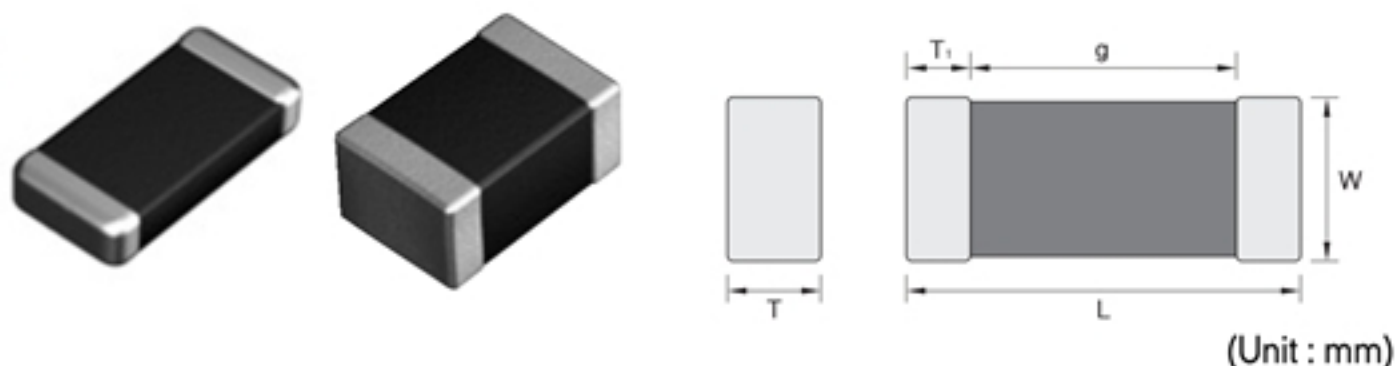


SMD Type

Shape & Dimensions



Code(inch)	Dimensions				
	Length		Width		T1(min)
	L	Tol(±)	W	Tol(±)	
0603(0201)	0.60	0.03	0.30	0.03	0.05
1005(0402)	1.00	0.05	0.50	0.05	0.05
1608(0603)	1.60	0.15	0.80	0.10	0.10
2012(0805)	2.00	0.20	1.25	0.15	0.10
3216(1206)	3.20	0.30	1.60	0.20	0.15
3225(1210)	3.20	0.40	2.50	0.25	0.15
4520(1808)	4.50	0.40	2.00	0.25	0.20
4532(1812)	4.50	0.40	3.20	0.30	0.20
5750(2220)	5.70	0.50	5.00	0.40	0.30

*1608 Size $\geq 10\mu\text{F} \Rightarrow W : 0.8 \pm 0.15, T : 0.8 \pm 0.15$

How to Order(Product Identification)

CS 1608 X7R 104 K 160 N R B

1 2 3 4 5 6 7 8 9

1 Type

CS : SMD

SA : ARRAY

2 Size Code

This is expressed in tens of a millimeter.

The first two digits are the length, the last two digits are width.

Size(mm)	0603	1005	1608	2012	3216	3225	4520	4532	5750

3 Temperature Coefficient Code

Temperature Characteristic	Temperature Range	Capacitance Change or Temperature Coefficient	Operating Temperature Range
C0G	-55 to 125°C	0±30ppm/°C	-55 to 125°C
X7R	-55 to 125°C	±15%	-55 to 125°C
X5R	-55 to 85°C	±15%	-55 to 85°C
Y5V	-30 to 85°C	+22, -82%	-30 to 85°C

4 Capacitance Code(Pico Farads)

The nominal capacitance value in pF is expressed by three digit numbers.

The first two digits represents significant figures and the last digit denotes the number of zero

Ex.) 104 = 100000pF R denotes decimal 8R2 = 8.2pF

5 Capacitance Tolerance Code

Code	Tolerance	Code	Tolerance
B	±0.1pF	M	±20%
C	±0.25pF	P	+100, -0%
D	±0.5pF	Z	+80, -20%
F	±1.0%	H	+0.25/-0pF
G	±2.0%	I	+0/-0.25pF
J	±5%	U	+5/-0%
K	±10%	V	+0/-5%

6 Voltage Code

Code	6R3	100	160	250	500	101	201	251	631	302
Vol.	DC 6.3V	DC 10V	DC 16V	DC 25V	DC 50V	DC 100V	DC 200V	DC 250V	DC 630V	DC 3000V

7 Termination Code

Ex.) N : Ni-Sn(Nickel-Tin Plate)

8 Packing Code

Ex.) R : Reel Type B : Bulk Type

9 Thickness Option

Thickness(mm)		Code	Thickness(mm)		Code
t	Tol(±)		t	Tol(±)	
0.30	0.03	Blank	1.30	0.20	E
0.50	0.05	Blank	1.35	0.20	H
0.60	0.10	A	1.60	0.20	I
0.80	0.10	B	1.80	0.20	J
0.85	0.15	B	2.00	0.25	K
1.00	0.15	E	2.50	0.25	L
1.10	0.15	E	2.80	0.30	M
1.15	0.15	E	3.20	0.30	N
1.25	0.15	E	5.00	0.40	O

X7R

Application

Stable class II dielectric properties, suited for by-pass and coupling purposes, filtering, frequency discrimination, DC blockage, and as voltage transient suppression elements.

Dielectric Characteristics

Temperature Characteristic	$\pm 15\%$
Operating Temperature	$-55\sim 125^{\circ}\text{C}$
Capacitance Tolerance	$\pm 10\%$, $\pm 20\%$, ($\pm 5\%$, $+80\sim -20\%$)
Dissipation Factor & Q	50V Min. : 2.5% Max. 25V Min. : 3.0% Max. 16V Min. : 3.5% Max. 10V Min. : 5.0% Max. 6.3V Min. : 5.0% Max. ($< 3.3\mu\text{F}$), 10% Max. ($\geq 3.3\mu\text{F}$) Thin layer large capacitors type 10% Max.
Insulation Resistance	More than 10,000M Ω or 500QF (Whichever is smaller) Thin layer large capacitors type 50QF Min.
Dielectric Strength	$> 2.5 \times \text{RVDC}$
Test Voltage	$1 \pm 0.2 \text{Vrms} (\leq 10\mu\text{F}, 10\text{V Min.})$ $0.5 \pm 0.1 \text{Vrms} (\leq 10\mu\text{F}, 6.3\text{V Max.})$ $0.5 \pm 0.1 \text{Vrms} (> 10\mu\text{F})$
Test Frequency	$1 \pm 0.1 \text{kHz} (\leq 10\mu\text{F}, 10\text{V Min.})$ $1 \pm 0.1 \text{kHz} (\leq 10\mu\text{F}, 6.3\text{V Max.})$ $120 \pm 24 \text{Hz} (> 10\mu\text{F})$

