

# Ceramic Capacitors

## For Smoothing SMD

## C Series

### FEATURES

- Providing capacitance values in the range of electrolytic types and long service life, this product is recommended for high-reliability power supply applications.
- Low ESR and excellent frequency characteristics make this capacitor a superior choice for high-frequency and high-density power supplies.

### APPLICATIONS

DC to DC converters, switching power supplies.

### PRODUCT IDENTIFICATION

C 3225 X7R 1E 105 M □  
(1) (2) (3) (4) (5) (6) (7)

(1) Series name

(2) Dimensions L×W

3225	3.2×2.5mm
4532	4.5×3.2mm
5750	5.7×5.0mm

(3) Capacitance temperature characteristics

Class 2

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

(4) Rated voltage E<sub>dc</sub>

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.

105	100000pF[1μF]
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(6) Capacitance tolerance

K	±10%
M	±20%
Z	+80, -20%

(7) Packaging style

T	Taping (reel)
B	Bulk

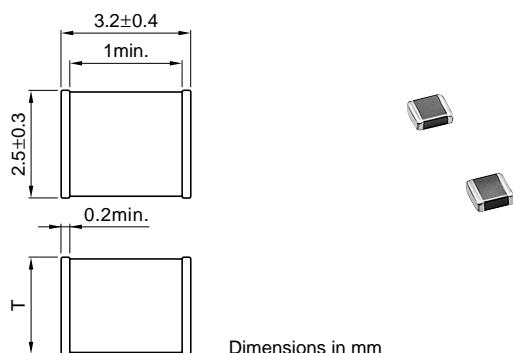
# Ceramic Capacitors

## For Smoothing

### SMD

## C Series

### C3225 (EIA:CC1210) TYPE SHAPES AND DIMENSIONS



### CAPACITANCE RANGES: CLASS 2 (TEMPERATURE STABLE) TEMPERATURE CHARACTERISTICS: X7R(±15%)

RATED VOLTAGE Edc: 50V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
470000	±10%	1.15±0.15	C3225X7R1H474K
	±20%	1.15±0.15	C3225X7R1H474M
680000	±10%	1.6±0.2	C3225X7R1H684K
	±20%	1.6±0.2	C3225X7R1H684M
1000000	±10%	1.6±0.2	C3225X7R1H105K
[1μF]	±20%	1.6±0.2	C3225X7R1H105M
1500000	±10%	2.0±0.2	C3225X7R1H155K
[1.5μF]	±20%	2.0±0.2	C3225X7R1H155M

RATED VOLTAGE Edc: 25V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
1000000	±10%	1.15±0.15	C3225X7R1E105K
[1μF]	±20%	1.15±0.15	C3225X7R1E105M
1500000	±10%	1.15±0.15	C3225X7R1E155K
[1.5μF]	±20%	1.15±0.15	C3225X7R1E155M
2200000	±10%	1.6±0.2	C3225X7R1E225K
[2.2μF]	±20%	1.6±0.2	C3225X7R1E225M
3300000	±10%	1.6±0.2	C3225X7R1E335K
[3.3μF]	±20%	1.6±0.2	C3225X7R1E335M
4700000	±10%	2.0±0.2	C3225X7R1E475K
[4.7μF]	±20%	2.0±0.2	C3225X7R1E475M

RATED VOLTAGE Edc: 16V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
3300000	±10%	1.6±0.2	C3225X7R1C335K
[3.3μF]	±20%	1.6±0.2	C3225X7R1C335M
4700000	±10%	1.6±0.2	C3225X7R1C475K
[4.7μF]	±20%	1.6±0.2	C3225X7R1C475M

### TEMPERATURE CHARACTERISTICS: X5R(±15%)

RATED VOLTAGE Edc: 10V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
4700000	±10%	1.6±0.2	C3225X5R1A475K
[4.7μF]	±20%	1.6±0.2	C3225X5R1A475M
6800000	±10%	2.0±0.2	C3225X5R1A685K
[6.8μF]	±20%	2.0±0.2	C3225X5R1A685M
10000000	±20%	2.3±0.2	C3225X5R1A106M
[10μF]			

RATED VOLTAGE Edc: 6.3V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
15000000	±20%	2.0±0.2	C3225X5R0J156M
[15μF]			
22000000	±20%	2.5±0.3	C3225X5R0J226M
[22μF]			

### TEMPERATURE CHARACTERISTICS: Y5V(+22, -82%)

RATED VOLTAGE Edc: 50V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
4700000	+80, -20%	1.6±0.2	C3225Y5V1H475Z
[4.7μF]			

RATED VOLTAGE Edc: 25V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
4700000	+80, -20%	1.6±0.2	C3225Y5V1E475Z
[4.7μF]			
10000000	+80, -20%	1.6±0.2	C3225Y5V1E106Z
[10μF]			

RATED VOLTAGE Edc: 16V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
10000000	+80, -20%	1.6±0.2	C3225Y5V1C106Z
[10μF]			
22000000	+80, -20%	2.0±0.2	C3225Y5V1C226Z
[22μF]			

RATED VOLTAGE Edc: 10V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
22000000	+80, -20%	2.0±0.2	C3225Y5V1A226Z
[22μF]			
47000000	+80, -20%	2.0±0.2	C3225Y5V1A476Z
[47μF]			

- For more information about products with other capacitance or other data, please contact us.
- Please contact us for the capacitance tolerance ±10% products of 10μF min. with temperature characteristics B, X7R and X5R.

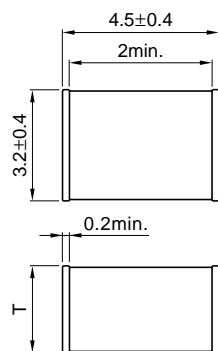
# Ceramic Capacitors

## For Smoothing

### SMD

## C Series

### C4532 (EIA:CC1812) TYPE SHAPES AND DIMENSIONS



Dimensions in mm

### CAPACITANCE RANGES:

#### CLASS 2 (TEMPERATURE STABLE)

#### TEMPERATURE CHARACTERISTICS: X7R(±15%)

RATED VOLTAGE E<sub>dc</sub>: 50V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
1000000	±10%	1.15±0.15	C4532X7R1H105K
[1μF]	±20%	1.15±0.15	C4532X7R1H105M
1500000	±10%	1.6±0.2	C4532X7R1H155K
[1.5μF]	±20%	1.6±0.2	C4532X7R1H155M
2200000	±10%	1.6±0.2	C4532X7R1H225K
[2.2μF]	±20%	1.6±0.2	C4532X7R1H225M
3300000	±10%	2.0±0.2	C4532X7R1H335K
[3.3μF]	±20%	2.0±0.2	C4532X7R1H335M

RATED VOLTAGE E<sub>dc</sub>: 25V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
3300000	±10%	1.6±0.2	C4532X7R1E335K
[3.3μF]	±20%	1.6±0.2	C4532X7R1E335M
4700000	±10%	1.6±0.2	C4532X7R1E475K
[4.7μF]	±20%	1.6±0.2	C4532X7R1E475M
6800000	±10%	2.0±0.2	C4532X7R1E685K
[6.8μF]	±20%	2.0±0.2	C4532X7R1E685M
10000000	±20%	2.5±0.3	C4532X7R1E106M
[10μF]			

RATED VOLTAGE E<sub>dc</sub>: 16V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
4700000	±10%	1.6±0.2	C4532X7R1C475K
[4.7μF]	±20%	1.6±0.2	C4532X7R1C475M
6800000	±10%	1.6±0.2	C4532X7R1C685K
[6.8μF]	±20%	1.6±0.2	C4532X7R1C685M
10000000	±20%	2.3±0.2	C4532X7R1C106M
[10μF]			

### TEMPERATURE CHARACTERISTICS: X5R(±15%)

RATED VOLTAGE E<sub>dc</sub>: 25V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
15000000	±20%	2.8±0.3	C4532X5R1E156M
[15μF]			

RATED VOLTAGE E<sub>dc</sub>: 16V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
22000000	±20%	2.3±0.2	C4532X5R1C226M
[22μF]			

RATED VOLTAGE E<sub>dc</sub>: 10V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
22000000	±20%	1.6±0.2	C4532X5R1A226M
[22μF]			
33000000	±20%	2.3±0.2	C4532X5R1A336M
[33μF]			

RATED VOLTAGE E<sub>dc</sub>: 6.3V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
47000000	±20%	2.5±0.3	C4532X5R0J476M
[47μF]			

### TEMPERATURE CHARACTERISTICS: Y5V(+22, -82%)

RATED VOLTAGE E<sub>dc</sub>: 50V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
10000000	+80, -20%	2.0±0.2	C4532Y5V1H106Z
[10μF]			

RATED VOLTAGE E<sub>dc</sub>: 25V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
22000000	+80, -20%	2.0±0.2	C4532Y5V1E226Z
[22μF]			

RATED VOLTAGE E<sub>dc</sub>: 16V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
47000000	+80, -20%	2.5±0.3	C4532Y5V1C476Z
[47μF]			

RATED VOLTAGE E<sub>dc</sub>: 10V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
100000000	+80, -20%	2.5±0.3	C4532Y5V1A107Z
[100μF]			

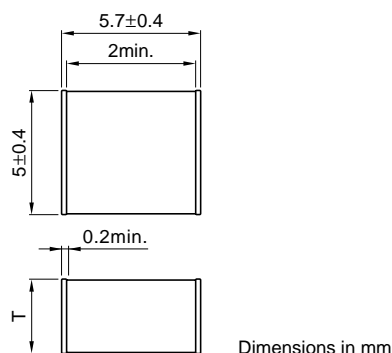
- For more information about products with other capacitance or other data, please contact us.
- Please contact us for the capacitance tolerance ±10% products of 10μF min. with temperature characteristics B, X7R and X5R.

# Ceramic Capacitors

## For Smoothing SMD

## C Series

### C5750 (EIA:CC2220) TYPE SHAPES AND DIMENSIONS



### CAPACITANCE RANGES:

#### CLASS 2 (TEMPERATURE STABLE)

#### TEMPERATURE CHARACTERISTICS: X7R(±15%)

RATED VOLTAGE E<sub>dc</sub>: 50V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
22000000 [2.2μF]	±10%	1.6±0.2	C5750X7R1H225K
	±20%	1.6±0.2	C5750X7R1H225M
33000000 [3.3μF]	±10%	1.6±0.2	C5750X7R1H335K
	±20%	1.6±0.2	C5750X7R1H335M
47000000 [4.7μF]	±10%	2.0±0.2	C5750X7R1H475K
	±20%	2.0±0.2	C5750X7R1H475M
68000000 [6.8μF]	±10%	2.5±0.3	C5750X7R1H685K
	±20%	2.5±0.3	C5750X7R1H685M

RATED VOLTAGE E<sub>dc</sub>: 25V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
68000000 [6.8μF]	±10%	1.6±0.2	C5750X7R1E685K
	±20%	1.6±0.2	C5750X7R1E685M
100000000 [10μF]	±20%	2.0±0.2	C5750X7R1E106M
150000000 [15μF]	±20%	2.3±0.2	C5750X7R1E156M
220000000 [22μF]	±20%	2.5±0.3	C5750X7R1E226M

RATED VOLTAGE E<sub>dc</sub>: 16V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
150000000 [15μF]	±20%	2.0±0.2	C5750X7R1C156M
220000000 [22μF]	±20%	2.3±0.2	C5750X7R1C226M

#### TEMPERATURE CHARACTERISTICS: X5R(±15%)

RATED VOLTAGE E<sub>dc</sub>: 50V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
100000000 [10μF]	±20%	2.3±0.2	C5750X5R1H106M

RATED VOLTAGE E<sub>dc</sub>: 25V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
220000000 [22μF]	±20%	2.3±0.2	C5750X5R1E226M

RATED VOLTAGE E<sub>dc</sub>: 16V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
330000000 [33μF]	±20%	2.0±0.2	C5750X5R1C336M
470000000 [47μF]	±20%	2.3±0.2	C5750X5R1C476M

RATED VOLTAGE E<sub>dc</sub>: 10V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
680000000 [68μF]	±20%	2.3±0.2	C5750X5R1A686M

RATED VOLTAGE E<sub>dc</sub>: 6.3V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
1000000000 [100μF]	±20%	2.8±0.3	C5750X5R0J107M

#### TEMPERATURE CHARACTERISTICS: Y5V(+22, -82%)

RATED VOLTAGE E<sub>dc</sub>: 50V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
220000000 [22μF]	+80, -20%	2.0±0.2	C5750Y5V1H226Z

RATED VOLTAGE E<sub>dc</sub>: 25V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
470000000 [47μF]	+80, -20%	2.0±0.2	C5750Y5V1E476Z

RATED VOLTAGE E<sub>dc</sub>: 16V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
1000000000 [100μF]	+80, -20%	2.5±0.3	C5750Y5V1C107Z

RATED VOLTAGE E<sub>dc</sub>: 10V

Capacitance (pF)	Tolerance	Thickness (mm)	Part No.
1000000000 [100μF]	+80, -20%	2.5±0.3	C5750Y5V1A107Z

- For more information about products with other capacitance or other data, please contact us.
- Please contact us for the capacitance tolerance ±10% products of 10μF min. with temperature characteristics B, X7R and X5R.

△ Specifications which provide more details for the proper and safe use of the described product are available upon request.  
All specifications are subject to change without notice.