0.30	C4532X5R1E156M	C4532X7R1E156M
22,000,000	±20%	2.5±0.30	C4532X5R1E226M	C4532X7R1E226M

RATED VOLTAGE E_{dc}: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: X5R	Temperature characteristics: X7R
15,000,000	±20%	2.0±0.20	C4532X5R1C156M	C4532X7R1C156M

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TEMPERATURE CHARACTERISTICS: JF(+30, -80%), Y5V(+22, -82%)
RATED VOLTAGE Edc: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	Temperature characteristics: JF	Temperature characteristics: Y5V
10,000,000	+80,-20%	2.0±0.20	C4532JF1H106Z		C4532Y5V1H106Z

RATED VOLTAGE Edc: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	Temperature characteristics: JF	Temperature characteristics: Y5V
22,000,000	+80,-20%	2.0±0.20	C4532JF1E226Z		C4532Y5V1E226Z

RATED VOLTAGE Edc: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	Temperature characteristics: JF	Temperature characteristics: Y5V
47,000,000	+80,-20%	2.5±0.30	C4532JF1C476Z		C4532Y5V1C476Z

RATED VOLTAGE Edc: 10V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	Temperature characteristics: JF	Temperature characteristics: Y5V
100,000,000	+80,-20%	2.5±0.30	C4532JF1A107Z		C4532Y5V1A107Z

- For more information about the products of other capacitance or data, please contact us.

- All specifications are subject to change without notice.

Please read the precautions before using this catalog.

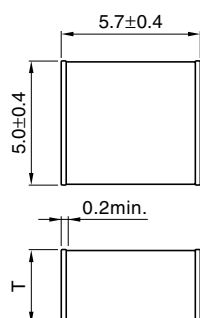
C Series C5750(EIA CC2220) Type

Conformity to RoHS Directive

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.

SHAPES AND DIMENSIONS



Dimensions in mm



PRODUCT IDENTIFICATION

C 5750 JB 1E 106 K □
(1) (2) (3) (4) (5) (6) (7)

(1) Series name

(2) Dimensions L×W

5750	5.7×5.0mm
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(3) Capacitance temperature characteristics

Class 2 (Temperature stable and general purpose)

Temperature characteristics	Capacitance change	Temperature range
JB	±10%	-25 to +85°C
JF	+30, -80%	-25 to +85°C
X7R	±15%	-55 to +125°C
X5R	±15%	-55 to +85°C
Y5V	+22, -82%	-30 to +85°C

(4) Rated voltage E_{dc}

1A	10V
1C	16V
1E	25V
1H	50V

(5) Nominal capacitance

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.

010	1pF
100	10pF
102	1,000pF

(6) Capacitance tolerance

K	±10%
M	±20%
Z	+80, -20%

(7) Packaging style

T	Taping (reel)
B	Bulk

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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

CAPACITANCE RANGES: CLASS 2**TEMPERATURE CHARACTERISTICS: JB($\pm 10\%$), X5R/X7R($\pm 15\%$)**RATED VOLTAGE E_{dc}: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
10,000,000	$\pm 10\%$	2.0 \pm 0.20	C5750JB1E106K	C5750X5R1E106K	C5750X7R1E106K
	$\pm 20\%$	2.0 \pm 0.20	C5750JB1E106M	C5750X5R1E106M	C5750X7R1E106M

TEMPERATURE CHARACTERISTICS: X5R/X7R($\pm 15\%$)RATED VOLTAGE E_{dc}: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: X5R	Temperature characteristics: X7R
10,000,000	$\pm 10\%$	2.3 \pm 0.20	C5750X5R1H106K	C5750X7R1H106K
	$\pm 20\%$	2.3 \pm 0.20	C5750X5R1H106M	C5750X7R1H106M

RATED VOLTAGE E_{dc}: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: X5R	Temperature characteristics: X7R
33,000,000	$\pm 20\%$	2.0 \pm 0.20	C5750X5R1C336M	C5750X7R1C336M
47,000,000	$\pm 20\%$	2.3 \pm 0.20	C5750X5R1C476M	C5750X7R1C476M

TEMPERATURE CHARACTERISTICS: X5R($\pm 15\%$)RATED VOLTAGE E_{dc}: 10V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.
			Temperature characteristics: X5R
68,000,000	$\pm 20\%$	2.3 \pm 0.20	C5750X5R1A686M

TEMPERATURE CHARACTERISTICS: JF(+30, -80%), Y5V(+22, -82%)RATED VOLTAGE E_{dc}: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
22,000,000	+80,-20%	2.0 \pm 0.20	C5750JF1H226Z	C5750Y5V1H226Z

RATED VOLTAGE E_{dc}: 25V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
47,000,000	+80,-20%	2.0 \pm 0.20	C5750JF1E476Z	C5750Y5V1E476Z

RATED VOLTAGE E_{dc}: 16V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: JF	Temperature characteristics: Y5V
100,000,000	+80,-20%	2.5 \pm 0.30	C5750JF1C107Z	C5750Y5V1C107Z

- For more information about the products of other capacitance or data, please contact us.

- All specifications are subject to change without notice.
Please read the precautions before using this catalog.

REMINDERS

Please read this before using the product.

SAFETY REMINDERS

REMINDERS

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8. The descriptions in this catalog apply as of April 2007.

Mid Voltage Multilayer Ceramic Chip Capacitors

C Series C1608 (EIA CC0603) Type

Conformity to RoHS Directive

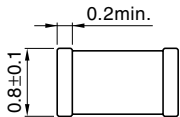
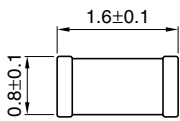
FEATURES

- The unique design structure for mid voltage enables a compact size with high voltage withstanding.
- Rated voltage Edc: 100 and 250V.

APPLICATIONS

Snubber circuits for switching power supply, ringer circuits for telephone and modem, or other general high voltage circuits.

SHAPES AND DIMENSIONS



Dimensions in mm



PRODUCT IDENTIFICATION

C	1608	CH	2E	101	K	□
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Series name

(2) Dimensions

1608	1.6×0.8mm
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(3) Capacitance temperature characteristics

Class 1 (Temperature compensation)

Temperature characteristics	Capacitance change	Temperature range
CH	0±60ppm/°C	-25 to +85°C
C0G	0±30ppm/°C	-55 to +125°C

Class 2 (Temperature stable and general purpose)

Temperature characteristics	Capacitance change	Temperature range
JB	±10%	-25 to +85°C
X7R	±15%	-55 to +125°C
X5R	±15%	-55 to +85°C

(4) Rated voltage Edc

2A	100V
2E	250V

(5) Nominal capacitance

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.

101	100pF
102	1,000pF
333	33,000pF

(6) Capacitance tolerance

K	±10%
M	±20%

(7) Packaging style

T	Taping (reel)
B	Bulk

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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CAPACITANCE RANGES: CLASS 1 (TEMPERATURE COMPENSATION)
TEMPERATURE CHARACTERISTICS: CH(0±60ppm/°C), C0G(0±30ppm/°C)

 RATED VOLTAGE E_{dc}: 250V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
100	±5%	0.80±0.10	C1608CH2E101J	C1608C0G2E101J
	±10%	0.80±0.10	C1608CH2E101K	C1608C0G2E101K
120	±5%	0.80±0.10	C1608CH2E121J	C1608C0G2E121J
	±10%	0.80±0.10	C1608CH2E121K	C1608C0G2E121K
150	±5%	0.80±0.10	C1608CH2E151J	C1608C0G2E151J
	±10%	0.80±0.10	C1608CH2E151K	C1608C0G2E151K
180	±5%	0.80±0.10	C1608CH2E181J	C1608C0G2E181J
	±10%	0.80±0.10	C1608CH2E181K	C1608C0G2E181K
220	±5%	0.80±0.10	C1608CH2E221J	C1608C0G2E221J
	±10%	0.80±0.10	C1608CH2E221K	C1608C0G2E221K
270	±5%	0.80±0.10	C1608CH2E271J	C1608C0G2E271J
	±10%	0.80±0.10	C1608CH2E271K	C1608C0G2E271K
330	±5%	0.80±0.10	C1608CH2E331J	C1608C0G2E331J
	±10%	0.80±0.10	C1608CH2E331K	C1608C0G2E331K
390	±5%	0.80±0.10	C1608CH2E391J	C1608C0G2E391J
	±10%	0.80±0.10	C1608CH2E391K	C1608C0G2E391K
470	±5%	0.80±0.10	C1608CH2E471J	C1608C0G2E471J
	±10%	0.80±0.10	C1608CH2E471K	C1608C0G2E471K
560	±5%	0.80±0.10	C1608CH2E561J	C1608C0G2E561J
	±10%	0.80±0.10	C1608CH2E561K	C1608C0G2E561K
680	±5%	0.80±0.10	C1608CH2E681J	C1608C0G2E681J
	±10%	0.80±0.10	C1608CH2E681K	C1608C0G2E681K

 RATED VOLTAGE E_{dc}: 100V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
100	±5%	0.80±0.10	C1608CH2A101J	C1608C0G2A101J
	±10%	0.80±0.10	C1608CH2A101K	C1608C0G2A101K
120	±5%	0.80±0.10	C1608CH2A121J	C1608C0G2A121J
	±10%	0.80±0.10	C1608CH2A121K	C1608C0G2A121K
150	±5%	0.80±0.10	C1608CH2A151J	C1608C0G2A151J
	±10%	0.80±0.10	C1608CH2A151K	C1608C0G2A151K
180	±5%	0.80±0.10	C1608CH2A181J	C1608C0G2A181J
	±10%	0.80±0.10	C1608CH2A181K	C1608C0G2A181K
220	±5%	0.80±0.10	C1608CH2A221J	C1608C0G2A221J
	±10%	0.80±0.10	C1608CH2A221K	C1608C0G2A221K
270	±5%	0.80±0.10	C1608CH2A271J	C1608C0G2A271J
	±10%	0.80±0.10	C1608CH2A271K	C1608C0G2A271K
330	±5%	0.80±0.10	C1608CH2A331J	C1608C0G2A331J
	±10%	0.80±0.10	C1608CH2A331K	C1608C0G2A331K
390	±5%	0.80±0.10	C1608CH2A391J	C1608C0G2A391J
	±10%	0.80±0.10	C1608CH2A391K	C1608C0G2A391K
470	±5%	0.80±0.10	C1608CH2A471J	C1608C0G2A471J
	±10%	0.80±0.10	C1608CH2A471K	C1608C0G2A471K
560	±5%	0.80±0.10	C1608CH2A561J	C1608C0G2A561J
	±10%	0.80±0.10	C1608CH2A561K	C1608C0G2A561K
680	±5%	0.80±0.10	C1608CH2A681J	C1608C0G2A681J
	±10%	0.80±0.10	C1608CH2A681K	C1608C0G2A681K
820	±5%	0.80±0.10	C1608CH2A821J	C1608C0G2A821J
	±10%	0.80±0.10	C1608CH2A821K	C1608C0G2A821K
1000	±5%	0.80±0.10	C1608CH2A102J	C1608C0G2A102J
	±10%	0.80±0.10	C1608CH2A102K	C1608C0G2A102K

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CAPACITANCE RANGES: CLASS 2**TEMPERATURE CHARACTERISTICS: JB($\pm 10\%$), X5R/X7R($\pm 15\%$)**RATED VOLTAGE E_{dc}: 100V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
1,000	$\pm 10\%$	0.80 \pm 0.10	C1608JB2A102K	C1608X5R2A102K	C1608X7R2A102K
	$\pm 20\%$	0.80 \pm 0.10	C1608JB2A102M	C1608X5R2A102M	C1608X7R2A102M
1,500	$\pm 10\%$	0.80 \pm 0.10	C1608JB2A152K	C1608X5R2A152K	C1608X7R2A152K
	$\pm 20\%$	0.80 \pm 0.10	C1608JB2A152M	C1608X5R2A152M	C1608X7R2A152M
2,200	$\pm 10\%$	0.80 \pm 0.10	C1608JB2A222K	C1608X5R2A222K	C1608X7R2A222K
	$\pm 20\%$	0.80 \pm 0.10	C1608JB2A222M	C1608X5R2A222M	C1608X7R2A222M
3,300	$\pm 10\%$	0.80 \pm 0.10	C1608JB2A332K	C1608X5R2A332K	C1608X7R2A332K
	$\pm 20\%$	0.80 \pm 0.10	C1608JB2A332M	C1608X5R2A332M	C1608X7R2A332M
4,700	$\pm 10\%$	0.80 \pm 0.10	C1608JB2A472K	C1608X5R2A472K	C1608X7R2A472K
	$\pm 20\%$	0.80 \pm 0.10	C1608JB2A472M	C1608X5R2A472M	C1608X7R2A472M
6,800	$\pm 10\%$	0.80 \pm 0.10	C1608JB2A682K	C1608X5R2A682K	C1608X7R2A682K
	$\pm 20\%$	0.80 \pm 0.10	C1608JB2A682M	C1608X5R2A682M	C1608X7R2A682M
10,000	$\pm 10\%$	0.80 \pm 0.10	C1608JB2A103K	C1608X5R2A103K	C1608X7R2A103K
	$\pm 20\%$	0.80 \pm 0.10	C1608JB2A103M	C1608X5R2A103M	C1608X7R2A103M
15,000	$\pm 10\%$	0.80 \pm 0.10	C1608JB2A153K	C1608X5R2A153K	C1608X7R2A153K
	$\pm 20\%$	0.80 \pm 0.10	C1608JB2A153M	C1608X5R2A153M	C1608X7R2A153M
22,000	$\pm 10\%$	0.80 \pm 0.10	C1608JB2A223K	C1608X5R2A223K	C1608X7R2A223K
	$\pm 20\%$	0.80 \pm 0.10	C1608JB2A223M	C1608X5R2A223M	C1608X7R2A223M

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C Series C2012 (EIA CC0805) Type

Conformity to RoHS Directive

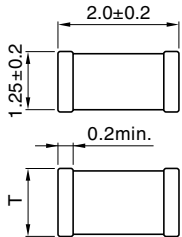
FEATURES

- The unique design structure for mid voltage enables a compact size with high voltage withstanding.
- Rated voltage Edc: 100 and 250V.

APPLICATIONS

Snubber circuits for switching power supply, ringer circuits for telephone and modem, or other general high voltage circuits.

SHAPES AND DIMENSIONS



Dimensions in mm



PRODUCT IDENTIFICATION

C 2012 CH 2E 102 J □
 (1) (2) (3) (4) (5) (6) (7)

(1) Series name

(2) Dimensions

2012	2.0×1.25mm
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(3) Capacitance temperature characteristics

Class 1 (Temperature compensation)

Temperature characteristics	Capacitance change	Temperature range
CH	0±60ppm/°C	-25 to +85°C
C0G	0±30ppm/°C	-55 to +125°C

Class 2 (Temperature stable and general purpose)

Temperature characteristics	Capacitance change	Temperature range
JB	±10%	-25 to +85°C
X7R	±15%	-55 to +125°C
X5R	±15%	-55 to +85°C

(4) Rated voltage Edc

2A	100V
2E	250V

(5) Nominal capacitance

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.

101	100pF
102	1,000pF
333	33,000pF
474	470,000pF

(6) Capacitance tolerance

J	±5%
K	±10%
M	±20%

(7) Packaging style

T	Taping (reel)
B	Bulk

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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CAPACITANCE RANGES: CLASS 1 (TEMPERATURE COMPENSATION)
TEMPERATURE CHARACTERISTICS: CH(0±60ppm/°C), C0G(0±30ppm/°C)

 RATED VOLTAGE E_{dc}: 250V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
820	±5%	0.60±0.10	C2012CH2E821J	C2012C0G2E821J
	±10%	0.60±0.10	C2012CH2E821K	C2012C0G2E821K
1,000	±5%	0.85±0.10	C2012CH2E102J	C2012C0G2E102J
	±10%	0.85±0.10	C2012CH2E102K	C2012C0G2E102K
1,500	±5%	0.85±0.10	C2012CH2E152J	C2012C0G2E152J
	±10%	0.85±0.10	C2012CH2E152K	C2012C0G2E152K
2,200	±5%	1.25±0.10	C2012CH2E222J	C2012C0G2E222J
	±10%	1.25±0.10	C2012CH2E222K	C2012C0G2E222K

 RATED VOLTAGE E_{dc}: 100V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
1,000	±5%	0.60±0.10	C2012CH2A102J	C2012C0G2A102J
	±10%	0.60±0.10	C2012CH2A102K	C2012C0G2A102K
1,500	±5%	0.60±0.10	C2012CH2A152J	C2012C0G2A152J
	±10%	0.60±0.10	C2012CH2A152K	C2012C0G2A152K
2,200	±5%	0.85±0.10	C2012CH2A222J	C2012C0G2A222J
	±10%	0.85±0.10	C2012CH2A222K	C2012C0G2A222K
3,300	±5%	1.25±0.10	C2012CH2A332J	C2012C0G2A332J
	±10%	1.25±0.10	C2012CH2A332K	C2012C0G2A332K
4,700	±5%	1.25±0.10	C2012CH2A472J	C2012C0G2A472J
	±10%	1.25±0.10	C2012CH2A472K	C2012C0G2A472K

CAPACITANCE RANGES: CLASS 2
TEMPERATURE CHARACTERISTICS: JB(±10%), X5R/X7R(±15%)

 RATED VOLTAGE E_{dc}: 250V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
1,000	±10%	0.85±0.10	C2012JB2E102K	C2012X5R2E102K	C2012X7R2E102K
	±20%	0.85±0.10	C2012JB2E102M	C2012X5R2E102M	C2012X7R2E102M
1,500	±10%	0.85±0.10	C2012JB2E152K	C2012X5R2E152K	C2012X7R2E152K
	±20%	0.85±0.10	C2012JB2E152M	C2012X5R2E152M	C2012X7R2E152M
2,200	±10%	0.85±0.10	C2012JB2E222K	C2012X5R2E222K	C2012X7R2E222K
	±20%	0.85±0.10	C2012JB2E222M	C2012X5R2E222M	C2012X7R2E222M
3,300	±10%	0.85±0.10	C2012JB2E332K	C2012X5R2E332K	C2012X7R2E332K
	±20%	0.85±0.10	C2012JB2E332M	C2012X5R2E332M	C2012X7R2E332M
4,700	±10%	0.85±0.10	C2012JB2E472K	C2012X5R2E472K	C2012X7R2E472K
	±20%	0.85±0.10	C2012JB2E472M	C2012X5R2E472M	C2012X7R2E472M
6,800	±10%	1.25±0.10	C2012JB2E682K	C2012X5R2E682K	C2012X7R2E682K
	±20%	1.25±0.10	C2012JB2E682M	C2012X5R2E682M	C2012X7R2E682M
10,000	±10%	1.25±0.10	C2012JB2E103K	C2012X5R2E103K	C2012X7R2E103K
	±20%	1.25±0.10	C2012JB2E103M	C2012X5R2E103M	C2012X7R2E103M
15,000	±10%	1.25±0.10	C2012JB2E153K	C2012X5R2E153K	C2012X7R2E153K
	±20%	1.25±0.10	C2012JB2E153M	C2012X5R2E153M	C2012X7R2E153M
22,000	±10%	1.25±0.10	C2012JB2E223K	C2012X5R2E223K	C2012X7R2E223K
	±20%	1.25±0.10	C2012JB2E223M	C2012X5R2E223M	C2012X7R2E223M

RATED VOLTAGE Edc: 100V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
1,000	±10%	0.85±0.10	C2012JB2A102K	C2012X5R2A102K	C2012X7R2A102K
	±20%	0.85±0.10	C2012JB2A102M	C2012X5R2A102M	C2012X7R2A102M
1,500	±10%	0.85±0.10	C2012JB2A152K	C2012X5R2A152K	C2012X7R2A152K
	±20%	0.85±0.10	C2012JB2A152M	C2012X5R2A152M	C2012X7R2A152M
2,200	±10%	0.85±0.10	C2012JB2A222K	C2012X5R2A222K	C2012X7R2A222K
	±20%	0.85±0.10	C2012JB2A222M	C2012X5R2A222M	C2012X7R2A222M
3,300	±10%	0.85±0.10	C2012JB2A332K	C2012X5R2A332K	C2012X7R2A332K
	±20%	0.85±0.10	C2012JB2A332M	C2012X5R2A332M	C2012X7R2A332M
4,700	±10%	0.85±0.10	C2012JB2A472K	C2012X5R2A472K	C2012X7R2A472K
	±20%	0.85±0.10	C2012JB2A472M	C2012X5R2A472M	C2012X7R2A472M
6,800	±10%	0.85±0.10	C2012JB2A682K	C2012X5R2A682K	C2012X7R2A682K
	±20%	0.85±0.10	C2012JB2A682M	C2012X5R2A682M	C2012X7R2A682M
10,000	±10%	0.85±0.10	C2012JB2A103K	C2012X5R2A103K	C2012X7R2A103K
	±20%	0.85±0.10	C2012JB2A103M	C2012X5R2A103M	C2012X7R2A103M
15,000	±10%	1.25±0.10	C2012JB2A153K	C2012X5R2A153K	C2012X7R2A153K
	±20%	1.25±0.10	C2012JB2A153M	C2012X5R2A153M	C2012X7R2A153M
22,000	±10%	1.25±0.10	C2012JB2A223K	C2012X5R2A223K	C2012X7R2A223K
	±20%	1.25±0.10	C2012JB2A223M	C2012X5R2A223M	C2012X7R2A223M
33,000	±10%	1.25±0.20	C2012JB2A333K	C2012X5R2A333K	C2012X7R2A333K
	±20%	1.25±0.20	C2012JB2A333M	C2012X5R2A333M	C2012X7R2A333M
47,000	±10%	1.25±0.20	C2012JB2A473K	C2012X5R2A473K	C2012X7R2A473K
	±20%	1.25±0.20	C2012JB2A473M	C2012X5R2A473M	C2012X7R2A473M
68,000	±10%	0.85±0.20	C2012JB2A683K	C2012X5R2A683K	C2012X7R2A683K
	±20%	0.85±0.20	C2012JB2A683M	C2012X5R2A683M	C2012X7R2A683M
100,000	±10%	1.25±0.20	C2012JB2A104K	C2012X5R2A104K	C2012X7R2A104K
	±20%	1.25±0.20	C2012JB2A104M	C2012X5R2A104M	C2012X7R2A104M

• For more information about the products of other capacitance or data, please contact us.

• All specifications are subject to change without notice.

Please read the precautions before using this catalog.

C Series C3216 (EIA CC1206) Type

Conformity to RoHS Directive

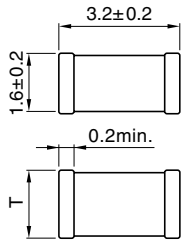
FEATURES

- The unique design structure for mid voltage enables a compact size with high voltage withstanding.
- Rated voltage Edc: 100, 250 and 630V.

APPLICATIONS

Snubber circuits for switching power supply, ringer circuits for telephone and modem, or other general high voltage circuits.

SHAPES AND DIMENSIONS



Dimensions in mm

PRODUCT IDENTIFICATION

C 3216 CH 2J 101 J □
 (1) (2) (3) (4) (5) (6) (7)

(1) Series name

(2) Dimensions

3216	3.2×1.6mm
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(3) Capacitance temperature characteristics

Class 1 (Temperature compensation)

Temperature characteristics	Capacitance change	Temperature range
CH	0±60ppm/°C	-25 to +85°C
C0G	0±30ppm/°C	-55 to +125°C

Class 2 (Temperature stable and general purpose)

Temperature characteristics	Capacitance change	Temperature range
JB	±10%	-25 to +85°C
X7R	±15%	-55 to +125°C
X5R	±15%	-55 to +85°C

(4) Rated voltage Edc

2A	100V
2E	250V
2J	630V

(5) Nominal capacitance

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.

101	100pF
102	1,000pF
333	33,000pF
474	470,000pF

(6) Capacitance tolerance

J	±5%
K	±10%
M	±20%

(7) Packaging style

T	Taping (reel)
B	Bulk

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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

CAPACITANCE RANGES: CLASS 1 (TEMPERATURE COMPENSATION)
TEMPERATURE CHARACTERISTICS: CH(0±60ppm/°C), C0G(0±30ppm/°C)
RATED VOLTAGE E_{dc}: 630V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
100	±5%	0.60±0.10	C3216CH2J101J	C3216C0G2J101J
	±10%	0.60±0.10	C3216CH2J101K	C3216C0G2J101K
120	±5%	0.60±0.10	C3216CH2J121J	C3216C0G2J121J
	±10%	0.60±0.10	C3216CH2J121K	C3216C0G2J121K
150	±5%	0.60±0.10	C3216CH2J151J	C3216C0G2J151J
	±10%	0.60±0.10	C3216CH2J151K	C3216C0G2J151K
180	±5%	0.60±0.10	C3216CH2J181J	C3216C0G2J181J
	±10%	0.60±0.10	C3216CH2J181K	C3216C0G2J181K
220	±5%	0.60±0.10	C3216CH2J221J	C3216C0G2J221J
	±10%	0.60±0.10	C3216CH2J221K	C3216C0G2J221K
270	±5%	0.60±0.10	C3216CH2J271J	C3216C0G2J271J
	±10%	0.60±0.10	C3216CH2J271K	C3216C0G2J271K
330	±5%	0.60±0.10	C3216CH2J331J	C3216C0G2J331J
	±10%	0.60±0.10	C3216CH2J331K	C3216C0G2J331K
390	±5%	0.60±0.10	C3216CH2J391J	C3216C0G2J391J
	±10%	0.60±0.10	C3216CH2J391K	C3216C0G2J391K
470	±5%	0.85±0.10	C3216CH2J471J	C3216C0G2J471J
	±10%	0.85±0.10	C3216CH2J471K	C3216C0G2J471K
560	±5%	0.85±0.10	C3216CH2J561J	C3216C0G2J561J
	±10%	0.85±0.10	C3216CH2J561K	C3216C0G2J561K
680	±5%	0.85±0.10	C3216CH2J681J	C3216C0G2J681J
	±10%	0.85±0.10	C3216CH2J681K	C3216C0G2J681K
820	±5%	0.85±0.10	C3216CH2J821J	C3216C0G2J821J
	±10%	0.85±0.10	C3216CH2J821K	C3216C0G2J821K
1,000	±5%	0.85±0.10	C3216CH2J102J	C3216C0G2J102J
	±10%	0.85±0.10	C3216CH2J102K	C3216C0G2J102K
1,500	±5%	1.15±0.10	C3216CH2J152J	C3216C0G2J152J
	±10%	1.15±0.10	C3216CH2J152K	C3216C0G2J152K
2,200	±5%	1.15±0.10	C3216CH2J222J	C3216C0G2J222J
	±10%	1.15±0.10	C3216CH2J222K	C3216C0G2J222K
3,300	±5%	1.60±0.15	C3216CH2J332J	C3216C0G2J332J
	±10%	1.60±0.15	C3216CH2J332K	C3216C0G2J332K

RATED VOLTAGE E_{dc}: 250V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
3,300	±5%	0.85±0.10	C3216CH2E332J	C3216C0G2E332J
	±10%	0.85±0.10	C3216CH2E332K	C3216C0G2E332K
4,700	±5%	1.15±0.10	C3216CH2E472J	C3216C0G2E472J
	±10%	1.15±0.10	C3216CH2E472K	C3216C0G2E472K
6,800	±5%	1.60±0.15	C3216CH2E682J	C3216C0G2E682J
	±10%	1.60±0.15	C3216CH2E682K	C3216C0G2E682K

RATED VOLTAGE E_{dc}: 100V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
4,700	±5%	0.85±0.10	C3216CH2A472J	C3216C0G2A472J
	±10%	0.85±0.10	C3216CH2A472K	C3216C0G2A472K
6,800	±5%	1.15±0.10	C3216CH2A682J	C3216C0G2A682J
	±10%	1.15±0.10	C3216CH2A682K	C3216C0G2A682K
10,000	±5%	1.15±0.10	C3216CH2A103J	C3216C0G2A103J
	±10%	1.15±0.10	C3216CH2A103K	C3216C0G2A103K

CAPACITANCE RANGES: CLASS 2

TEMPERATURE CHARACTERISTICS: JB(±10%), X5R/X7R(±15%)

RATED VOLTAGE E_{dc}: 630V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
1,000	±10%	1.15±0.10	C3216JB2J102K	C3216X5R2J102K	C3216X7R2J102K
	±20%	1.15±0.10	C3216JB2J102M	C3216X5R2J102M	C3216X7R2J102M
1,500	±10%	1.15±0.10	C3216JB2J152K	C3216X5R2J152K	C3216X7R2J152K
	±20%	1.15±0.10	C3216JB2J152M	C3216X5R2J152M	C3216X7R2J152M
2,200	±10%	1.15±0.10	C3216JB2J222K	C3216X5R2J222K	C3216X7R2J222K
	±20%	1.15±0.10	C3216JB2J222M	C3216X5R2J222M	C3216X7R2J222M
3,300	±10%	1.15±0.10	C3216JB2J332K	C3216X5R2J332K	C3216X7R2J332K
	±20%	1.15±0.10	C3216JB2J332M	C3216X5R2J332M	C3216X7R2J332M
4,700	±10%	1.15±0.10	C3216JB2J472K	C3216X5R2J472K	C3216X7R2J472K
	±20%	1.15±0.10	C3216JB2J472M	C3216X5R2J472M	C3216X7R2J472M
6,800	±10%	1.15±0.10	C3216JB2J682K	C3216X5R2J682K	C3216X7R2J682K
	±20%	1.15±0.10	C3216JB2J682M	C3216X5R2J682M	C3216X7R2J682M
10,000	±10%	1.15±0.10	C3216JB2J103K	C3216X5R2J103K	C3216X7R2J103K
	±20%	1.15±0.10	C3216JB2J103M	C3216X5R2J103M	C3216X7R2J103M
15,000	±10%	1.30±0.10	C3216JB2J153K	C3216X5R2J153K	C3216X7R2J153K
	±20%	1.30±0.10	C3216JB2J153M	C3216X5R2J153M	C3216X7R2J153M
22,000	±10%	1.30±0.10	C3216JB2J223K	C3216X5R2J223K	C3216X7R2J223K
	±20%	1.30±0.10	C3216JB2J223M	C3216X5R2J223M	C3216X7R2J223M
33,000	±10%	1.60±0.15	C3216JB2J333K	C3216X5R2J333K	C3216X7R2J333K
	±20%	1.60±0.15	C3216JB2J333M	C3216X5R2J333M	C3216X7R2J333M

RATED VOLTAGE E_{dc}: 250V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
15,000	±10%	1.15±0.10	C3216JB2E153K	C3216X5R2E153K	C3216X7R2E153K
	±20%	1.15±0.10	C3216JB2E153M	C3216X5R2E153M	C3216X7R2E153M
22,000	±10%	1.15±0.10	C3216JB2E223K	C3216X5R2E223K	C3216X7R2E223K
	±20%	1.15±0.10	C3216JB2E223M	C3216X5R2E223M	C3216X7R2E223M
33,000	±10%	1.60±0.15	C3216JB2E333K	C3216X5R2E333K	C3216X7R2E333K
	±20%	1.60±0.15	C3216JB2E333M	C3216X5R2E333M	C3216X7R2E333M
47,000	±10%	1.60±0.15	C3216JB2E473K	C3216X5R2E473K	C3216X7R2E473K
	±20%	1.60±0.15	C3216JB2E473M	C3216X5R2E473M	C3216X7R2E473M
68,000	±10%	1.60±0.15	C3216JB2E683K	C3216X5R2E683K	C3216X7R2E683K
	±20%	1.60±0.15	C3216JB2E683M	C3216X5R2E683M	C3216X7R2E683M
100,000	±10%	1.60±0.15	C3216JB2E104K	C3216X5R2E104K	C3216X7R2E104K
	±20%	1.60±0.15	C3216JB2E104M	C3216X5R2E104M	C3216X7R2E104M

RATED VOLTAGE E_{dc}: 100V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
33,000	±10%	1.15±0.10	C3216JB2A333K	C3216X5R2A333K	C3216X7R2A333K
	±20%	1.15±0.10	C3216JB2A333M	C3216X5R2A333M	C3216X7R2A333M
47,000	±10%	1.15±0.10	C3216JB2A473K	C3216X5R2A473K	C3216X7R2A473K
	±20%	1.15±0.10	C3216JB2A473M	C3216X5R2A473M	C3216X7R2A473M
68,000	±10%	1.60±0.15	C3216JB2A683K	C3216X5R2A683K	C3216X7R2A683K
	±20%	1.60±0.15	C3216JB2A683M	C3216X5R2A683M	C3216X7R2A683M
100,000	±10%	1.60±0.15	C3216JB2A104K	C3216X5R2A104K	C3216X7R2A104K
	±20%	1.60±0.15	C3216JB2A104M	C3216X5R2A104M	C3216X7R2A104M
150,000	±10%	1.60±0.15	C3216JB2A154K	C3216X5R2A154K	C3216X7R2A154K
	±20%	1.60±0.15	C3216JB2A154M	C3216X5R2A154M	C3216X7R2A154M
220,000	±10%	1.15±0.10	C3216JB2A224K	C3216X5R2A224K	C3216X7R2A224K
	±20%	1.15±0.10	C3216JB2A224M	C3216X5R2A224M	C3216X7R2A224M
330,000	±10%	1.30±0.15	C3216JB2A334K	C3216X5R2A334K	C3216X7R2A334K
	±20%	1.30±0.15	C3216JB2A334M	C3216X5R2A334M	C3216X7R2A334M
470,000	±10%	1.60±0.20	C3216JB2A474K	C3216X5R2A474K	C3216X7R2A474K
	±20%	1.60±0.20	C3216JB2A474M	C3216X5R2A474M	C3216X7R2A474M
680,000	±10%	1.60±0.20	C3216JB2A684K	C3216X5R2A684K	C3216X7R2A684K
	±20%	1.60±0.20	C3216JB2A684M	C3216X5R2A684M	C3216X7R2A684M
1,000,000	±10%	1.60±0.20	C3216JB2A105K	C3216X5R2A105K	C3216X7R2A105K
	±20%	1.60±0.20	C3216JB2A105M	C3216X5R2A105M	C3216X7R2A105M

• For more information about the products of other capacitance or data, please contact us.

• All specifications are subject to change without notice.

Please read the precautions before using this catalog.

C Series C3225 (EIA CC1210) Type

Conformity to RoHS Directive

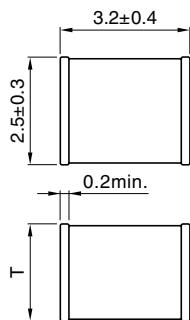
FEATURES

- The unique design structure for mid voltage enables a compact size with high voltage withstanding.
- Rated voltage Edc: 100, 250 and 630V.
- C3225 type is specific to reflow soldering.

APPLICATIONS

Snubber circuits for switching power supply, ringer circuits for telephone and modem, or other general high voltage circuits.

SHAPES AND DIMENSIONS



Dimensions in mm



PRODUCT IDENTIFICATION

C 3225 CH 2E 103 J □
 (1) (2) (3) (4) (5) (6) (7)

(1) Series name

(2) Dimensions

3225	3.2×2.5mm
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(3) Capacitance temperature characteristics

Class 1 (Temperature compensation)

Temperature characteristics	Capacitance change	Temperature range
CH	0±60ppm/°C	-25 to +85°C
C0G	0±30ppm/°C	-55 to +125°C

Class 2 (Temperature stable and general purpose)

Temperature characteristics	Capacitance change	Temperature range
JB	±10%	-25 to +85°C
X7R	±15%	-55 to +125°C
X5R	±15%	-55 to +85°C

(4) Rated voltage Edc

2A	100V
2E	250V
2J	630V

(5) Nominal capacitance

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.

472	4,700pF
333	33,000pF
474	470,000pF
105	1,000,000pF

(6) Capacitance tolerance

J	±5%
K	±10%
M	±20%

(7) Packaging style

T	Taping (reel)
B	Bulk

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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

CAPACITANCE RANGES: CLASS 1 (TEMPERATURE COMPENSATION)**TEMPERATURE CHARACTERISTICS: CH(0±60ppm/°C), C0G(0±30ppm/°C)**RATED VOLTAGE E_{dc}: 630V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
4,700	±5%	1.60±0.20	C3225CH2J472J	C3225C0G2J472J
	±10%	1.60±0.20	C3225CH2J472K	C3225C0G2J472K
6,800	±5%	2.00±0.20	C3225CH2J682J	C3225C0G2J682J
	±10%	2.00±0.20	C3225CH2J682K	C3225C0G2J682K

RATED VOLTAGE E_{dc}: 250V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
10,000	±5%	1.60±0.20	C3225CH2E103J	C3225C0G2E103J
	±10%	1.60±0.20	C3225CH2E103K	C3225C0G2E103K
15,000	±5%	2.00±0.20	C3225CH2E153J	C3225C0G2E153J
	±10%	2.00±0.20	C3225CH2E153K	C3225C0G2E153K

RATED VOLTAGE E_{dc}: 100V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
15,000	±5%	1.25±0.10	C3225CH2A153J	C3225C0G2A153J
	±10%	1.25±0.10	C3225CH2A153K	C3225C0G2A153K
22,000	±5%	1.60±0.20	C3225CH2A223J	C3225C0G2A223J
	±10%	1.60±0.20	C3225CH2A223K	C3225C0G2A223K
33,000	±5%	2.00±0.20	C3225CH2A333J	C3225C0G2A333J
	±10%	2.00±0.20	C3225CH2A333K	C3225C0G2A333K
47,000	±5%	2.30±0.20	C3225CH2A473J	C3225C0G2A473J
	±10%	2.30±0.20	C3225CH2A473K	C3225C0G2A473K

CAPACITANCE RANGES: CLASS 2**TEMPERATURE CHARACTERISTICS: JB(±10%), X5R/X7R(±15%)**RATED VOLTAGE E_{dc}: 630V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
47,000	±10%	2.00±0.20	C3225JB2J473K	C3225X5R2J473K	C3225X7R2J473K
	±20%	2.00±0.20	C3225JB2J473M	C3225X5R2J473M	C3225X7R2J473M
68,000	±10%	2.00±0.20	C3225JB2J683K	C3225X5R2J683K	C3225X7R2J683K
	±20%	2.00±0.20	C3225JB2J683M	C3225X5R2J683M	C3225X7R2J683M

RATED VOLTAGE E_{dc}: 250V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
100,000	±10%	2.00±0.20	C3225JB2E104K	C3225X5R2E104K	C3225X7R2E104K
	±20%	2.00±0.20	C3225JB2E104M	C3225X5R2E104M	C3225X7R2E104M
150,000	±10%	2.00±0.20	C3225JB2E154K	C3225X5R2E154K	C3225X7R2E154K
	±20%	2.00±0.20	C3225JB2E154M	C3225X5R2E154M	C3225X7R2E154M
220,000	±10%	2.00±0.20	C3225JB2E224K	C3225X5R2E224K	C3225X7R2E224K
	±20%	2.00±0.20	C3225JB2E224M	C3225X5R2E224M	C3225X7R2E224M

RATED VOLTAGE E_{dc}: 100V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
330,000	±10%	2.00±0.20	C3225JB2A334K	C3225X5R2A334K	C3225X7R2A334K
	±20%	2.00±0.20	C3225JB2A334M	C3225X5R2A334M	C3225X7R2A334M
470,000	±10%	2.00±0.20	C3225JB2A474K	C3225X5R2A474K	C3225X7R2A474K
	±20%	2.00±0.20	C3225JB2A474M	C3225X5R2A474M	C3225X7R2A474M
680,000	±10%	1.60±0.20	C3225JB2A684K	C3225X5R2A684K	C3225X7R2A684K
	±20%	1.60±0.20	C3225JB2A684M	C3225X5R2A684M	C3225X7R2A684M
1,000,000	±10%	2.00±0.20	C3225JB2A105K	C3225X5R2A105K	C3225X7R2A105K
	±20%	2.00±0.20	C3225JB2A105M	C3225X5R2A105M	C3225X7R2A105M
1,500,000	±10%	2.00±0.20	C3225JB2A155K	C3225X5R2A155K	C3225X7R2A155K
	±20%	2.00±0.20	C3225JB2A155M	C3225X5R2A155M	C3225X7R2A155M
2,200,000	±10%	2.30±0.30	C3225JB2A225K	C3225X5R2A225K	C3225X7R2A225K
	±20%	2.30±0.30	C3225JB2A225M	C3225X5R2A225M	C3225X7R2A225M

- For more information about the products of other capacitance or data, please contact us.

- All specifications are subject to change without notice.

Please read the precautions before using this catalog.

C Series C4532 (EIA CC1812) Type

Conformity to RoHS Directive

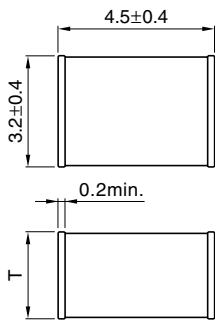
FEATURES

- The unique design structure for mid voltage enables a compact size with high voltage withstanding.
- Rated voltage Edc: 100, 250 and 630V.
- C4532 type is specific to reflow soldering.

APPLICATIONS

Snubber circuits for switching power supply, ringer circuits for telephone and modem, or other general high voltage circuits.

SHAPES AND DIMENSIONS



Dimensions in mm



PRODUCT IDENTIFICATION

C 4532 CH 2J 103 J □
(1) (2) (3) (4) (5) (6) (7)

(1) Series name

(2) Dimensions

4532	4.5×3.2mm
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(3) Capacitance temperature characteristics

Class 1 (Temperature compensation)

Temperature characteristics	Capacitance change	Temperature range
CH	0±60ppm/°C	-25 to +85°C
C0G	0±30ppm/°C	-55 to +125°C

Class 2 (Temperature stable and general purpose)

Temperature characteristics	Capacitance change	Temperature range
JB	±10%	-25 to +85°C
X7R	±15%	-55 to +125°C
X5R	±15%	-55 to +85°C

(4) Rated voltage Edc

2A	100V
2E	250V
2J	630V

(5) Nominal capacitance

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.

103	10,000pF
474	470,000pF
225	2,200,000pF

(6) Capacitance tolerance

J	±5%
K	±10%
M	±20%

(7) Packaging style

T	Taping (reel)
B	Bulk

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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

CAPACITANCE RANGES: CLASS 1 (TEMPERATURE COMPENSATION)**TEMPERATURE CHARACTERISTICS: CH(0±60ppm/°C), C0G(0±30ppm/°C)**RATED VOLTAGE E_{dc}: 630V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
10,000	±5%	1.60±0.20	C4532CH2J103J	C4532C0G2J103J
	±10%	1.60±0.20	C4532CH2J103K	C4532C0G2J103K
15,000	±5%	2.50±0.30	C4532CH2J153J	C4532C0G2J153J
	±10%	2.50±0.30	C4532CH2J153K	C4532C0G2J153K
22,000	±5%	3.20±0.30	C4532CH2J223J	C4532C0G2J223J
	±10%	3.20±0.30	C4532CH2J223K	C4532C0G2J223K

RATED VOLTAGE E_{dc}: 250V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
22,000	±5%	1.60±0.20	C4532CH2E223J	C4532C0G2E223J
	±10%	1.60±0.20	C4532CH2E223K	C4532C0G2E223K
33,000	±5%	2.00±0.20	C4532CH2E333J	C4532C0G2E333J
	±10%	2.00±0.20	C4532CH2E333K	C4532C0G2E333K
47,000	±5%	3.20±0.30	C4532CH2E473J	C4532C0G2E473J
	±10%	3.20±0.30	C4532CH2E473K	C4532C0G2E473K

RATED VOLTAGE E_{dc}: 100V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.	
			Temperature characteristics: CH	Temperature characteristics: C0G
47,000	±5%	2.0±0.20	C4532CH2A473J	C4532C0G2A473J
	±10%	2.0±0.20	C4532CH2A473K	C4532C0G2A473K
68,000	±5%	2.5±0.30	C4532CH2A683J	C4532C0G2A683J
	±10%	2.5±0.30	C4532CH2A683K	C4532C0G2A683K
100,000	±5%	3.2±0.30	C4532CH2A104J	C4532C0G2A104J
	±10%	3.2±0.30	C4532CH2A104K	C4532C0G2A104K

CAPACITANCE RANGES: CLASS 2**TEMPERATURE CHARACTERISTICS: JB(±10%), X5R/X7R(±15%)**RATED VOLTAGE E_{dc}: 630V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
68,000	±10%	1.60±0.20	C4532JB2J683K	C4532X5R2J683K	C4532X7R2J683K
	±20%	1.60±0.20	C4532JB2J683M	C4532X5R2J683M	C4532X7R2J683M
100,000	±10%	2.30±0.20	C4532JB2J104K	C4532X5R2J104K	C4532X7R2J104K
	±20%	2.30±0.20	C4532JB2J104M	C4532X5R2J104M	C4532X7R2J104M

RATED VOLTAGE E_{dc}: 250V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
150,000	±10%	1.60±0.20	C4532JB2E154K	C4532X5R2E154K	C4532X7R2E154K
	±20%	1.60±0.20	C4532JB2E154M	C4532X5R2E154M	C4532X7R2E154M
220,000	±10%	2.30±0.20	C4532JB2E224K	C4532X5R2E224K	C4532X7R2E224K
	±20%	2.30±0.20	C4532JB2E224M	C4532X5R2E224M	C4532X7R2E224M
330,000	±10%	2.30±0.20	C4532JB2E334K	C4532X5R2E334K	C4532X7R2E334K
	±20%	2.30±0.20	C4532JB2E334M	C4532X5R2E334M	C4532X7R2E334M
470,000	±10%	2.30±0.20	C4532JB2E474K	C4532X5R2E474K	C4532X7R2E474K
	±20%	2.30±0.20	C4532JB2E474M	C4532X5R2E474M	C4532X7R2E474M

RATED VOLTAGE E_{dc}: 100V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
680,000	±10%	2.30±0.20	C4532JB2A684K	C4532X5R2A684K	C4532X7R2A684K
	±20%	2.30±0.20	C4532JB2A684M	C4532X5R2A684M	C4532X7R2A684M
1,000,000	±10%	2.30±0.20	C4532JB2A105K	C4532X5R2A105K	C4532X7R2A105K
	±20%	2.30±0.20	C4532JB2A105M	C4532X5R2A105M	C4532X7R2A105M
1,500,000	±10%	2.30±0.20	C4532JB2A155K	C4532X5R2A155K	C4532X7R2A155K
	±20%	2.30±0.20	C4532JB2A155M	C4532X5R2A155M	C4532X7R2A155M
2,200,000	±10%	2.30±0.20	C4532JB2A225K	C4532X5R2A225K	C4532X7R2A225K
	±20%	2.30±0.20	C4532JB2A225M	C4532X5R2A225M	C4532X7R2A225M

- For more information about the products of other capacitance or data, please contact us.

- All specifications are subject to change without notice.

Please read the precautions before using this catalog.

C Series C5750 (EIA CC2220) Type

Conformity to RoHS Directive

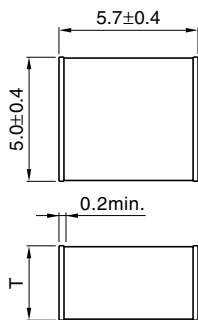
FEATURES

- The unique design structure for mid voltage enables a compact size with high voltage withstanding.
- Rated voltage Edc: 100, 250 and 630V.
- C5750 type is specific to reflow soldering.

APPLICATIONS

Snubber circuits for switching power supply, ringer circuits for telephone and modem, or other general high voltage circuits.

SHAPES AND DIMENSIONS



Dimensions in mm



PRODUCT IDENTIFICATION

C 5750 JB 2E 105 K □
(1) (2) (3) (4) (5) (6) (7)

(1) Series name

(2) Dimensions

5750	5.7×5.0mm
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(3) Capacitance temperature characteristics

Class 2 (Temperature stable and general purpose)

Temperature characteristics	Capacitance change	Temperature range
JB	±10%	-25 to +85°C
X7R	±15%	-55 to +125°C
X5R	±15%	-55 to +85°C

(4) Rated voltage Edc

2A	100V
2E	250V
2J	630V

(5) Nominal capacitance

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.

154	150,000pF
105	1,000,000pF

(6) Capacitance tolerance

K	±10%
M	±20%

(7) Packaging style

T	Taping (reel)
B	Bulk

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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CAPACITANCE RANGES: CLASS 2**TEMPERATURE CHARACTERISTICS: JB($\pm 10\%$), X5R/X7R($\pm 15\%$)**RATED VOLTAGE E_{dc}: 630V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
150,000	$\pm 10\%$	1.60 \pm 0.20	C5750JB2J154K	C5750X5R2J154K	C5750X7R2J154K
	$\pm 20\%$	1.60 \pm 0.20	C5750JB2J154M	C5750X5R2J154M	C5750X7R2J154M
220,000	$\pm 10\%$	2.30 \pm 0.20	C5750JB2J224K	C5750X5R2J224K	C5750X7R2J224K
	$\pm 20\%$	2.30 \pm 0.20	C5750JB2J224M	C5750X5R2J224M	C5750X7R2J224M

RATED VOLTAGE E_{dc}: 250V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
330,000	$\pm 10\%$	1.60 \pm 0.20	C5750JB2E334K	C5750X5R2E334K	C5750X7R2E334K
	$\pm 20\%$	1.60 \pm 0.20	C5750JB2E334M	C5750X5R2E334M	C5750X7R2E334M
470,000	$\pm 10\%$	2.30 \pm 0.20	C5750JB2E474K	C5750X5R2E474K	C5750X7R2E474K
	$\pm 20\%$	2.30 \pm 0.20	C5750JB2E474M	C5750X5R2E474M	C5750X7R2E474M
680,000	$\pm 10\%$	2.30 \pm 0.20	C5750JB2E684K	C5750X5R2E684K	C5750X7R2E684K
	$\pm 20\%$	2.30 \pm 0.20	C5750JB2E684M	C5750X5R2E684M	C5750X7R2E684M
1,000,000	$\pm 10\%$	2.30 \pm 0.20	C5750JB2E105K	C5750X5R2E105K	C5750X7R2E105K
	$\pm 20\%$	2.30 \pm 0.20	C5750JB2E105M	C5750X5R2E105M	C5750X7R2E105M

RATED VOLTAGE E_{dc}: 100V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.		
			Temperature characteristics: JB	Temperature characteristics: X5R	Temperature characteristics: X7R
680,000	$\pm 10\%$	1.60 \pm 0.20	C5750JB2A684K	C5750X5R2A684K	C5750X7R2A684K
	$\pm 20\%$	1.60 \pm 0.20	C5750JB2A684M	C5750X5R2A684M	C5750X7R2A684M
1,000,000	$\pm 10\%$	2.30 \pm 0.20	C5750JB2A105K	C5750X5R2A105K	C5750X7R2A105K
	$\pm 20\%$	2.30 \pm 0.20	C5750JB2A105M	C5750X5R2A105M	C5750X7R2A105M
1,500,000	$\pm 10\%$	2.30 \pm 0.20	C5750JB2A155K	C5750X5R2A155K	C5750X7R2A155K
	$\pm 20\%$	2.30 \pm 0.20	C5750JB2A155M	C5750X5R2A155M	C5750X7R2A155M
2,200,000	$\pm 10\%$	2.30 \pm 0.20	C5750JB2A225K	C5750X5R2A225K	C5750X7R2A225K
	$\pm 20\%$	2.30 \pm 0.20	C5750JB2A225M	C5750X5R2A225M	C5750X7R2A225M
3,300,000	$\pm 10\%$	2.30 \pm 0.20	C5750JB2A335K	C5750X5R2A335K	C5750X7R2A335K
	$\pm 20\%$	2.30 \pm 0.20	C5750JB2A335M	C5750X5R2A335M	C5750X7R2A335M
4,700,000	$\pm 10\%$	2.30 \pm 0.20	C5750JB2A475K	C5750X5R2A475K	C5750X7R2A475K
	$\pm 20\%$	2.30 \pm 0.20	C5750JB2A475M	C5750X5R2A475M	C5750X7R2A475M

• For more information about the products of other capacitance or data, please contact us.

• All specifications are subject to change without notice.

Please read the precautions before using this catalog.

REMINDERS

Please read this before using the product.

SAFETY REMINDERS

REMINDERS

1. If you intend to use a product listed in this catalog for a purpose that may cause loss of life or other damage, you must contact our company's sales window.
2. We may modify products or discontinue production of a product listed in this catalog without prior notification.
3. We provide "Delivery Specification" that explain precautions for the specifications and safety of each product listed in this catalog. We strongly recommend that you exchange these delivery specifications with customers that use one of these products.
4. If you plan to export a product listed in this catalog, keep in mind that it may be a restricted item according to the "Foreign Exchange and Foreign Trade Control Law". In such cases, it is necessary to acquire export permission in harmony with this law.
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7. This catalog only applies to products purchased through our company or one of our company's official agencies. This catalog does not apply to products that are purchased through other third parties.
8. The descriptions in this catalog apply as of June 2009.

High Voltage Multilayer Ceramic Chip Capacitors

C Series C4520(EIA CC1808) Type

Conformity to RoHS Directive

Temperature Characteristic: C0G

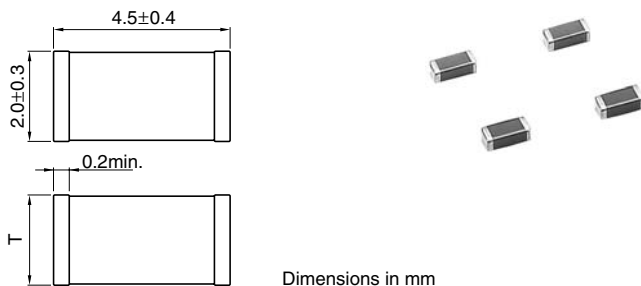
FEATURES

- 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 products, and general high voltage circuits.

SHAPES AND DIMENSIONS



PRECAUTIONS

- This product intended solely for reflow soldering.
- A slit of about 1mm on the circuit board is recommended to improve washability 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. Due consideration must be given in such implementations because of the high heat stress levels involved.

PRODUCT IDENTIFICATION

C	4520	C0G	3F	101	K	□
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Series name

(2) Dimensions L×W

4520	4.5×2.0mm
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(3) Capacitance temperature characteristics
Class 1 (Temperature compensation)

Temperature characteristics	Temperature coefficient	Temperature range
C0G	0±30ppm/°C	-55 to +125°C

(4) Rated voltage E_{dc}

3F	3kV
----	-----

(5) Nominal capacitance

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.

101	100pF
-----	-------

(6) Capacitance tolerance

F	±1pF[10pF]
K	±10%[over 10pF]

(7) Packaging style

T	Taping (reel)
B	Bulk

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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CAPACITANCE RANGES: CLASS 1 (TEMPERATURE COMPENSATION)
TEMPERATURE CHARACTERISTICS: C0G(0±30ppm/°C)

 RATED VOLTAGE E_{dc}: 3000V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: C0G
10	±1pF	0.85±0.15	C4520C0G3F100F
12	±10%	0.85±0.15	C4520C0G3F120K
15	±10%	1.10±0.20	C4520C0G3F150K
18	±10%	1.10±0.20	C4520C0G3F180K
22	±10%	1.10±0.20	C4520C0G3F220K
27	±10%	1.60±0.20	C4520C0G3F270K
33	±10%	1.60±0.20	C4520C0G3F330K
39	±10%	1.60±0.20	C4520C0G3F390K
47	±10%	1.60±0.20	C4520C0G3F470K
56	±10%	2.00±0.20	C4520C0G3F560K
68	±10%	2.00±0.20	C4520C0G3F680K
82	±10%	2.00±0.20	C4520C0G3F820K
100	±10%	2.00±0.20	C4520C0G3F101K

- For more information about the products of other capacitance or data, please contact us.

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C Series C4532(EIA CC1812) Type

Conformity to RoHS Directive

Temperature Characteristic: C0G

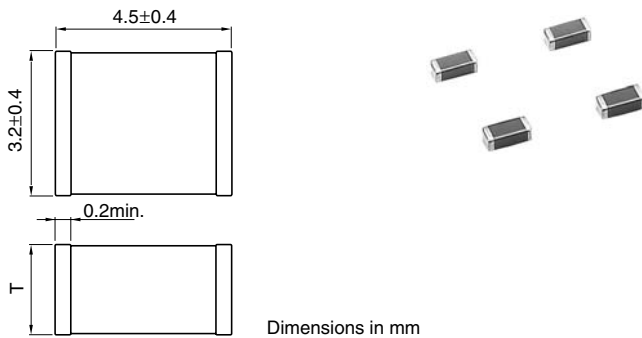
FEATURES

- 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 products, and general high voltage circuits.

SHAPES AND DIMENSIONS



PRECAUTIONS

- This product intended solely for reflow soldering.
- A slit of about 1mm on the circuit board is recommended to improve washability 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. Due consideration must be given in such implementations because of the high heat stress levels involved.

CAPACITANCE RANGES: CLASS 1 (TEMPERATURE COMPENSATION)

TEMPERATURE CHARACTERISTICS: C0G(0±30ppm/°C)

RATED VOLTAGE E_{dc}: 3000V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: C0G
100	±10%	1.60±0.20	C4532C0G3F101K
120	±10%	1.60±0.20	C4532C0G3F121K
150	±10%	1.60±0.20	C4532C0G3F151K
180	±10%	1.60±0.20	C4532C0G3F181K
220	±10%	2.00±0.20	C4532C0G3F221K
270	±10%	2.30±0.20	C4532C0G3F271K
330	±10%	2.50±0.30	C4532C0G3F331K

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PRODUCT IDENTIFICATION

C 4532 C0G 3F 101 K □
(1) (2) (3) (4) (5) (6) (7)

(1) Series name

(2) Dimensions L×W

4532 4.5×3.2mm

(3) Capacitance temperature characteristics
Class 1 (Temperature compensation)

Temperature characteristics	Temperature coefficient	Temperature range
C0G	0±30ppm/°C	-55 to +125°C

(4) Rated voltage E_{dc}

3F 3kV

(5) Nominal capacitance

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.

101 100pF

(6) Capacitance tolerance

F ±1pF[10pF]
K ±10%[over 10pF]

(7) Packaging style

T Taping (reel)
B Bulk

REMINDERS

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SAFETY REMINDERS

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5. Any reproduction or transferring of the contents of this catalog is prohibited without prior permission from our company.
6. We are not responsible for problems that occur related to the intellectual property rights or other rights of our company or a third party when you use a product listed in this catalog. We do not grant license of these rights.
7. This catalog only applies to products purchased through our company or one of our company's official agencies. This catalog does not apply to products that are purchased through other third parties.
8. The descriptions in this catalog apply as of April 2007.

High Voltage Multilayer Ceramic Chip Capacitors

C Series C4520(EIA CC1808) Type

Conformity to RoHS Directive

Temperature Characteristic: X7R

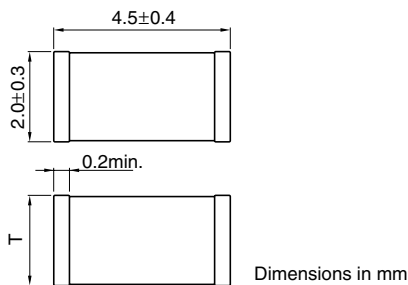
FEATURES

- No polarity.
- Suits 100Base-T LAN cards, LAN board, and HUB.
- Complies with ISO8802-3 for LAN applications.
- Designed exclusively for reflow soldering.

APPLICATIONS

Input signal filtering circuit of modem and LAN interface, and general high voltage circuits.

SHAPES AND DIMENSIONS



PRECAUTIONS

- This product intended solely for reflow soldering.
- A slit of about 1mm on the circuit board is recommended to improve washability 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.

CAPACITANCE RANGES: CLASS 2

TEMPERATURE CHARACTERISTICS: X7R(±15%)

RATED VOLTAGE E_{dc}: 2000V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
470	±10%	1.30±0.20	C4520X7R3D471K
1,000	±10%	1.30±0.20	C4520X7R3D102K

RATED VOLTAGE E_{dc}: 1000V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No. Temperature characteristics: X7R
470	±10%	1.30±0.20	C4520X7R3A471K
1,000	±10%	1.30±0.20	C4520X7R3A102K

PRODUCT IDENTIFICATION

C	4520	X7R	3A	471	K	□
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Series name

(2) Dimensions L×W

4520	4.5×2.0mm
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(3) Capacitance temperature characteristics
Class 2 (Temperature stable and general purpose)

Temperature characteristics	Temperature coefficient	Temperature range
X7R	±15%	-55 to +125°C

(4) Rated voltage E_{dc}

3A	1kV
3D	2kV

(5) Nominal capacitance

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.

471	470pF
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(6) Capacitance tolerance

K	±10%
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(7) Packaging style

T	Taping (reel)
B	Bulk

- For more information about the products of other capacitance or data, please contact us.
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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

C Series C4532(EIA CC1812) Type

Conformity to RoHS Directive

Temperature Characteristic: X7R

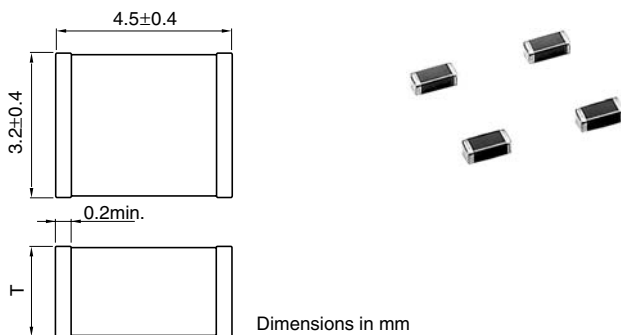
FEATURES

- No polarity.
- Suits 100Base-T LAN cards, LAN board, and HUB.
- Complies with ISO8802-3 for LAN applications.
- Designed exclusively for reflow soldering.

APPLICATIONS

Input signal filtering circuit of modem and LAN interface, and general high voltage circuits.

SHAPES AND DIMENSIONS



PRECAUTIONS

- This product intended solely for reflow soldering.
- A slit of about 1mm on the circuit board is recommended to improve washability 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.

CAPACITANCE RANGES: CLASS 2

TEMPERATURE CHARACTERISTICS: X7R(±15%)

RATED VOLTAGE E_{dc}: 2000V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.
2,200	±10%	1.30±0.20	C4532X7R3D222K

RATED VOLTAGE E_{dc}: 1000V

Capacitance (pF)	Tolerance	Thickness T (mm)	Part No.
4,700	±10%	1.60±0.20	C4532X7R3A472K
10,000	±10%	2.00±0.20	C4532X7R3A103K

PRODUCT IDENTIFICATION

C 4532 X7R 3A 472 K □
(1) (2) (3) (4) (5) (6) (7)

(1) Series name

(2) Dimensions L×W

4532 4.5×3.2mm

(3) Capacitance temperature characteristics

Class 2 (Temperature stable and general purpose)

Temperature characteristics	Temperature coefficient	Temperature range
X7R	±15%	-55 to +125°C

(4) Rated voltage E_{dc}

3A	1kV
3D	2kV

(5) Nominal capacitance

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.

471 470pF

(6) Capacitance tolerance

K ±10%

(7) Packaging style

T	Taping (reel)
B	Bulk

• For more information about the products of other capacitance or data, please contact us.

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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