



Features

- Good thermal stability
- High insulation resistance
- Low dissipation factor
- Low inductance

Applications

- Resonant circuits
- Filter circuits
- Timing elements
- Coupling and filtering, particularly in RF circuits

Terminations

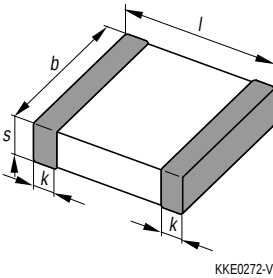
- For soldering: silver/nickel/tin
- For conductive adhesion: silver palladium

Packing

- Blister and cardboard tape, for details refer to chapter on “Taping and Packing”, page 111.
- Bulk case for sizes 0603, 0805 and 1206, for details see page 114.

Maximum ratings

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



Dimensions (mm)

Size inch/mm	<i>l</i>	<i>b</i>	<i>s</i>	<i>k</i>
0402 /1005	1,0 ± 0,10	0,50 ± 0,05	0,5 ± 0,05	0,2
0603 /1608	1,6 ± 0,15*)	0,80 ± 0,10	0,8 ± 0,10	0,3
0805 /2012	2,0 ± 0,20	1,25 ± 0,15	1,3 max.	0,5
1206 /3216	3,2 ± 0,20	1,60 ± 0,15	1,3 max.	0,5
1210 /3225	3,2 ± 0,30	2,50 ± 0,30	1,7 max.	0,5

*) For bulk cases: 1,6 ± 0,1
Tolerances in acc. with CECC 32101-801

Available capacitance tolerances

Rated capacitance <i>C_R</i>	Tolerance	Symbol
<i>C_R</i> < 10 pF:	$\Delta C_R = \pm 0,1 \text{ pF}$	B
	$\Delta C_R = \pm 0,25 \text{ pF}$	C
	$\Delta C_R = \pm 0,5 \text{ pF}$	D
<i>C_R</i> ≥ 10 pF:	$\Delta C_R/C_R = \pm 1 \%$	F
	$\Delta C_R/C_R = \pm 2 \%$	G
	$\Delta C_R/C_R = \pm 5 \%$	J
	$\Delta C_R/C_R = \pm 10 \%$	K

Standard tolerances in bold print
F and G tolerance not available for 200 V

Rated voltage values

V_R = 50 V, 100 V, 200 V

Product range

	COG/NPO/CH											
Size ¹⁾ inch mm	0402 1005		0603 1608		0805 2012			1206 3216			1210 3225	
Type	B37920		B37930		B37940			B37871			B37949	
V _R (Vdc)	50		50		50	100	200	50	100	200	50	200
1,0 pF	1,0 pF											
1,2 pF												
1,5 pF												
1,8 pF												
2,2 pF	2,0 pF ²⁾											
2,7 pF	3,0 pF ²⁾											
3,3 pF	4,0 pF ²⁾											
3,9 pF	5,0 pF ²⁾											
4,7 pF	6,0 pF ²⁾											
5,6 pF	7,0 pF ²⁾											
6,8 pF	8,0 pF ²⁾											
8,2 pF	9,0 pF ²⁾											
10 pF												
12 pF												
15 pF												
18 pF												
22 pF												
27 pF												
33 pF												
39 pF												
47 pF												
56 pF												
68 pF												
82 pF												

Chip thickness (s): 0,5 ± 0,1 mm 0,6 ± 0,1 mm 0,8 ± 0,1 mm 1,2 ± 0,1 mm

1) l × b (inch) / l × b (mm)

2) Only listed capacitance values available
Capacitance values < 1 pF upon request

Product range

	COG/NP0/CH												
Size ¹⁾ inch mm	0402 1005		0603 1608		0805 2012			1206 3216			1210 3225		
Type	B37920		B37930		B37940			B37871			B37949		
V _R (Vdc)	50		50		50	100	200	50	100	200	50	100	200
100 pF													
120 pF													
150 pF													
180 pF													
220 pF													
270 pF													
330 pF													
390 pF													
470 pF													
560 pF													
680 pF													
820 pF													
1,0 nF													
1,2 nF													
1,5 nF													
1,8 nF													
2,2 nF													
2,7 nF													
3,3 nF													
3,9 nF													
4,7 nF													
5,6 nF													
6,8 nF													
8,2 nF													
10 nF													

Chip thickness (s): 0,5 ± 0,1 mm 0,6 ± 0,1 mm 0,8 ± 0,1 mm 1,2 ± 0,1 mm 1,6 ± 0,1 mm

1) l × b (inch) / l × b (mm)

Ordering codes for C0G/NP0/CH, 50 Vdc, AgNiSn terminations

Size	0402/1005	0603/1608	0805/2012	1206/3216	1210/3225
C _R ¹⁾	Ordering code ²⁾				
	B37920-	B37930-	B37940-	B37871-	B37949-
1,0 pF	-K5010-C60 ▲	-K5010-C60 ○	-K5010-C60 □	-K5010-C60 ○	
1,2 pF		-K5010-C260 ○	-K5010-C260 □	-K5010-C260 ○	
1,5 pF		-K5010-C560 ○	-K5010-C560 □	-K5010-C560 ○	
1,8 pF		-K5010-C860 ○	-K5010-C860 □	-K5010-C860 ○	
2,2 (2,0) pF	-K5020-C60 ▲	-K5020-C260 ○	-K5020-C260 □	-K5020-C260 ○	
2,7 (3,0) pF	-K5030-C60 ▲	-K5020-C760 ○	-K5020-C760 □	-K5020-C760 ○	
3,3 (4,0) pF	-K5040-C60 ▲	-K5030-C360 ○	-K5030-C360 □	-K5030-C360 ○	
3,9 (5,0) pF	-K5050-C60 ▲	-K5030-C960 ○	-K5030-C960 □	-K5030-C960 ○	
4,7 (6,0) pF	-K5060-C60 ▲	-K5040-C760 ○	-K5040-C760 □	-K5040-C760 ○	
5,6 (7,0) pF	-K5070-C60 ▲	-K5050-C660 ○	-K5050-C660 □	-K5050-C660 ○	
6,8 (8,0) pF	-K5080-C60 ▲	-K5060-C860 ○	-K5060-C860 □	-K5060-C860 ○	
8,2 (9,0) pF	-K5090-C60 ▲	-K5080-C260 ○	-K5080-C260 □	-K5080-C260 ○	
10 pF	-K5100-J60 ▲	-K5100-J60 ○	-K5100-J60 □	-K5100-J60 ○	
12 pF	-K5120-J60 ▲	-K5120-J60 ○	-K5120-J60 □	-K5120-J60 ○	
15 pF	-K5150-J60 ▲	-K5150-J60 ○	-K5150-J60 □	-K5150-J60 ○	
18 pF	-K5180-J60 ▲	-K5180-J60 ○	-K5180-J60 □	-K5180-J60 ○	
22 pF	-K5220-J60 ▲	-K5220-J60 ○	-K5220-J60 □	-K5220-J60 ○	
27 pF	-K5270-J60 ▲	-K5270-J60 ○	-K5270-J60 □	-K5270-J60 ○	
33 pF	-K5330-J60 ▲	-K5330-J60 ○	-K5330-J60 □	-K5330-J60 ○	
39 pF	-K5390-J60 ▲	-K5390-J60 ○	-K5390-J60 □	-K5390-J60 ○	
47 pF	-K5470-J60 ▲	-K5470-J60 ○	-K5470-J60 □	-K5470-J60 ○	
56 pF	-K5560-J60 ▲	-K5560-J60 ○	-K5560-J60 □	-K5560-J60 ○	
68 pF	-K5680-J60 ▲	-K5680-J60 ○	-K5680-J60 □	-K5680-J60 ○	
82 pF	-K5820-J60 ▲	-K5820-J60 ○	-K5820-J60 □	-K5820-J60 ○	
100 pF	-K5101-J60 ▲	-K5101-J60 ○	-K5101-J60 □	-K5101-J60 ○	
120 pF	-K5121-J60 ▲	-K5121-J60 ○	-K5121-J60 □	-K5121-J60 ○	
150 pF	-K5151-J60 ▲	-K5151-J60 ○	-K5151-J60 □	-K5151-J60 ○	
180 pF	-K5181-J60 ▲	-K5181-J60 ○	-K5181-J60 □	-K5181-J60 ○	
220 pF	-K5221-J60 ▲	-K5221-J60 ○	-K5221-J60 □	-K5221-J60 ○	
270 pF		-K5271-J60 ○	-K5271-J60 □	-K5271-J60 ○	
330 pF		-K5331-J60 ○	-K5331-J60 □	-K5331-J60 ○	
390 pF		-K5391-J60 ○	-K5391-J60 □	-K5339-J60 ○	
470 pF		-K5471-J60 ○	-K5471-J60 □	-K5471-J60 ○	
560 pF			-K5561-J60 □	-K5561-J60 ○	
680 pF			-K5681-J60 □	-K5681-J60 ○	
820 pF			-K5821-J60 □	-K5821-J60 ○	

Chip thickness: ▲: 0,5 ± 0,1 mm □: 0,6 ± 0,1 mm ○: 0,8 ± 0,1 mm

1) E24 series available on request. For size 0402 only capacitance values in () available; capacitance values < 1 pF on request.

2) The tables contain the ordering codes for the standard capacitance tolerance:

C = ± 0,25 pF for < 10 pF; J = ± 5 % for ≥ 10 pF. Example: B37920-K5010-C60

For other available capacitance tolerances see page [15](#)

Ordering codes for COG/NP0/CH, 50 Vdc, AgNiSn terminations (cont'd)

Size	0402/1005	0603/1606	0805/2012	1206/3216	1210/3225
C _R ¹⁾	Ordering code ²⁾				
	B37920-	B37930-	B37940-	B37871-	B37949-
1,0 nF			-K5102-J60 □	-K5102-J60 ○	-K5102-J62 ○
1,2 nF			-K5122-J60 ○	-K5122-J60 ○	-K5122-J62 ○
1,5 nF			-K5152-J60 ○	-K5152-J60 ○	-K5152-J62 ○
1,8 nF			-K5182-J62 ◆	-K5182-J60 ○	-K5182-J62 ○
2,2 nF			-K5222-J62 ◆	-K5222-J60 ○	-K5222-J62 ○
2,7 nF				-K5272-J60 ○	-K5272-J62 ○
3,3 nF				-K5332-J60 ○	-K5332-J62 ○
3,9 nF				-K5392-J60 ○	-K5392-J62 ○
4,7 nF				-K5472-J62 ◆	-K5472-J62 ○
5,6 nF				-K5562-J62 ◆	-K5562-J62 ○
6,8 nF					-K5682-J62 ○
8,2 nF					-K5822-J62 ◆
10 nF					-K5103-J62 ◆

Chip thickness: □: 0,6 ± 0,1 mm ○: 0,8 ± 0,1 mm ◆: 1,2 ± 0,1 mm

1) E24 series available on request

2) The tables contain the ordering codes for the standard capacitance tolerance:

C = ± 0,25 pF for < 10 pF; J = ± 5 % for ≥ 10 pF. Example: B37940-K5102-J60

For other available capacitance tolerances see page 15

Ordering codes for C0G/NP0/CH, 100 Vdc, AgNiSn terminations

Size	0805/2012	1206/3216	Size	1206/3216	1210/3225
C _R	Ordering code ¹⁾		C _R	Ordering code ¹⁾	
	B37940-	B37871-		B37871-	B37949-
1,0 pF	-K1010-C60 □	-K1010-C60 ○	1,2 nF	-K1122-J60 ○	-K1122-J60 ○
1,2 pF	-K1010-C260 □	-K1010-C260 ○	1,5 nF	-K1152-J60 ○	-K1152-J60 ○
1,5 pF	-K1010-C560 □	-K1010-C560 ○	1,8 nF	-K1182-J60 ○	-K1182-J60 ○
1,8 pF	-K1010-C860 □	-K1010-C860 ○	2,2 nF	-K1222-J62 ◆	-K1222-J60 ○
2,2 pF	-K1020-C260 □	-K1020-C260 ○	2,7 nF		-K1272-J60 ○
2,7 pF	-K1020-C760 □	-K1020-C760 ○	3,3 nF		-K1332-J60 ○
3,3 pF	-K1030-C360 □	-K1030-C360 ○	3,9 nF		-K1392-J60 ○
3,9 pF	-K1030-C960 □	-K1030-C960 ○	4,7 nF		-K1472-J62 ◆
4,7 pF	-K1040-C760 □	-K1040-C760 ○	5,6 nF		-K1562-J62 ◆
5,6 pF	-K1050-C660 □	-K1050-C660 ○	6,8 nF		-K1682-J62 ◆
6,8 pF	-K1060-C860 □	-K1060-C860 ○			
8,2 pF	-K1080-C260 □	-K1080-C260 ○			
10 pF	-K1100-J60 □	-K1100-J60 ○			
12 pF	-K1120-J60 □	-K1120-J60 ○			
15 pF	-K1150-J60 □	-K1150-J60 ○			
18 pF	-K1180-J60 □	-K1180-J60 ○			
22 pF	-K1220-J60 □	-K1220-J60 ○			
27 pF	-K1270-J60 □	-K1270-J60 ○			
33 pF	-K1330-J60 □	-K1330-J60 ○			
39 pF	-K1390-J60 □	-K1390-J60 ○			
47 pF	-K1470-J60 □	-K1470-J60 ○			
56 pF	-K1560-J60 □	-K1560-J60 ○			
68 pF	-K1680-J60 □	-K1680-J60 ○			
82 pF	-K1820-J60 □	-K1820-J60 ○			
100 pF	-K1101-J60 □	-K1101-J60 ○			
120 pF	-K1121-J60 □	-K1121-J60 ○			
150 pF	-K1151-J60 □	-K1151-J60 ○			
180 pF	-K1181-J60 □	-K1181-J60 ○			
220 pF	-K1221-J60 □	-K1221-J60 ○			
270 pF	-K1271-J60 □	-K1271-J60 ○			
330 pF	-K1331-J60 □	-K1331-J60 ○			
390 pF	-K1391-J60 □	-K1391-J60 ○			
470 pF	-K1471-J60 □	-K1471-J60 ○			
560 pF	-K1561-J60 ○	-K1561-J60 ○			
680 pF	-K1681-J60 ○	-K1681-J60 ○			
820 pF	-K1821-J62 ◆	-K1821-J60 ○			
1,0 nF	-K1102-J62 ◆	-K1102-J60 ○			

Chip thickness: □: 0,6 ± 0,1 mm ○: 0,8 ± 0,1 mm ◆: 1,2 ± 0,1 mm

1) The tables contain the ordering codes for the standard capacitance tolerance:
C = ± 0,25 pF for < 10 pF; J = ± 5 % for ≥ 10 pF. Example: B37940-K1010-C60
For other available capacitance tolerances see page 15

Ordering codes for COG/NPO/CH, 200 Vdc, AgNiSn terminations

Size	0805/2012	1206/3216	1210/3225		
C _R	Ordering code ¹⁾				
	B37940-	B37871-	B37949-		
1,0 pF	-K2010-C60 □	-K2010-C60 ○			
1,2 pF	-K2010-C260 □	-K2010-C260 ○			
1,5 pF	-K2010-C560 □	-K2010-C560 ○			
1,8 pF	-K2010-C860 □	-K2010-C860 ○			
2,2 pF	-K2020-C260 □	-K2020-C260 ○			
2,7 pF	-K2020-C760 □	-K2020-C760 ○			
3,3 pF	-K2030-C360 □	-K2030-C360 ○			
3,9 pF	-K2030-C960 □	-K2030-C960 ○			
4,7 pF	-K2040-C760 □	-K2040-C760 ○			
5,6 pF	-K2050-C660 □	-K2050-C660 ○			
6,8 pF	-K2060-C860 □	-K2060-C860 ○			
8,2 pF	-K2080-C260 □	-K2080-C260 ○			
10 pF	-K2100-J60 □	-K2100-J60 ○			
12 pF	-K2120-J60 □	-K2120-J60 ○			
15 pF	-K2150-J60 □	-K2150-J60 ○			
18 pF	-K2180-J60 □	-K2180-J60 ○			
22 pF	-K2220-J60 □	-K2220-J60 ○			
27 pF	-K2270-J60 □	-K2270-J60 ○			
33 pF	-K2330-J60 □	-K2330-J60 ○			
39 pF	-K2390-J60 □	-K2390-J60 ○			
47 pF	-K2470-J60 □	-K2470-J60 ○			
56 pF	-K2560-J60 □	-K2560-J60 ○			
68 pF	-K2680-J60 □	-K2680-J60 ○			
82 pF	-K2820-J60 □	-K2820-J60 ○			
100 pF	-K2101-J60 □	-K2101-J60 ○	-K2101-J62 ○		
120 pF	-K2121-J60 □	-K2121-J60 ○	-K2121-J62 ○		
150 pF	-K2151-J60 ○	-K2151-J60 ○	-K2151-J62 ○		
180 pF	-K2181-J60 ○	-K2181-J60 ○	-K2181-J62 ○		
220 pF	-K2221-J60 ○	-K2221-J60 ○	-K2221-J62 ○		
270 pF	-K2271-J62 ◆	-K2271-J60 ○	-K2271-J62 ○		
330 pF	-K2331-J62 ◆	-K2331-J60 ○	-K2331-J62 ○		
390 pF		-K2391-J60 ○	-K2391-J62 ○		
470 pF		-K2471-J60 ○	-K2471-J62 ○		
560 pF		-K2561-J60 ○	-K2561-J62 ○		
680 pF		-K2681-J62 ◆	-K2681-J62 ○		
820 pF		-K2821-J62 ◆	-K2821-J62 ○		

Chip thickness: □: 0,6 ± 0,1 mm ○: 0,8 ± 0,1 mm ◆: 1,2 ± 0,1 mm

1) The tables contain the ordering codes for the standard capacitance tolerance:
C = ± 0,25 pF for < 10 pF; J = ± 5 % for ≥ 10 pF. Example: B37940-K2010-C62
For other available capacitance tolerances see page 15

Ordering codes for C0G/NP0/CH, 200 Vdc, AgNiSn terminations (cont'd)

Size	0805/2012	1206/3216	1210/3225		
C _R	Ordering code ¹⁾				
	B37940-	B37871-	B37949-		
1,0 nF		-K2102-J62 ◆	-K2102-J62 ○		
1,2 nF			-K2122-J62 ◆		
1,5 nF			-K2152-J62 ◆		
1,8 nF			-K2182-J62 ◆		
2,2 nF			-K2222-J62 ●		

Chip thickness: □: 0,6 ± 0,1 mm ○: 0,8 ± 0,1 mm ◆: 1,2 ± 0,1 mm ●: 1,6 ± 0,1 mm

1) The tables contain the ordering codes for the standard capacitance tolerance:
C = ± 0,25 pF for < 10 pF; J = ± 5 % for ≥ 10 pF. Example: B37871-K2102-J62
For other available capacitance tolerances see page [15](#)

Ordering codes for COG/NP0/CH, 50 Vdc, AgNiSn terminations, bulk case packing

Size	0603/1608	0805/2012	1206/3216	
C _R ¹⁾	Ordering code ²⁾			
	B37930-	B37940-	B37871-	
1,0 pF	-K5010-C01 ○	-K5010-C01 □	-K5010-C01 □	
1,2 pF	-K5010-C201 ○	-K5010-C201 □	-K5010-C201 □	
1,5 pF	-K5010-C501 ○	-K5010-C501 □	-K5010-C501 □	
1,8 pF	-K5010-C801 ○	-K5010-C801 □	-K5010-C801 □	
2,2 pF	-K5020-C201 ○	-K5020-C201 □	-K5020-C201 □	
2,7 pF	-K5020-C701 ○	-K5020-C701 □	-K5020-C701 □	
3,3 pF	-K5030-C301 ○	-K5030-C301 □	-K5030-C301 □	
3,9 pF	-K5030-C901 ○	-K5030-C901 □	-K5030-C901 □	
4,7 pF	-K5040-C701 ○	-K5040-C701 □	-K5040-C701 □	
5,6 pF	-K5050-C601 ○	-K5050-C601 □	-K5050-C601 □	
6,8 pF	-K5060-C801 ○	-K5060-C801 □	-K5060-C801 □	
8,2 pF	-K5080-C201 ○	-K5080-C201 □	-K5080-C201 □	
10 pF	-K5100-J01 ○	-K5100-J01 □	-K5100-J01 □	
12 pF	-K5120-J01 ○	-K5120-J01 □	-K5120-J01 □	
15 pF	-K5150-J01 ○	-K5150-J01 □	-K5150-J01 □	
18 pF	-K5180-J01 ○	-K5180-J01 □	-K5180-J01 □	
22 pF	-K5220-J01 ○	-K5220-J01 □	-K5220-J01 □	
27 pF	-K5270-J01 ○	-K5270-J01 □	-K5270-J01 □	
33 pF	-K5330-J01 ○	-K5330-J01 □	-K5330-J01 □	
39 pF	-K5390-J01 ○	-K5390-J01 □	-K5390-J01 □	
47 pF	-K5470-J01 ○	-K5470-J01 □	-K5470-J01 □	
56 pF	-K5560-J01 ○	-K5560-J01 □	-K5560-J01 □	
68 pF	-K5680-J01 ○	-K5680-J01 □	-K5680-J01 □	
82 pF	-K5820-J01 ○	-K5820-J01 □	-K5820-J01 □	
100 pF	-K5101-J01 ○	-K5101-J01 □	-K5101-J01 □	
120 pF	-K5121-J01 ○	-K5121-J01 □	-K5121-J01 □	
150 pF	-K5151-J01 ○	-K5151-J01 □	-K5151-J01 □	
180 pF	-K5181-J01 ○	-K5181-J01 □	-K5181-J01 □	
220 pF	-K5221-J01 ○	-K5221-J01 □	-K5221-J01 □	
270 pF	-K5271-J01 ○	-K5271-J01 □	-K5271-J01 □	
330 pF	-K5331-J01 ○	-K5331-J01 □	-K5331-J01 □	
390 pF	-K5391-J01 ○	-K5391-J01 □	-K5391-J01 □	
470 pF	-K5471-J01 ○	-K5471-J01 □	-K5471-J01 □	
560 pF		-K5561-J01 □	-K5561-J01 □	
680 pF		-K5681-J01 □	-K5681-J01 □	
820 pF		-K5821-J01 □	-K5821-J01 □	

Chip thickness: □: 0,6 ± 0,1 mm ○: 0,8 ± 0,1 mm

1) E24 series available on request

2) The tables contain the ordering codes for the standard capacitance tolerance:

C = ± 0,25 pF for < 10 pF; J = ± 5 % for ≥ 10 pF. Example: B37930-K5010-C01

For other available capacitance tolerances see page 15

Ordering codes for C0G/NP0/CH, 50 Vdc, AgNiSn terminations, bulk case packing (cont'd)

Size	0603/1608	0805/2012	1206/3216	
C _R ¹⁾	Ordering code ²⁾			
	B37930-	B37940-	B37871-	
1,0 nF		-K5102-J01 □	-K5102-J01 □	
1,2 nF			-K5122-J01 □	
1,5 nF			-K5152-J01 □	
1,8 nF			-K5182-J01 □	
2,2 nF			-K5222-J01 □	

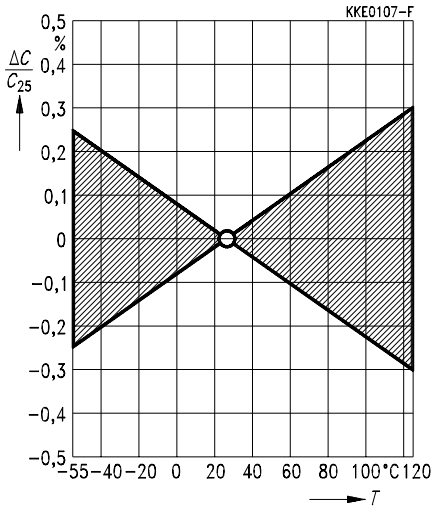
Chip thickness: □: 0,6 ± 0,1 mm

1) E24 series available on request

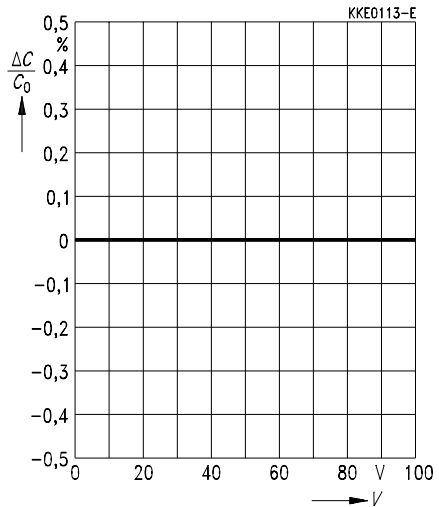
2) The tables contain the ordering codes for the standard capacitance tolerance:
C = ± 0,25 pF for < 10 pF; J = ± 5 % for ≥ 10 pF. Example: B37871-K5102-J01
For other available capacitance tolerances see page [15](#)

Characteristics

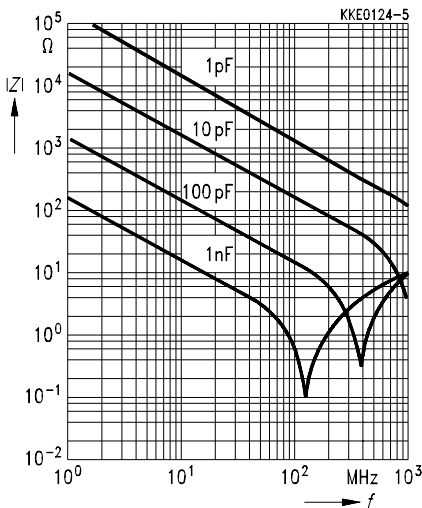
Capacitance change $\Delta C/C_{25}$ versus temperature T (tolerance range)



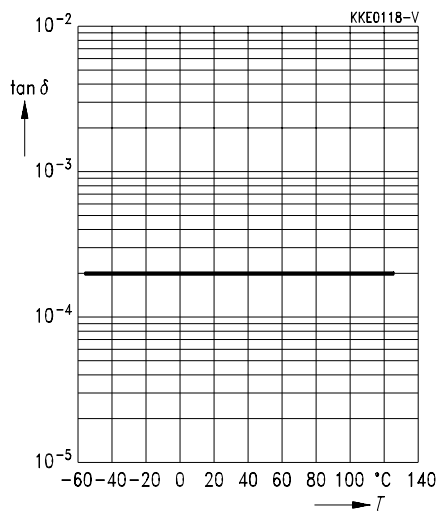
Capacitance change $\Delta C/C_0$ versus superimposed dc voltage V



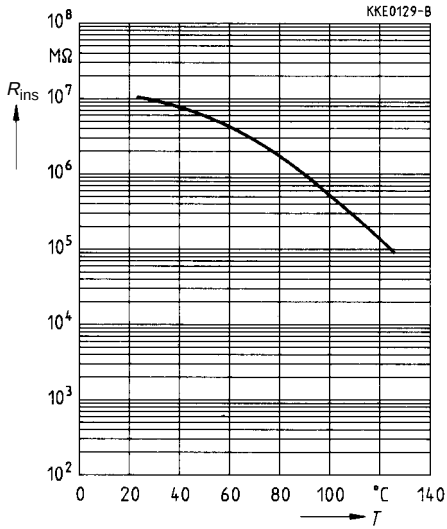
Impedance $|Z|$ versus frequency f



Dissipation factor $\tan \delta$ versus temperature T



Insulation resistance R_{ins} versus temperature T



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

