Features

- High volumetric efficiency
- Non-linear capacitance change
- High insulation resistance
- High pulse strength

Applications

- Blocking
- Coupling
- Decoupling
- Interference suppression

Terminals

- For soldering: silver-nickel-tin
- For conductive adhesion: silver-nickel

Packing

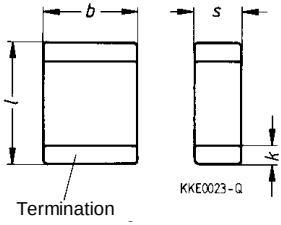
- Taping: blister and cardboard, for details refer to chapter “Taping and Packing”, page 105.
- Bulk case for sizes 0603, 0805 and 1206, for details cf. page 107.

Marking

Upon request

Maximum ratings

Climatic category
in accordance with IEC 68-1: 55/125/56



Dimensions (mm)

Size	*l*	*b*	*s*	*k* [1]
0402	1,0 ± 0,1	0,5 ± 0,05	0,5 ± 0,05	0,2
0603	1,6 ± 0,15	0,8 ± 0,1	0,8 ± 0,1	0,3
0805	2,0 ± 0,2	1,25 ± 0,15	1,3 max.	0,5
1206	3,2 ± 0,2	1,6 ± 0,15	1,3 max.	0,5
1210	3,2 ± 0,2	2,5 ± 0,2	1,3 max.	0,5
1812	4,5 ± 0,2	3,2 ± 0,2	1,3 max.	0,5
2220	5,7 ± 0,2	5,0 ± 0,2	1,3 max.	0,5

For reduced height refer to slim-line capacitors, page 55.

Available capacitance tolerances

Tolerance	Symbol
$\Delta C_R/C_R = \pm$ 5 %	J
$\Delta \boldsymbol{C_R}/\boldsymbol{C_R} = \pm$ **10 %**	**K** [2]
$\Delta C_R/C_R = \pm$ 20 %	M

Rated voltage values

V_R = 25 V, 50 V [3],100 V

1) Tolerances in accordance with CECC 32 101-801.
2) Standard tolerance
3) Also suitable for 63 V applications. (except type 0805: C_R > 47 nF).

Ordering codes for standard chip capacitors, X7R/2R1, 25 Vdc, AgNiSn terminals

Size	0402	0603	0805	1206	
C_R	Ordering code [1]				
	B37921-	B37931-	B37941-	B37872-	
470 pF	-K0471-K60 ▲				
560 pF	-K0561-K60 ▲				
680 pF	-K0681-K60 ▲				
820 pF	-K0821-K60 ▲				
1,0 nF	-K0102-K60 ▲				
1,2 nF	-K0122-K60 ▲				
1,5 nF	-K0152-K60 ▲				
1,8 nF	-K0182-K60 ▲				
2,2 nF	-K0222-K60 ▲				
2,7 nF					
3,3 nF					
3,9 nF					
4,7 nF		-K0472-K60 ❍			
5,6 nF		-K0562-K60 ❍			
6,8 nF		-K0682-K60 ❍			
8,2 nF		-K0822-K60 ❍			
10 nF		-K0103-K60 ❍	-K0103-K60 ❑		
12 nF		-K0123-K60 ❍	-K0123-K60 ❑		
15 nF		-K0153-K60 ❍	-K0153-K60 ❑		
18 nF		-K0183-K60 ❍	-K0183-K60 ❑		
22 nF		-K0223-K60 ❍	-K0223-K60 ❍	-K0223-K62 ❍	
27 nF			-K0273-K60 ❍	-K0273-K62 ❍	
33 nF			-K0333-K60 ❍	-K0333-K62 ❍	
39 nF			-K0393-K60 ❍	-K0393-K62 ❍	
47 nF			-K0473-K60 ❍	-K0473-K62 ❍	
56 nF			-K0563-K60 ❍	-K0563-K62 ❍	
68 nF			-K0683-K60 ❍	-K0683-K62 ❍	
82 nF			-K0823-K62 ◆	-K0823-K62 ❍	
100 nF			-K0104-K62 ◆	-K0104-K62 ❍	
120 nF				-K0124-K62 ❍	
150 nF				-K0154-K62 ❍	
180 nF				-K0184-K62 ◆	
220 nF				-K0224-K62 ◆	

Chip thickness: ▲: 0,5 ± 0,05 mm ❑: 0,6 ± 0,1 mm
❍: 0,8 ± 0,1 mm ◆: 1,2 ± 0,1 mm

1) The tables contain the ordering code for chip capacitors, V_R = 25 Vdc
– with a capacitance tolerance of ± 10 %
– in the respective standard packing:
blister tape (last two digits of ordering code: 62) or cardboard tape (last two digits of ordering code: 60) on 180 mm diameter reels. For other versions refer to “Delivery Modes and Ordering Code”, page 113.

Ordering codes for standard chip capacitors, X7R/2R1, 50 Vdc, AgNiSn terminals

Size	0603	0805	1206
C_R	Ordering code [1]		
	B37931-	B37941-	B37872-
220 pF	-K5221-K60 ❍		
270 pF	-K5271-K60 ❍		
330 pF	-K5331-K60 ❍		
390 pF	-K5391-K60 ❍		
470 pF	-K5471-K60 ❍	-K5471-K60 ❑	
560 pF	-K5561-K60 ❍	-K5561-K60 ❑	
680 pF	-K5681-K60 ❍	-K5681-K60 ❑	
820 pF	-K5821-K60 ❍	-K5821-K60 ❑	
1,0 nF	-K5102-K60 ❍	-K5102-K60 ❑	-K5102-K62 ❍
1,2 nF	-K5122-K60 ❍	-K5122-K60 ❑	-K5122-K62 ❍
1,5 nF	-K5152-K60 ❍	-K5152-K60 ❑	-K5152-K62 ❍
1,8 nF	-K5182-K60 ❍	-K5182-K60 ❑	-K5182-K62 ❍
2,2 nF	-K5222-K60 ❍	-K5222-K60 ❑	-K5222-K62 ❍
2,7 nF	-K5272-K60 ❍	-K5272-K60 ❑	-K5272-K62 ❍
3,3 nF	-K5332-K60 ❍	-K5332-K60 ❑	-K5332-K62 ❍
3,9 nF	-K5392-K60 ❍	-K5392-K60 ❑	-K5392-K62 ❍
4,7 nF	-K5472-K60 ❍	-K5472-K60 ❑	-K5472-K62 ❍
5,6 nF	-K5562-K60 ❍	-K5562-K60 ❑	-K5562-K62 ❍
6,8 nF	-K5682-K60 ❍	-K5682-K60 ❑	-K5682-K62 ❍
8,2 nF	-K5822-K60 ❍	-K5822-K60 ❑	-K5822-K62 ❍
10 nF	-K5103-K60 ❍	-K5103-K60 ❑	-K5103-K62 ❍
12 nF		-K5123-K60 ❑	-K5123-K62 ❍
15 nF		-K5153-K60 ❑	-K5153-K62 ❍
18 nF		-K5183-K60 ❑	-K5183-K62 ❍
22 nF		-K5223-K60 ❍	-K5223-K62 ❍
27 nF		-K5273-K60 ❍	-K5273-K62 ❍
33 nF		-K5333-K60 ❍	-K5333-K62 ❍
39 nF		-K5393-K62 ◆	-K5393-K62 ❍
47 nF		-K5473-K62 ◆	-K5473-K62 ❍
56 nF		-K5563-K62 ◆	-K5563-K62 ❍
68 nF		-K5683-K62 ◆	-K5683-K62 ❍
82 nF		-K5823-K62 ◆	-K5823-K62 ❍
100 nF		-K5104-K62 ◆	-K5104-K62 ❍

continued on next page...

Chip thickness: ❑: 0,6 ± 0,1 mm
❍: 0,8 ± 0,1 mm
◆: 1,2 ± 0,1 mm

Ordering codes for standard chip capacitors, X7R/2R1, 50 Vdc, AgNiSn terminals

Size	1210	1812	2220	
C_R	Ordering code [1]			
	B37950-	B37953-	B37956-	
10 nF	-K5103-K62 ❍			
12 nF	-K5123-K62 ❍			
15 nF	-K5153-K62 ❍			
18 nF	-K5183-K62 ❍			
22 nF	-K5223-K62 ❍			
27 nF	-K5273-K62 ❍			
33 nF	-K5333-K62 ❍			
39 nF	-K5393-K62 ❍			
47 nF	-K5473-K62 ❍			
56 nF	-K5563-K62 ❍			
68 nF	-K5683-K62 ❍			
82 nF	-K5823-K62 ❍			
100 nF	-K5104-K62 ❍	-K5104-K62 ◆		
120 nF	-K5124-K62 ❍	-K5124-K62 ◆		
150 nF	-K5154-K62 ❍	-K5154-K62 ◆		
180 nF	-K5184-K62 ◆	-K5184-K62 ◆		
220 nF	-K5224-K62 ◆	-K5224-K62 ◆		
270 nF		-K5274-K62 ◆		
330 nF		-K5334-K62 ◆		
390 nF		-K5394-K62 ◆		
470 nF		-K5474-K62 ◆	-K5474-K62 ◆	
560 nF			-K5564-K62 ◆	
680 nF			-K5684-K62 ◆	
820 nF			-K5824-K62 ◆	
1,0 µF			-K5105-K62 ◆	

Chip thickness: ❑: 0,6 ± 0,1 mm
❍: 0,8 ± 0,1 mm
◆: 1,2 ± 0,1 mm

1) The tables contain the ordering code for chip capacitors, V_R = 50 Vdc
– with a capacitance tolerance of ± 10 %
– in the respective standard packing:
blister tape (last two digits of ordering code: 62) or cardboard tape (last two digits of ordering code: 60) on 180 mm diameter reels. For other versions refer to “Delivery Modes and Ordering Code”, page 113.

Ordering codes for standard chip capacitors, X7R/2R1, 100 Vdc, AgNiSn terminals

Size	0805	1206	1210
C_R	Ordering code [1]		
	B37941-	B37872-	B37950-
470 pF	-K1471-K60 ❑		
560 pF	-K1561-K60 ❑		
680 pF	-K1681-K60 ❑		
820 pF	-K1821-K60 ❑		
1,0 nF	-K1102-K60 ❑	-K1102-K62 ❍	
1,2 nF	-K1122-K60 ❑	-K1122-K62 ❍	
1,5 nF	-K1152-K60 ❑	-K1152-K62 ❍	
1,8 nF	-K1182-K60 ❑	-K1182-K62 ❍	
2,2 nF	-K1222-K60 ❑	-K1222-K62 ❍	
2,7 nF	-K1272-K60 ❑	-K1272-K62 ❍	
3,3 nF	-K1332-K60 ❑	-K1332-K62 ❍	
3,9 nF	-K1392-K60 ❑	-K1392-K62 ❍	
4,7 nF	-K1472-K60 ❑	-K1472-K62 ❍	
5,6 nF	-K1562-K60 ❑	-K1562-K62 ❍	
6,8 nF	-K1682-K60 ❑	-K1682-K62 ❍	
8,2 nF	-K1822-K60 ❑	-K1822-K62 ❍	
10 nF	-K1103-K60 ❑	-K1103-K62 ❍	-K1103-K62 ❍
12 nF	-K1123-K60 ❑	-K1123-K62 ❍	-K1123-K62 ❍
15 nF	-K1153-K60 ❑	-K1153-K62 ❍	-K1153-K62 ❍
18 nF		-K1183-K62 ❍	-K1183-K62 ❍
22 nF		-K1223-K62 ❍	-K1223-K62 ❍
27 nF		-K1273-K62 ❍	-K1273-K62 ❍
33 nF		-K1333-K62 ❍	-K1333-K62 ❍
39 nF		-K1393-K62 ❍	-K1393-K62 ❍
47 nF		-K1473-K62 ❍	-K1473-K62 ❍
56 nF		-K1563-K62 ◆	-K1563-K62 ❍
68 nF		-K1683-K62 ◆	-K1683-K62 ❍
82 nF			-K1823-K62 ❍
100 nF			-K1104-K62 ❍
120 nF			-K1124-K62 ◆
150 nF			-K1154-K62 ◆

Chip thickness: ❑: 0,6 ± 0,1 mm
❍: 0,8 ± 0,1 mm
◆: 1,2 ± 0,1 mm

1) The tables contain the ordering code for chip capacitors, V_R = 100 Vdc
– with a capacitance tolerance of ± 10 %
– in the respective standard packing:
blister tape (last two digits of ordering code: 62) or cardboard tape (last two digits of ordering code: 60) on 180 mm diameter reels. For other versions refer to “Delivery Modes and Ordering Code”, page 113.

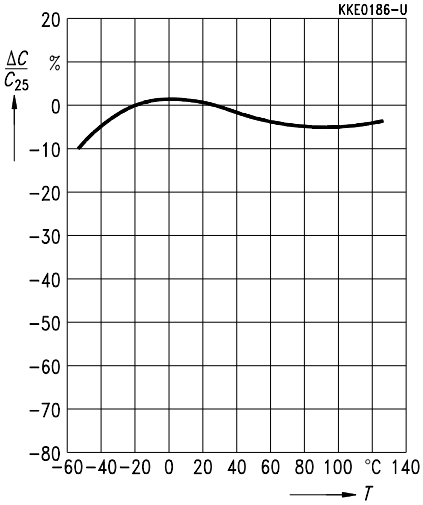
Ordering codes for chip capacitors,
X7R/2R1, 25 V/50 Vdc, AgNiSn terminals, bulk case packing

Size	0603	0603	0805	1206	
V_R	25 V	50 V	50 V	50 V	
C_R	Ordering code [1]				
	B37931-	B37931-	B37941-	B37872-	
220 pF		-K5221-K01			
270 pF		-K5271-K01			
330 pF		-K5331-K01			
390 pF		-K5391-K01			
470 pF		-K5471-K01	-K5471-K01		
560 pF		-K5561-K01	-K5561-K01		
680 pF		-K5681-K01	-K5681-K01		
820 pF		-K5821-K01	-K5821-K01		
1,0 nF		-K5102-K01	-K5102-K01	-K5102-K01	
1,2 nF		-K5122-K01	-K5122-K01	-K5122-K01	
1,5 nF		-K5152-K01	-K5152-K01	-K5152-K01	
1,8 nF		-K5182-K01	-K5182-K01	-K5182-K01	
2,2 nF		-K5222-K01	-K5222-K01	-K5222-K01	
2,7 nF		-K5272-K01	-K5272-K01	-K5272-K01	
3,3 nF		-K5332-K01	-K5332-K01	-K5332-K01	
3,9 nF		-K5392-K01	-K5392-K01	-K5392-K01	
4,7 nF	-K0472-K01	-K5472-K01	-K5472-K01	-K5472-K01	
5,6 nF	-K0562-K01	-K5562-K01	-K5562-K01	-K5562-K01	
6,8 nF	-K0682-K01	-K5682-K01	-K5682-K01	-K5682-K01	
8,2 nF	-K0822-K01	-K5822-K01	-K5822-K01	-K5822-K01	
10 nF	-K0103-K01	-K5103-K01	-K5103-K01	-K5103-K01	
12 nF	-K0123-K01		-K5123-K01	-K5123-K01	
15 nF	-K0153-K01		-K5153-K01	-K5153-K01	
18 nF	-K0183-K01		-K5183-K01	-K5183-K01	
22 nF	-K0223-K01			-K5223-K01	
27 nF				-K5273-K01	
33 nF				-K5333-K01	
39 nF				-K5393-K01	
47 nF				-K5473-K01	

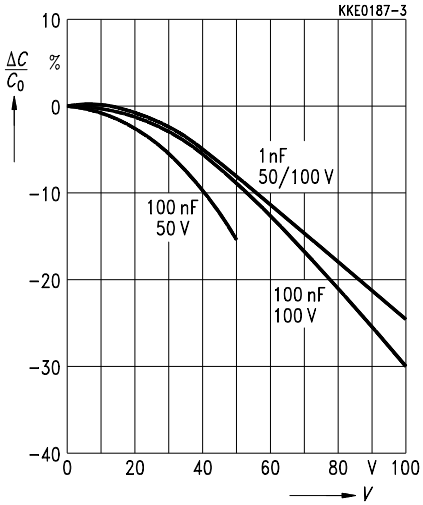
1) The tables contain the ordering code for chip capacitors, V_R = 25 Vdc or 50 Vdc, with a capacitance tolerance of ± 10 %. For other versions refer to “Delivery Modes and Ordering Code”, page 113.

Characteristics

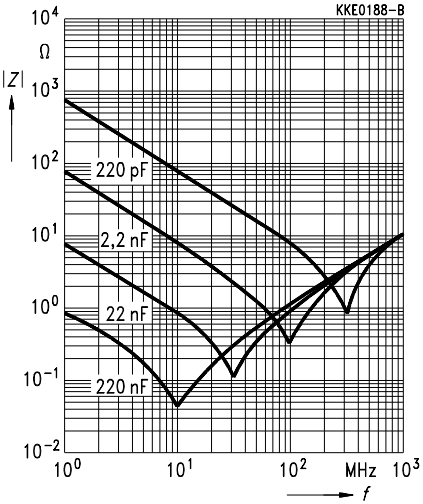
Capacitance change $\Delta C/C_{25}$ versus temperature T



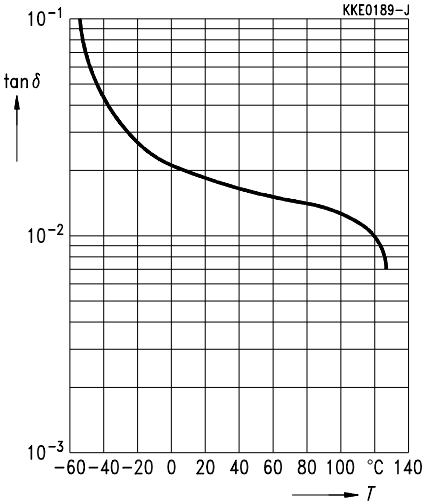
Capacitance change $\Delta C/C_0$ versus superimposed dc voltage V



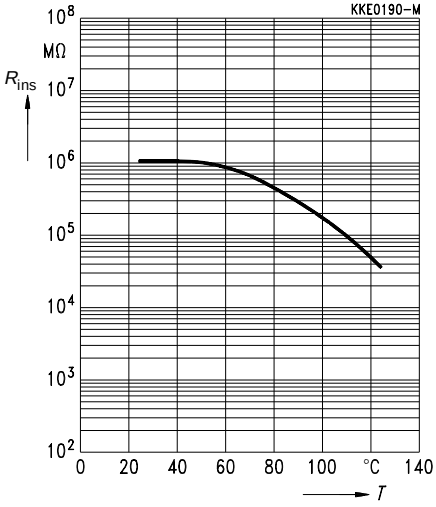
Impedance $|Z|$ versus frequency f



Dissipation factor tan δ versus temperature T



Insulation resistance R_{ins} versus temperature T



Capacitance change $\Delta C/C_1$ versus time t