Specification overview

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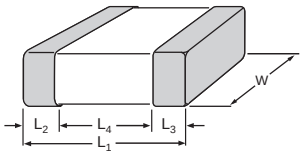
Description	TC code	Series	Capacitance range	Voltage range	Size
Discrete	NP0	General purpose	0.22 pF to 33 nF	16 V to 25 V	0201, 0402, 0603, 0805, 1206, 1210
		General purpose	0.22 pF to 390 pF	50 V	0201, 0402, 0603, 0805, 1206, 1210, 1812
		Medium voltage	10 pF to 22 nF	100 V to 630 V	0603, 0805, 1206, 1210, 1808, 1812
		High voltage	10 pF to 2.7 nF	1 kV, 2 kV, 3 kV, 4 kV	1206, 1210, 1808, 1812
		Microwave	0.47 pF to 120 pF	50 V	0603, 0805, 1206
	X7R	General purpose & High capacitance	100 pF to 22 µF	6.3 V to 50 V	0201, 0402, 0603, 0805, 1206, 1210, 1812
		Medium voltage	100 pF to 470 nF	100 V to 630 V	0603, 0805, 1206, 1210, 1808, 1812
		High voltage	100 pF to 33 nF	1 kV to 3 kV	1206, 1210, 1808, 1812
		Low inductance	10 nF to 220 nF	10 V to 50 V	0306, 0508, 0612
	X5R	General purpose & High capacitance	10 nF to 100 µF	6.3 V to 50 V	0201, 0402, 0603, 0805, 1206, 1210, 1812
	Y5V	General purpose & High capacitance	10 nF to 47 µF	6.3 V to 50 V	0201, 0402, 0603, 0805, 1206, 1210
Safety certification product	NP0	High voltage SC type	10 pF to 1 nF	X1/Y2, X2/Y3	1808, 1812
	X7R	High voltage SC type	150 pF to 1.5 nF	X1/Y2, X2/Y3	1808, 1812
C-Arrays	NP0	4-C arrays	10 pF to 1 nF	50 V	0508, 0612
	X7R	2-C arrays	10 nF to 100 nF	16 V	0405
		4-C arrays	220 pF to 100 nF	16 V to 50 V	0508, 0612
	Y5V	4-C arrays	10 nF to 100 nF	25 V	0508, 0612
High frequency	NP0	High frequency	0.22 pF to 10 pF	50 V	0402, 0603

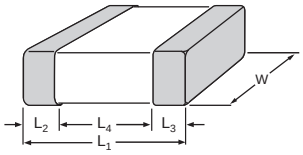
Case dimensions

Discrete capacitors



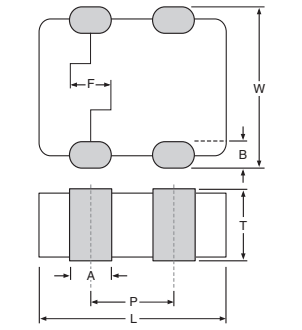
Case size designation		Dimensions in mm				
Inch-based	Metric	L_1	W	L_2 / L_3 min	L_2 / L_3 max	L_4 min
0201	0603M	0.6 ±0.03	0.3 ±0.03	0.10	0.20	0.20
0402	1005M	1.0 ±0.05	0.5 ±0.05	0.20	0.30	0.40
0603	1608M	1.6 ±0.10	0.8 ±0.07	0.20	0.60	0.40
0805	2012M	2.0 ±0.10	1.25 ±0.10	0.25	0.75	0.55
1206	3216M	3.2 ±0.15	1.6 ±0.15	0.25	0.75	1.40
1210	3225M	3.2 ±0.20	2.5 ±0.20	0.25	0.75	1.40
1808	4520M	4.5 ±0.40	2.0 ±0.30	0.25	0.75	2.20
1812	4532M	4.5 ±0.20	3.2 ±0.20	0.25	0.75	2.20

Discrete capacitors - High voltage SC type



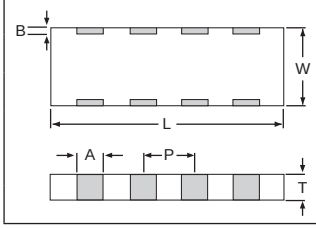
Case size designation		Dimensions in mm				
Inch-based	Metric	L_1	W	L_2 / L_3 min	L_2 / L_3 max	L_4 min
1808	4520M	4.8 ±0.30	2.0 ±0.30	0.25	0.75	3.20
1812	4532M	4.8 ±0.30	3.2 ±0.30	0.25	0.75	4.00

2-C arrays



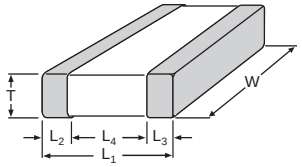
Case size designation		Demensions in mm						
Inch-based	Metric	L	W	T_{min}	T_{max}	A	B	P
0405 (2 x 0402)	1013M (2 x 1005)	1.37 ±0.15	1.0 ±0.15	0.5	0.7	0.36 ±0.1	0.2 ±0.1	0.64 ±0.1

4-C arrays



Case size designation		Dimensions in mm						
Inch-based	Metric	L	W	T_{min}	T_{max}	A	B	P
0508 (4 x 0402)	1220M (4 x 1005)	2.0 ±0.15	1.25 ±0.15	0.50	0.70	0.28 ±0.10	0.2 ±0.10	0.5 ±0.10
0612 (4 x 0603)	1632M (4 x 1608)	3.2 ±0.15	1.60 ±0.15	0.70	0.90	0.4 ±0.10	0.3 ±0.20	0.8 ±0.10

Discrete capacitors - Low inductance types only



Case size designation		Dimensions in mm					
Inch-based	Metric	L_1	W	T	L_2 / L_3 min	L_2 / L_3 max	L_4 min
0306	0816M	0.8 ±0.15	1.6 ±0.20	0.50 ±0.10	0.10	0.30	0.20
0508	1220M	1.25 ±0.20	2.0 ±0.20	0.85 ±0.10	0.13	0.46	0.38
0612	1632M	1.6 ±0.20	3.2 ±0.20	0.85 ±0.10	0.13	0.46	0.50

Ordering Information - Global part number

Global part number

Ordering example: CC0201KRX7R8BB102

CC 0201 K R X7R 8 B B 102

Series name (code 1-2)
- CA = 4 x Capacitance array
- CB = 2 x Capacitance array
- CC = Multilayer chip capacitance
- CL = Low inductance capacitance
- CM = Micro-wave capacitance
- CH = High frequency
- SC = Safety certification capacitance

Size code (code 3-6)
- 0201
- 0402
- 0603
- 0805
- 1206
- 1210
- 1808
- 1812
- 0306
- 0405
- 0508
- 0612

Capacitance tolerance (code 7)
- B = ±0.1 pF
- C = ±0.25 pF
- D = ±0.5 pF
- F = ±1%
- G = ±2%
- J = ±5%
- K = ±10%
- M = ±20%
- Z = -20% to +80%

Packing style (code 8)
- R = Paper tape reel Ø7 inch
- P = Paper tape reel Ø13 inch
- K = Embossed plastic tape reel Ø7 inch
- F = Embossed plastic tape reel Ø13 inch

TC material (code 9-11)
- NP0
- X5R
- X7R
- Y5V

Capacitance value (code 15-17)
- 102 = 1 000 pF
- (2 significant digits+number of zeros; the 3rd digit signifies the multiplying factor, and letter R is decimal point)
- 0 = x 1
- 1 = x 10^1
- 2 = x 10^2
- 3 = x 10^3
- 4 = x 10^4
- 5 = x 10^5
- 6 = x 10^6
- 7 = x 10^7
- X X R = Special capacitance
- (X X: capacitance before decimal point)

Process code (code 14)
- N = NP0
- B = Class 2 product

Termination (code 13)
- B = Ni-Barrier

Rated voltage (code 12)
- 4 = 4 V
- 5 = 6.3 V
- 6 = 10 V
- 7 = 16 V
- 8 = 25 V
- 9 = 50 V
- 0 = 100 V
- A = 200 V
- B = 500 V
- C = 1 kV
- D = 2 kV
- E = 3 kV
- G = 35 V
- H = 4 kV
- S = 2.5 kV
- T = X2 / Y3
- W = X1 / Y2
- Y = 250 V
- Z = 630 V

Phycomp CTC ordering code - Noth America								
Ordering example: 02012R102K8B20D								
0201	**2R**	**102**	**K**	**8**	**B**	**2**	**0**	**0**
Size code	Temperature characteristic	Capacitance (pF)	Tolerance	Voltage	Termination	Packing	Marking	Range identifier
0201 0402 0603 0805 1206 1210 1808 1812 0306 0405 0508 0612	CG = NP0 2B = X5R 2R = X7R 2F = Y5V	102 = 1 000 pF The third digit signifies the multiplying factor: 8 = x 0.01 9 = x 0.1 0 = x 1 1 = x 10 2 = x 100 3 = x 1 000 4 = x 10 000 5 = x 100 000 6 = x 1 000 000 7 = x 10 000 000	B = ±0.1 pF C = ±0.25 pF D = ±0.5 pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20% Z = -20% to +80%	5 = 6.3 V 6 = 10 V 7 = 16 V 8 = 25 V 9 = 50 V 0 = 100 V B = 200 V C = 250 V D = 500 V E = 1 kV F = 2 kV G = 3 kV H = 4 kV Z = 630 V S = 2.5 kV T = X2/Y3 W = X1/Y2	B = NiSn	2 = 180mm / 7” paper 3 = 330 mm / 13” paper B = 180mm / 7” blister F = 330 mm / 13” blister P = Bulk case	0 = No marking	0 = Conventional ceramic D = Class 2 MLCC L = Low inductance M = Microwave S = Safty certification capacitance