



**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


**Termination**

- For soldering: Nickel-barrier terminations (Ni)
- For conductive adhesion: Silver-palladium terminations (AgPd) on request

**Options**

- Alternative capacitance tolerances available on request

**Delivery mode**

- Cardboard and blister tape (blister tape for chip thickness  $\geq 1,2 \pm 0,1$  mm and case size 1210), 180-mm and 330-mm reel available
- Bulk case for case size 0402 on request
- Bulk case for case sizes 0603 (50 V) and 0805 (50 V)

**Electrical data**

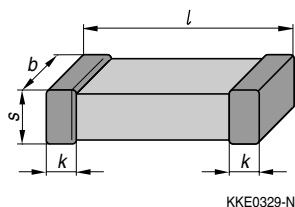
|                                                |               |                            |     |
|------------------------------------------------|---------------|----------------------------|-----|
| Temperature characteristic                     |               | C0G                        |     |
| Climatic category (IEC 60068-1)                |               | 55/125/56                  |     |
| Standard                                       |               | EIA                        |     |
| Dielectric                                     |               | Class 1                    |     |
| Rated voltage                                  | $V_R$         | 50, 100, 200               | VDC |
| Test voltage                                   | $V_{test}$    | $2,5 \cdot V_R/5$ s        | VDC |
| Capacitance range / E series                   | $C_R$         | 1 pF ... 10 nF (E6/E12)    |     |
| Temperature coefficient                        |               | $0 \pm 30 \cdot 10^{-6}/K$ |     |
| Dissipation factor (limit value)               | $\tan \delta$ | $< 1,0 \cdot 10^{-3}$      |     |
| Insulation resistance <sup>1)</sup> at + 25 °C | $R_{ins}$     | $> 10^5$                   | MΩ  |
| Insulation resistance <sup>1)</sup> at +125 °C | $R_{ins}$     | $> 10^4$                   | MΩ  |
| Time constant <sup>1)</sup> at + 25 °C         | $\tau$        | $> 1000$                   | s   |
| Time constant <sup>1)</sup> at +125 °C         | $\tau$        | $> 100$                    | s   |
| Operating temperature range                    | $T_{op}$      | -55 ... +125               | °C  |
| Ageing                                         |               | none                       |     |

1) For  $C_R > 10$  nF the time constant  $\tau = C \cdot R_{ins}$  is given.

**Capacitance tolerances**

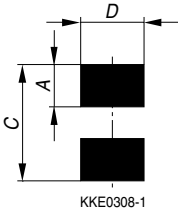
|             | $C_R \leq 4,7 \text{ pF}$            |                       |                      | $5,6 \text{ pF} \leq C_R \leq 8,2 \text{ pF}$ |                                       |                      |
|-------------|--------------------------------------|-----------------------|----------------------|-----------------------------------------------|---------------------------------------|----------------------|
| Code letter | B                                    | C<br>(standard)       | D                    | B                                             | C                                     | D<br>(standard)      |
| Tolerance   | $\pm 0,1 \text{ pF}$<br>(on request) | $\pm 0,25 \text{ pF}$ | $\pm 0,5 \text{ pF}$ | $\pm 0,1 \text{ pF}$<br>(on request)          | $\pm 0,25 \text{ pF}$<br>(on request) | $\pm 0,5 \text{ pF}$ |

|             | $C_R \geq 10 \text{ pF}$                                            |  |                                                                     |  |                        |
|-------------|---------------------------------------------------------------------|--|---------------------------------------------------------------------|--|------------------------|
| Code letter | F                                                                   |  | G                                                                   |  | J<br>(standard) K      |
| Tolerance   | $\pm 1 \%$ (on request for 50 V and 100 V; not available for 200 V) |  | $\pm 2 \%$ (on request for 50 V and 100 V; not available for 200 V) |  | $\pm 5 \%$ $\pm 10 \%$ |

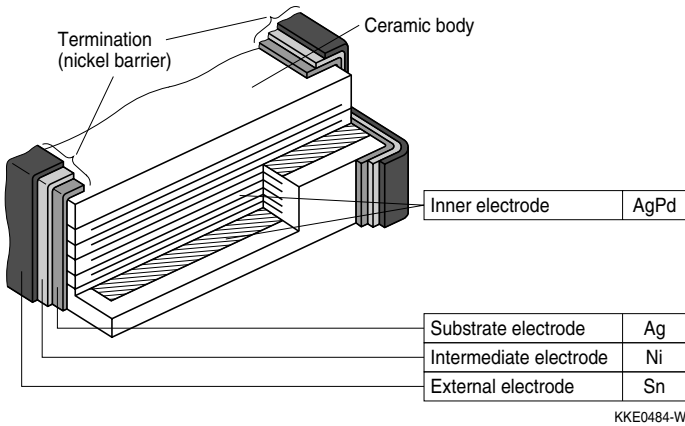
**Dimensional drawing**

**Dimensions (mm)**

| Case size (inch)<br>(mm) | 0402<br>1005   | 0603<br>1608   | 0805<br>2012    | 1206<br>3216   | 1210<br>3225   |
|--------------------------|----------------|----------------|-----------------|----------------|----------------|
| <i>l</i>                 | $1,0 \pm 0,10$ | $1,6 \pm 0,15$ | $2,0 \pm 0,20$  | $3,2 \pm 0,20$ | $3,2 \pm 0,30$ |
| <i>b</i>                 | $0,5 \pm 0,05$ | $0,8 \pm 0,10$ | $1,25 \pm 0,15$ | $1,6 \pm 0,15$ | $2,5 \pm 0,30$ |
| <i>s</i>                 | $0,5 \pm 0,05$ | $0,8 \pm 0,10$ | 1,30 max.       | 1,30 max.      | 1,70 max.      |
| <i>k</i>                 | 0,1 – 0,4      | 0,1 – 0,4      | 0,13 – 0,75     | 0,25 – 0,75    | 0,25 – 0,75    |

Tolerances to CECC 32101-801

**Recommended solder pad**

**Maximum dimensions (mm)**

| Case size | (inch/mm) | Type        | A   | C   | D   |
|-----------|-----------|-------------|-----|-----|-----|
| 0402/1005 |           | single chip | 0,6 | 1,7 | 0,6 |
| 0603/1608 |           | single chip | 1,0 | 3,0 | 1,0 |
| 0805/2012 |           | single chip | 1,2 | 3,4 | 1,3 |
| 1206/3216 |           | single chip | 1,2 | 4,5 | 1,8 |
| 1210/3225 |           | single chip | 1,2 | 4,5 | 2,8 |

**Termination**


**Product range chip capacitors**

|                                  | C0G          |  |              |  |              |     |     |              |     |  |              |     |
|----------------------------------|--------------|--|--------------|--|--------------|-----|-----|--------------|-----|--|--------------|-----|
| Size <sup>1)</sup><br>inch<br>mm | 0402<br>1005 |  | 0603<br>1608 |  | 0805<br>2012 |     |     | 1206<br>3216 |     |  | 1210<br>3225 |     |
| Type                             | B37920       |  | B37930       |  | B37940       |     |     | B37871       |     |  | B37949       |     |
| $V_R$ (VDC)<br>$C_R$             | 50           |  | 50           |  | 50           | 100 | 200 | 50           | 100 |  | 50           | 100 |
| 1,0 pF                           |              |  |              |  |              |     |     |              |     |  |              |     |
| 1,2 pF                           |              |  |              |  |              |     |     |              |     |  |              |     |
| 1,5 pF                           |              |  |              |  |              |     |     |              |     |  |              |     |
| 1,8 pF                           |              |  |              |  |              |     |     |              |     |  |              |     |
| 2,2 pF                           |              |  |              |  |              |     |     |              |     |  |              |     |
| 2,7 pF                           |              |  |              |  |              |     |     |              |     |  |              |     |
| 3,3 pF                           |              |  |              |  |              |     |     |              |     |  |              |     |
| 3,9 pF                           |              |  |              |  |              |     |     |              |     |  |              |     |
| 4,7 pF                           |              |  |              |  |              |     |     |              |     |  |              |     |
| 5,6 pF                           |              |  |              |  |              |     |     |              |     |  |              |     |
| 6,8 pF                           |              |  |              |  |              |     |     |              |     |  |              |     |
| 8,2 pF                           |              |  |              |  |              |     |     |              |     |  |              |     |
| 10 pF                            |              |  |              |  |              |     |     |              |     |  |              |     |
| 12 pF                            |              |  |              |  |              |     |     |              |     |  |              |     |
| 15 pF                            |              |  |              |  |              |     |     |              |     |  |              |     |
| 18 pF                            |              |  |              |  |              |     |     |              |     |  |              |     |
| 22 pF                            |              |  |              |  |              |     |     |              |     |  |              |     |
| 27 pF                            |              |  |              |  |              |     |     |              |     |  |              |     |
| 33 pF                            |              |  |              |  |              |     |     |              |     |  |              |     |
| 39 pF                            |              |  |              |  |              |     |     |              |     |  |              |     |
| 47 pF                            |              |  |              |  |              |     |     |              |     |  |              |     |
| 56 pF                            |              |  |              |  |              |     |     |              |     |  |              |     |
| 68 pF                            |              |  |              |  |              |     |     |              |     |  |              |     |
| 82 pF                            |              |  |              |  |              |     |     |              |     |  |              |     |

1)  $l \times b$  (inch) /  $l \times b$  (mm)

# Multilayer Ceramic Capacitors

C0G

C0G

## Product range chip capacitors

| C0G                              |              |  |              |  |              |     |     |              |     |  |              |     |
|----------------------------------|--------------|--|--------------|--|--------------|-----|-----|--------------|-----|--|--------------|-----|
| Size <sup>1)</sup><br>inch<br>mm | 0402<br>1005 |  | 0603<br>1608 |  | 0805<br>2012 |     |     | 1206<br>3216 |     |  | 1210<br>3225 |     |
| Type                             | B37920       |  | B37930       |  | B37940       |     |     | B37871       |     |  | B37949       |     |
| $V_R$ (VDC)<br>$C_R$             | 50           |  | 50           |  | 50           | 100 | 200 | 50           | 100 |  | 50           | 100 |
| 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                            |              |  |              |  |              |     |     |              |     |  |              |     |

1)  $l \times b$  (inch) /  $l \times b$  (mm)

# Ordering codes and packing for C0G, 50 VDC, nickel-barrier terminations

## Case size 0402, 50 VDC

| C <sub>R</sub> <sup>1)</sup> | Ordering code <sup>2)</sup> | Chip thickness<br>mm | Cardboard tape,<br>Ø 180-mm reel | Cardboard tape,<br>Ø 330-mm reel |
|------------------------------|-----------------------------|----------------------|----------------------------------|----------------------------------|
|                              |                             |                      | ** $\Delta$ 60                   | ** $\Delta$ 70                   |
|                              |                             |                      | pcs/reel                         | pcs/reel                         |
| 3,3 pF                       | B37920K5030C3**             | 0,5 ± 0,05           | 10000                            | 50000                            |
| 3,9 pF                       | B37920K5030C9**             | 0,5 ± 0,05           | 10000                            | 50000                            |
| 4,7 pF                       | B37920K5040C7**             | 0,5 ± 0,05           | 10000                            | 50000                            |
| 5,6 pF                       | B37920K5050D6**             | 0,5 ± 0,05           | 10000                            | 50000                            |
| 6,8 pF                       | B37920K5060D8**             | 0,5 ± 0,05           | 10000                            | 50000                            |
| 8,2 pF                       | B37920K5080D2**             | 0,5 ± 0,05           | 10000                            | 50000                            |
| 10 pF                        | B37920K5100J0**             | 0,5 ± 0,05           | 10000                            | 50000                            |
| 12 pF                        | B37920K5120J0**             | 0,5 ± 0,05           | 10000                            | 50000                            |
| 15 pF                        | B37920K5150J0**             | 0,5 ± 0,05           | 10000                            | 50000                            |
| 18 pF                        | B37920K5180J0**             | 0,5 ± 0,05           | 10000                            | 50000                            |
| 22 pF                        | B37920K5220J0**             | 0,5 ± 0,05           | 10000                            | 50000                            |
| 27 pF                        | B37920K5270J0**             | 0,5 ± 0,05           | 10000                            | 50000                            |
| 33 pF                        | B37920K5330J0**             | 0,5 ± 0,05           | 10000                            | 50000                            |
| 39 pF                        | B37920K5390J0**             | 0,5 ± 0,05           | 10000                            | 50000                            |
| 47 pF                        | B37920K5470J0**             | 0,5 ± 0,05           | 10000                            | 50000                            |
| 56 pF                        | B37920K5560J0**             | 0,5 ± 0,05           | 10000                            | 50000                            |
| 68 pF                        | B37920K5680J0**             | 0,5 ± 0,05           | 10000                            | 50000                            |
| 82 pF                        | B37920K5820J0**             | 0,5 ± 0,05           | 10000                            | 50000                            |
| 100 pF                       | B37920K5101J0**             | 0,5 ± 0,05           | 10000                            | 50000                            |

1) Capacitance values < 3,3 pF and > 100 pF on request.

2) The table contains the ordering codes for the standard capacitance tolerance.  
For other available capacitance tolerances see page 16.

# Multilayer Ceramic Capacitors

C0G; 0603

C0G

## Ordering codes and packing for C0G, 50 VDC, nickel-barrier terminations

### Case size 0603, 50 VDC

| C <sub>R</sub> | Ordering code <sup>1)</sup> | Chip thickness<br>mm | Cardboard tape,<br>Ø 180-mm reel | Cardboard tape,<br>Ø 330-mm reel | Bulk case |
|----------------|-----------------------------|----------------------|----------------------------------|----------------------------------|-----------|
|                |                             |                      | ** △ 60                          | ** △ 70                          | ** △ 01   |
|                |                             |                      | pcs/reel                         | pcs/reel                         | pcs       |
| 1,0 pF         | B37930K5010C0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 1,2 pF         | B37930K5010C2**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 1,5 pF         | B37930K5010C5**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 1,8 pF         | B37930K5010C8**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 2,2 pF         | B37930K5020C2**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 2,7 pF         | B37930K5020C7**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 3,3 pF         | B37930K5030C3**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 3,9 pF         | B37930K5030C9**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 4,7 pF         | B37930K5040C7**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 5,6 pF         | B37930K5050D6**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 6,8 pF         | B37930K5060D8**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 8,2 pF         | B37930K5080D2**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 10 pF          | B37930K5100J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 12 pF          | B37930K5120J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 15 pF          | B37930K5150J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 18 pF          | B37930K5180J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 22 pF          | B37930K5220J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 27 pF          | B37930K5270J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 33 pF          | B37930K5330J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 39 pF          | B37930K5390J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 47 pF          | B37930K5470J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 56 pF          | B37930K5560J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 68 pF          | B37930K5680J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 82 pF          | B37930K5820J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 100 pF         | B37930K5101J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 120 pF         | B37930K5121J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 150 pF         | B37930K5151J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 180 pF         | B37930K5181J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 220 pF         | B37930K5221J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 270 pF         | B37930K5271J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 330 pF         | B37930K5331J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 390 pF         | B37930K5391J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |
| 470 pF         | B37930K5471J0**             | 0,8 ± 0,1            | 4000                             | 16000                            | 15000     |

1) The table contains the ordering codes for the standard capacitance tolerance.  
For other available capacitance tolerances see page 16.

**Ordering codes and packing for C0G, 50 VDC, nickel-barrier terminations**
**Case size 0805, 50 VDC**

| C <sub>R</sub> | Ordering code <sup>1)</sup> | Chip thickness<br>mm | Cardboard tape,<br>Ø 180-mm reel | Cardboard tape,<br>Ø 330-mm reel | Bulk case         |
|----------------|-----------------------------|----------------------|----------------------------------|----------------------------------|-------------------|
|                |                             |                      | ** $\triangle$ 60                | ** $\triangle$ 70                | ** $\triangle$ 01 |
|                |                             |                      | pcs/reel                         | pcs/reel                         | pcs               |
| 1,0 pF         | B37940K5010C0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 1,2 pF         | B37940K5010C2**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 1,5 pF         | B37940K5010C5**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 1,8 pF         | B37940K5010C8**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 2,2 pF         | B37940K5020C2**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 2,7 pF         | B37940K5020C7**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 3,3 pF         | B37940K5030C3**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 3,9 pF         | B37940K5030C9**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 4,7 pF         | B37940K5040C7**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 5,6 pF         | B37940K5050D6**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 6,8 pF         | B37940K5060D8**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 8,2 pF         | B37940K5080D2**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 10 pF          | B37940K5100J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 12 pF          | B37940K5120J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 15 pF          | B37940K5150J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 18 pF          | B37940K5180J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 22 pF          | B37940K5220J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 27 pF          | B37940K5270J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 33 pF          | B37940K5330J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 39 pF          | B37940K5390J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 47 pF          | B37940K5470J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 56 pF          | B37940K5560J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 68 pF          | B37940K5680J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 82 pF          | B37940K5820J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 100 pF         | B37940K5101J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 120 pF         | B37940K5121J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 150 pF         | B37940K5151J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 180 pF         | B37940K5181J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 220 pF         | B37940K5221J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 270 pF         | B37940K5271J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 330 pF         | B37940K5331J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 390 pF         | B37940K5391J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 470 pF         | B37940K5471J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |

1) The table contains the ordering codes for the standard capacitance tolerance.  
For other available capacitance tolerances see page 16.

# Multilayer Ceramic Capacitors

C0G; 0805

C0G

## Ordering codes and packing for C0G, 50 VDC, nickel-barrier terminations

### Case size 0805, 50 VDC

| $C_R$  | Ordering code <sup>1)</sup> | Chip thickness<br>mm | Cardboard tape,<br>Ø 180-mm reel | Cardboard tape,<br>Ø 330-mm reel | Bulk case         |
|--------|-----------------------------|----------------------|----------------------------------|----------------------------------|-------------------|
|        |                             |                      | ** $\triangle$ 60                | ** $\triangle$ 70                | ** $\triangle$ 01 |
|        |                             |                      | pcs/reel                         | pcs/reel                         | pcs               |
| 560 pF | B37940K5561J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 680 pF | B37940K5681J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 820 pF | B37940K5821J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 1,0 nF | B37940K5102J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            | 10000             |
| 1,2 nF | B37940K5122J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            | —                 |
| 1,5 nF | B37940K5152J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            | —                 |
| 1,8 nF | B37940K5182J0**             | 1,2 $\pm$ 0,1        | 3000 <sup>2)</sup>               | 12000 <sup>3)</sup>              | —                 |
| 2,2 nF | B37940K5222J0**             | 1,2 $\pm$ 0,1        | 3000 <sup>2)</sup>               | 12000 <sup>3)</sup>              | —                 |

1) The table contains the ordering codes for the standard capacitance tolerance.

For other available capacitance tolerances see page 16.

2) Blister tape, 180-mm reel, ordering code \*\*  $\triangle$  62

3) Blister tape, 330-mm reel, ordering code \*\*  $\triangle$  72

# Ordering codes and packing for C0G, 100 VDC, nickel-barrier terminations

## Case size 0805, 100 VDC

| C <sub>R</sub> | Ordering code <sup>1)</sup> | Chip thickness<br>mm | Cardboard tape,<br>Ø 180-mm reel | Cardboard tape,<br>Ø 330-mm reel |
|----------------|-----------------------------|----------------------|----------------------------------|----------------------------------|
|                |                             |                      | ** $\triangle$ 60                | ** $\triangle$ 70                |
|                |                             |                      | pcs/reel                         | pcs/reel                         |
| 1,0 pF         | B37940K1010C0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 1,2 pF         | B37940K1010C2**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 1,5 pF         | B37940K1010C5**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 1,8 pF         | B37940K1010C8**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 2,2 pF         | B37940K1020C2**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 2,7 pF         | B37940K1020C7**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 3,3 pF         | B37940K1030C3**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 3,9 pF         | B37940K1030C9**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 4,7 pF         | B37940K1040C7**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 5,6 pF         | B37940K1050D6**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 6,8 pF         | B37940K1060D8**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 8,2 pF         | B37940K1080D2**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 10 pF          | B37940K1100J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 12 pF          | B37940K1120J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 15 pF          | B37940K1150J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 18 pF          | B37940K1180J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 22 pF          | B37940K1220J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 27 pF          | B37940K1270J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 33 pF          | B37940K1330J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 39 pF          | B37940K1390J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 47 pF          | B37940K1470J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 56 pF          | B37940K1560J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 68 pF          | B37940K1680J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 82 pF          | B37940K1820J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 100 pF         | B37940K1101J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 120 pF         | B37940K1121J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 150 pF         | B37940K1151J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 180 pF         | B37940K1181J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 220 pF         | B37940K1221J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 270 pF         | B37940K1271J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 330 pF         | B37940K1331J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 390 pF         | B37940K1391J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 470 pF         | B37940K1471J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |

1) The table contains the ordering codes for the standard capacitance tolerance.  
For other available capacitance tolerances see page 16.

# Multilayer Ceramic Capacitors

C0G; 0805

C0G

## Ordering codes and packing for C0G, 100 VDC, nickel-barrier terminations

### Case size 0805, 100 VDC

| $C_R$  | Ordering code <sup>1)</sup> | Chip thickness<br>mm | Cardboard tape,<br>Ø 180-mm reel | Cardboard tape,<br>Ø 330-mm reel |
|--------|-----------------------------|----------------------|----------------------------------|----------------------------------|
|        |                             |                      | ** $\triangle$ 60                | ** $\triangle$ 70                |
|        |                             |                      | pcs/reel                         | pcs/reel                         |
| 560 pF | B37940K1561J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 680 pF | B37940K1681J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 820 pF | B37940K1821J0**             | 1,2 $\pm$ 0,1        | 3000 <sup>2)</sup>               | 12000 <sup>3)</sup>              |
| 1,0 nF | B37940K1102J0**             | 1,2 $\pm$ 0,1        | 3000 <sup>2)</sup>               | 12000 <sup>3)</sup>              |

1) The table contains the ordering codes for the standard capacitance tolerance.

For other available capacitance tolerances see page 16.

2) Blister tape, 180-mm reel, ordering code \*\*  $\triangle$  62

3) Blister tape, 330-mm reel, ordering code \*\*  $\triangle$  72

# Ordering codes and packing for C0G, 200 VDC, nickel-barrier terminations

## Case size 0805, 200 VDC

| C <sub>R</sub> <sup>1)</sup> | Ordering code <sup>2)</sup> | Chip thickness<br>mm | Cardboard tape,<br>Ø 180-mm reel | Cardboard tape,<br>Ø 330-mm reel |
|------------------------------|-----------------------------|----------------------|----------------------------------|----------------------------------|
|                              |                             |                      | ** $\triangle$ 60                | ** $\triangle$ 70                |
|                              |                             |                      | pcs/reel                         | pcs/reel                         |
| 2,2 pF                       | B37940K2020C2**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 3,3 pF                       | B37940K2030C3**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 4,7 pF                       | B37940K2040C7**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 6,8 pF                       | B37940K2060D8**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 10 pF                        | B37940K2100J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 15 pF                        | B37940K2150J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 22 pF                        | B37940K2220J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 33 pF                        | B37940K2330J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 47 pF                        | B37940K2470J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 68 pF                        | B37940K2680J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 100 pF                       | B37940K2101J0**             | 0,6 $\pm$ 0,1        | 5000                             | 20000                            |
| 150 pF                       | B37940K2151J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 220 pF                       | B37940K2221J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 330 pF                       | B37940K2331J0**             | 1,2 $\pm$ 0,1        | 3000 <sup>3)</sup>               | 12000 <sup>4)</sup>              |

1) Other capacitance values on request.

2) The table contains the ordering codes for the standard capacitance tolerance.

For other available capacitance tolerances see page 16.

3) Blister tape, 180-mm reel, ordering code \*\*  $\triangle$  62

4) Blister tape, 330-mm reel, ordering code \*\*  $\triangle$  72

# Multilayer Ceramic Capacitors

C0G; 1206

C0G

## Ordering codes and packing for C0G, 50 VDC, nickel-barrier terminations

### Case size 1206, 50 VDC

| C <sub>R</sub> | Ordering code <sup>1)</sup> | Chip thickness | Cardboard tape,<br>Ø 180-mm reel | Cardboard tape,<br>Ø 330-mm reel |
|----------------|-----------------------------|----------------|----------------------------------|----------------------------------|
|                |                             |                | ** $\triangle$ 60                | ** $\triangle$ 70                |
|                |                             | mm             | pcs/reel                         | pcs/reel                         |
| 1,0 pF         | B37871K5010C0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 1,2 pF         | B37871K5010C2**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 1,5 pF         | B37871K5010C5**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 1,8 pF         | B37871K5010C8**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 2,2 pF         | B37871K5020C2**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 2,7 pF         | B37871K5020C7**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 3,3 pF         | B37871K5030C3**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 3,9 pF         | B37871K5030C9**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 4,7 pF         | B37871K5040C7**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 5,6 pF         | B37871K5050D6**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 6,8 pF         | B37871K5060D8**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 8,2 pF         | B37871K5080D2**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 10 pF          | B37871K5100J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 12 pF          | B37871K5120J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 15 pF          | B37871K5150J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 18 pF          | B37871K5180J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 22 pF          | B37871K5220J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 27 pF          | B37871K5270J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 33 pF          | B37871K5330J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 39 pF          | B37871K5390J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 47 pF          | B37871K5470J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 56 pF          | B37871K5560J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 68 pF          | B37871K5680J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 82 pF          | B37871K5820J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 100 pF         | B37871K5101J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 120 pF         | B37871K5121J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 150 pF         | B37871K5151J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 180 pF         | B37871K5181J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 220 pF         | B37871K5221J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 270 pF         | B37871K5271J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 330 pF         | B37871K5331J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 390 pF         | B37871K5391J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |
| 470 pF         | B37871K5471J0**             | 0,8 $\pm$ 0,1  | 4000                             | 16000                            |

1) The table contains the ordering codes for the standard capacitance tolerance.  
For other available capacitance tolerances see page 16.

# Ordering codes and packing for C0G, 50 VDC, nickel-barrier terminations

## Case size 1206, 50 VDC

| $C_R$  | Ordering code <sup>1)</sup> | Chip thickness<br>mm | Cardboard tape,<br>Ø 180-mm reel | Cardboard tape,<br>Ø 330-mm reel |
|--------|-----------------------------|----------------------|----------------------------------|----------------------------------|
|        |                             |                      | ** $\triangle$ 60                | ** $\triangle$ 70                |
|        |                             |                      | pcs/reel                         | pcs/reel                         |
| 560 pF | B37871K5561J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 680 pF | B37871K5681J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 820 pF | B37871K5821J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 1,0 nF | B37871K5102J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 1,2 nF | B37871K5122J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 1,5 nF | B37871K5152J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 1,8 nF | B37871K5182J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 2,2 nF | B37871K5222J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 2,7 nF | B37871K5272J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 3,3 nF | B37871K5332J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 3,9 nF | B37871K5392J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 4,7 nF | B37871K5472J0**             | 1,2 $\pm$ 0,1        | 3000 <sup>2)</sup>               | 12000 <sup>3)</sup>              |
| 5,6 nF | B37871K5562J0**             | 1,2 $\pm$ 0,1        | 3000 <sup>2)</sup>               | 12000 <sup>3)</sup>              |

1) The table contains the ordering codes for the standard capacitance tolerance.

For other available capacitance tolerances see page 16.

2) Blister tape, 180-mm reel, ordering code \*\*  $\triangle$  62

3) Blister tape, 330-mm reel, ordering code \*\*  $\triangle$  72

# Multilayer Ceramic Capacitors

C0G; 1206

C0G

## Ordering codes and packing for C0G, 100 VDC, nickel-barrier terminations

### Case size 1206, 100 VDC

| C <sub>R</sub> | Ordering code <sup>1)</sup> | Chip thickness<br>mm | Cardboard tape,<br>Ø 180-mm reel | Cardboard tape,<br>Ø 330-mm reel |
|----------------|-----------------------------|----------------------|----------------------------------|----------------------------------|
|                |                             |                      | ** $\triangle$ 60                | ** $\triangle$ 70                |
|                |                             |                      | pcs/reel                         | pcs/reel                         |
| 1,0 pF         | B37871K1010C0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 1,5 pF         | B37871K1010C5**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 2,2 pF         | B37871K1020C2**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 3,3 pF         | B37871K1030C3**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 4,7 pF         | B37871K1040C7**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 6,8 pF         | B37871K1060D8**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 10 pF          | B37871K1100J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 15 pF          | B37871K1150J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 22 pF          | B37871K1220J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 33 pF          | B37871K1330J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 47 pF          | B37871K1470J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 68 pF          | B37871K1680J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 100 pF         | B37871K1101J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 150 pF         | B37871K1151J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 220 pF         | B37871K1221J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 330 pF         | B37871K1331J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 470 pF         | B37871K1471J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 680 pF         | B37871K1681J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 1,0 nF         | B37871K1102J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 1,5 nF         | B37871K1152J0**             | 0,8 $\pm$ 0,1        | 4000                             | 16000                            |
| 2,2 nF         | B37871K1222J0**             | 1,2 $\pm$ 0,1        | 3000 <sup>2)</sup>               | 12000 <sup>3)</sup>              |

1) The table contains the ordering codes for the standard capacitance tolerance.

For other available capacitance tolerances see page 16.

2) Blister tape, 180-mm reel, ordering code \*\*  $\triangle$  62

3) Blister tape, 330-mm reel, ordering code \*\*  $\triangle$  72

# Ordering codes and packing for C0G, 50 VDC, nickel-barrier terminations

## Case size 1210, 50 VDC

| C <sub>R</sub> | Ordering code <sup>1)</sup> | Chip thickness<br>mm | Blister tape,<br>Ø 180-mm reel | Blister tape,<br>Ø 330-mm reel |
|----------------|-----------------------------|----------------------|--------------------------------|--------------------------------|
|                |                             |                      | ** $\Delta$ 62                 | ** $\Delta$ 72                 |
|                |                             |                      | pcs/reel                       | pcs/reel                       |
| 1,0 nF         | B37949K5102J0**             | 0,8 $\pm$ 0,1        | 4000                           | 16000                          |
| 1,5 nF         | B37949K5152J0**             | 0,8 $\pm$ 0,1        | 4000                           | 16000                          |
| 2,2 nF         | B37949K5222J0**             | 0,8 $\pm$ 0,1        | 4000                           | 16000                          |
| 3,3 nF         | B37949K5332J0**             | 0,8 $\pm$ 0,1        | 4000                           | 16000                          |
| 4,7 nF         | B37949K5472J0**             | 0,8 $\pm$ 0,1        | 4000                           | 16000                          |
| 6,8 nF         | B37949K5682J0**             | 0,8 $\pm$ 0,1        | 4000                           | 16000                          |
| 10 nF          | B37949K5103J0**             | 1,2 $\pm$ 0,1        | 3000                           | 12000                          |

1) The table contains the ordering codes for the standard capacitance tolerance.  
For other available capacitance tolerances see page 16.

# Multilayer Ceramic Capacitors

C0G; 1210

C0G

## Ordering codes and packing for C0G, 100 VDC, nickel-barrier terminations

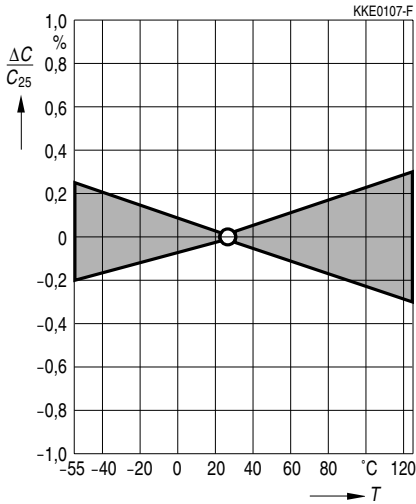
### Case size 1210, 100 VDC

| $C_R$  | Ordering code <sup>1)</sup> | Chip thickness<br>mm | Blister tape,<br>Ø 180-mm reel | Blister tape,<br>Ø 330-mm reel |
|--------|-----------------------------|----------------------|--------------------------------|--------------------------------|
|        |                             |                      | ** $\Delta$ 62                 | ** $\Delta$ 72                 |
|        |                             |                      | pcs/reel                       | pcs/reel                       |
| 1,0 nF | B37949K1102J0**             | 0,8 $\pm$ 0,1        | 4000                           | 16000                          |
| 1,5 nF | B37949K1152J0**             | 0,8 $\pm$ 0,1        | 4000                           | 16000                          |
| 2,2 nF | B37949K1222J0**             | 0,8 $\pm$ 0,1        | 4000                           | 16000                          |
| 3,3 nF | B37949K1332J0**             | 0,8 $\pm$ 0,1        | 4000                           | 16000                          |
| 4,7 nF | B37949K1472J0**             | 1,2 $\pm$ 0,1        | 3000                           | 12000                          |
| 6,8 nF | B37949K1682J0**             | 1,2 $\pm$ 0,1        | 3000                           | 12000                          |

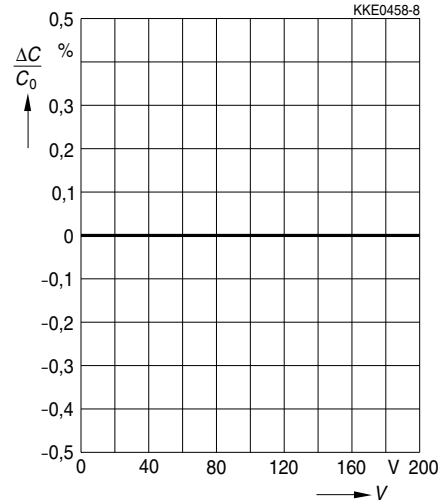
1) The table contains the ordering codes for the standard capacitance tolerance.  
For other available capacitance tolerances see page 16.

### Typical characteristics

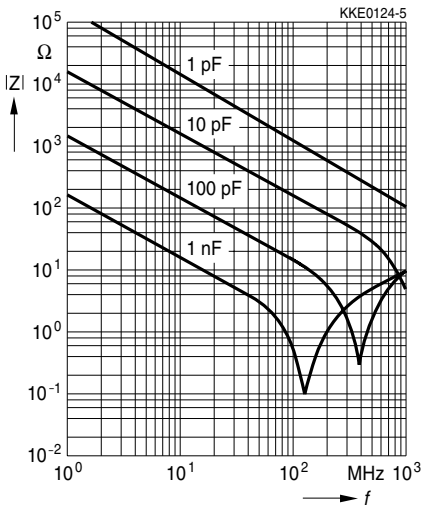
Capacitance change  $\Delta C/C_{25}$  versus temperature  $T$  (tolerance range  $\pm 0.1\%$ )



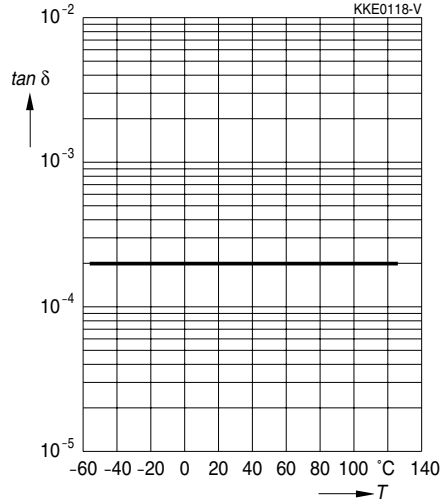
Capacitance change  $\Delta C/C_0$  versus superimposed DC voltage  $V$



Impedance  $|Z|$  versus frequency  $f$

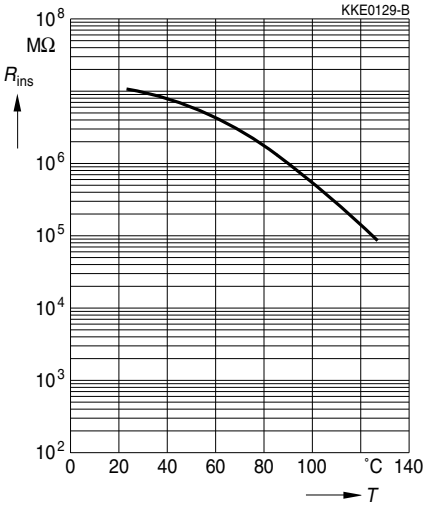


Dissipation factor  $\tan \delta$  versus temperature  $T$



### Typical characteristics

Insulation resistance  $R_{\text{ins}}$  versus temperature  $T$



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

