

# Multilayer Ceramic Chip Capacitors

## C Series

Guaranteed at High Temperature

### FEATURES

- These products have no polarity.
- Their electrostatic capacity temperature response is stable at 15% even in high temperature ranges (up to 150°C).
- Provides high-precision performance because their electrostatic capacity temperature response is  $\pm 7.5\%$  in semi-high temperature ranges (up to 125°C).

### PRODUCT IDENTIFICATION

C 1608 X8R 2A 102 K □  
 (1) (2) (3) (4) (5) (6) (7)

(1) Series name

(2) Dimensions L×W

C1608	1.6×0.8mm
C2012	2.0×1.25mm
C3216	3.2×1.6mm

(3) Capacitance temperature characteristics

Class2

Temperature characteristics	Capacitance change	Temperature range
X8R	$\pm 15\%$	-55 to +150°C

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

2A	100V
1H	50V
1E	25V

### APPLICATIONS

- On-vehicle units mounted in motor vehicle engine rooms.
- Measuring instruments used in high temperature environments.
- For time constants and filter circuitry (up to 125°C).
- For temperature compensation (Class 1), Multilayer ceramic chip capacitors with support for high temperatures are prepared as the C0G or NP0 (with Ni internal electrodes) Series.

(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.

102	1,000pF
103	10,000pF

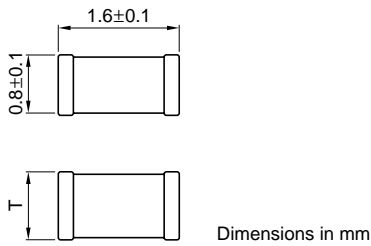
(6) Capacitance tolerance

Symbol	Tolerance
K	$\pm 10\%$

(7) Packaging style

T	Taping (reel)
B	Bulk

### C1608(EIA CC0603) TYPE SHAPES AND DIMENSIONS



### CAPACITANCE RANGES: CLASS 2 TEMPERATURE CHARACTERISTICS: EIA X8R(±15%) RATED VOLTAGE E<sub>dc</sub>: 100V

Capacitance (pF)	Tolerance	Thickness T (mm)max.	Part number
1,000	±10%	0.80±0.10	C1608X8R2A102K
1,500	±10%	0.80±0.10	C1608X8R2A152K
2,200	±10%	0.80±0.10	C1608X8R2A222K
3,300	±10%	0.80±0.10	C1608X8R2A332K
4,700	±10%	0.80±0.10	C1608X8R2A472K
6,800	±10%	0.80±0.10	C1608X8R2A682K
10,000	±10%	0.80±0.10	C1608X8R2A103K
15,000	±10%	0.80±0.10	C1608X8R2A153K

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

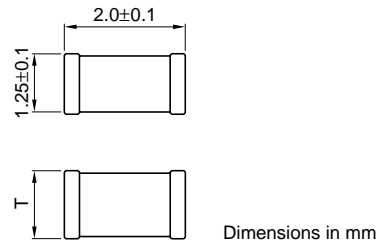
Capacitance (pF)	Tolerance	Thickness T (mm)max.	Part number
1,000	±10%	0.80±0.10	C1608X8R1H102K
1,500	±10%	0.80±0.10	C1608X8R1H152K
2,200	±10%	0.80±0.10	C1608X8R1H222K
3,300	±10%	0.80±0.10	C1608X8R1H332K
4,700	±10%	0.80±0.10	C1608X8R1H472K
6,800	±10%	0.80±0.10	C1608X8R1H682K
10,000	±10%	0.80±0.10	C1608X8R1H103K
15,000	±10%	0.80±0.10	C1608X8R1H153K
22,000	±10%	0.80±0.10	C1608X8R1H223K
33,000	±10%	0.80±0.10	C1608X8R1H333K
47,000	±10%	0.80±0.10	C1608X8R1H473K

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

Capacitance (pF)	Tolerance	Thickness T (mm)max.	Part number
68,000	±10%	0.80±0.10	C1608X8R1E683K
100,000	±10%	0.80±0.10	C1608X8R1E104K

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

### C2012(EIA CC0805) TYPE SHAPES AND DIMENSIONS



### CAPACITANCE RANGES: CLASS 2 TEMPERATURE CHARACTERISTICS: EIA X8R(±15%) RATED VOLTAGE E<sub>dc</sub>: 100V

Capacitance (pF)	Tolerance	Thickness T (mm)max.	Part number
22,000	±10%	1.25±0.2	C2012X8R2A223K

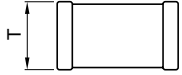
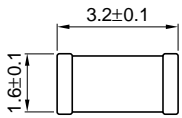
### RATED VOLTAGE E<sub>dc</sub>: 50V

Capacitance (pF)	Tolerance	Thickness T (mm)max.	Part number
68,000	±10%	1.25±0.2	C2012X8R1H683K
100,000	±10%	1.25±0.2	C2012X8R1H104K

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

Capacitance (pF)	Tolerance	Thickness T (mm)max.	Part number
150,000	±10%	0.85±0.15	C2012X8R1E154K
220,000	±10%	1.25±0.2	C2012X8R1E224K
330,000	±10%	1.25±0.2	C2012X8R1E334K

## C3216(EIA CC1206) TYPE SHAPES AND DIMENSIONS



Dimensions in mm

### CAPACITANCE RANGES: CLASS 2

#### TEMPERATURE CHARACTERISTICS: EIA X8R(±15%)

RATED VOLTAGE E<sub>dc</sub>: 100V

Capacitance (pF)	Tolerance	Thickness T (mm)max.	Part number
33,000	±10%	0.85±0.15	C3216X8R2A333K
47,000	±10%	0.85±0.15	C3216X8R2A473K
68,000	±10%	1.15±0.15	C3216X8R2A683K
100,000	±10%	1.15±0.15	C3216X8R2A104K
150,000	±10%	1.6±0.2	C3216X8R2A154K

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

Capacitance (pF)	Tolerance	Thickness T (mm)max.	Part number
150,000	±10%	0.85±0.15	C3216X8R1H154K
220,000	±10%	1.15±0.15	C3216X8R1H224K
330,000	±10%	1.6±0.2	C3216X8R1H334K
470,000	±10%	1.6±0.2	C3216X8R1H474K

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

Capacitance (pF)	Tolerance	Thickness T (mm)max.	Part number
330,000	±10%	0.85±0.15	C3216X8R1E334K
470,000	±10%	0.85±0.15	C3216X8R1E474K
680,000	±10%	1.15±0.15	C3216X8R1E684K
1,000,000 [1μF]	±10%	1.6±0.2	C3216X8R1E105K

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