

Ordering code system

B37979N
1
100
K
0
54
Packaging

51 $\triangle$ cardboard tape, reel packing (360-mm reel)

54 $\triangle$ Ammo packing (standard)

00 $\triangle$ bulk

Internal coding
Capacitance tolerance
J $\triangle$ $\pm 5\%$ (standard for C0G)

K $\triangle$ $\pm 10\%$ (standard for X7R)

M $\triangle$ $\pm 20\%$ (standard for Z5U (Y5U))

Capacitance, coded 101 $\triangle$ $10 \cdot 10^1$ pF = 100 pF
(example) 222 $\triangle$ $22 \cdot 10^2$ pF = 2,2 nF
 473 $\triangle$ $47 \cdot 10^3$ pF = 47 nF

Rated voltage

Rated voltage [VDC]	50	100
Code	5	1

Type and size

With radial leads
EIA standard

Temperature characteristic
C0G X7R

Z5U (Y5U)

Lead spacing 2,5 mm
5,5 $\times$ 5,0 $\times$ 2,5
6,5 $\times$ 5,0 $\times$ 2,5

B37979N
B37986N

B37981M
B37987M

B37982N
B37988N

Lead spacing 5,0 mm
5,5 $\times$ 5,0 $\times$ 2,5
6,5 $\times$ 5,0 $\times$ 2,5
9,0 $\times$ 7,5 $\times$ 2,5

B37979G
B37986G
—

B37981F
B37987F
B37984M

B37982G
B37988G
B37985N

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

- Parallel wire leads, iron-nickel, tinned
- Crimped leads
- Non-standard lead lengths on request

Marking

- Rated capacitance, tolerance, manufacturer's logo, ceramic material, voltage

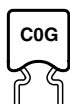
Delivery mode

- Cardboard tape in Ammo packing (standard)
- Cardboard tape on 360-mm reel or bulk on request

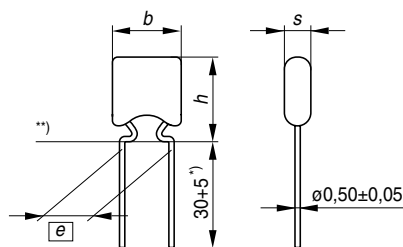
Electrical data

Temperature characteristic		C0G	
Climatic category (IEC 60068-1)		55/125/56	
Standard		EIA	
Dielectric		Class 1	
Rated voltage	V_R	50, 100	VDC
Test voltage	V_{test}	$2,5 \cdot V_R/5 s$	VDC
Capacitance range / E series	C_R	10 pF ... 10 nF (E6)	
Temperature coefficient		$0 \pm 30 \cdot 10^{-6}/K$	
Dissipation factor (limit value)	$\tan \delta$	$< 1,0 \cdot 10^{-3}$	
Insulation resistance ¹⁾ at + 25 °C	R_{ins}	$> 10^5$	MΩ
Insulation resistance ¹⁾ at +125 °C	R_{ins}	$> 10^4$	MΩ
Time constant ¹⁾ at + 25 °C	τ	> 1000	s
Time constant ¹⁾ at +125 °C	τ	> 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

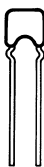
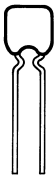
Code letter	J (standard)	K
Tolerance	$\pm 5\%$	$\pm 10\%$

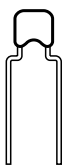
Dimensional drawing


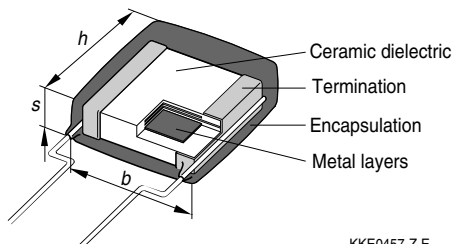
*) Lead length for bulk packaging
 **) Seating plane in acc. with IEC 600717

KKE0456-R-E

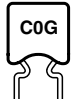
Dimensions (mm)

	Lead spacing $e = 2,5 + 0,6 / - 0,1$ mm	
Type	B37979N	B37986N
		
$h_{\max}$	5,5	6,5
$b_{\max}$	5,0	5,0
$s_{\max}$	2,5	2,5

	Lead spacing $e = 5,0 + 0,6 / - 0,1$ mm	
Type	B37979G	B37986G
		
$h_{\max}$	5,5	6,5
$b_{\max}$	5,0	5,0
$s_{\max}$	2,5	2,5

Termination


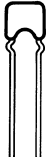
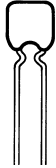
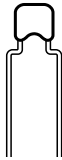
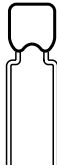
KKE0457-Z-E



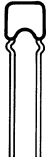
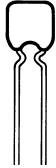
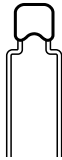
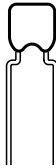
Multilayer Ceramic Capacitors

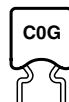
C0G

Product range leaded capacitors

	C0G							
Lead spacing	2,5 mm				5,0 mm			
								
$h \times b \times s$ (mm)	5,5 × 5,0 × 2,5		6,5 × 5,0 × 2,5		5,5 × 5,0 × 2,5		6,5 × 5,0 × 2,5	
Type	B37979N		B37986N		B37979G		B37986G	
V_R (VDC)	50	100	50	100	50	100	50	100
C_R								
10 pF								
15 pF								
22 pF								
33 pF								
47 pF								
68 pF								
100 pF								
150 pF								
220 pF								
330 pF								
470 pF								
680 pF								


Product range leaded capacitors

	C0G							
Lead spacing	2,5 mm				5,0 mm			
								
$h \times b \times s$ (mm)	5,5 × 5,0 × 2,5		6,5 × 5,0 × 2,5		5,5 × 5,0 × 2,5		6,5 × 5,0 × 2,5	
Type	B37979N		B37986N		B37979G		B37986G	
V_R (VDC)	50	100	50	100	50	100	50	100
C_R								
1,0 nF								
1,5 nF								
2,2 nF								
3,3 nF								
4,7 nF								
6,8 nF								
10 nF								



Multilayer Ceramic Capacitors

C0G

Ordering codes and packing for C0G, 50 VDC, lead spacing 2,5 mm

C _R	Ordering code ¹⁾	Ammo packing	Reel packing	Bulk
		** $\triangle$ 54	** $\triangle$ 51	** $\triangle$ 00
		pcs	pcs/reel	pcs

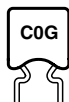
B37979, 50 VDC, 5,5 × 5,0 × 2,5 mm

100 pF	B37979N5101J0**	2500	2500	2000
150 pF	B37979N5151J0**	2500	2500	2000
220 pF	B37979N5221J0**	2500	2500	2000
330 pF	B37979N5331J0**	2500	2500	2000
470 pF	B37979N5471J0**	2500	2500	2000
680 pF	B37979N5681J0**	2500	2500	2000
1,0 nF	B37979N5102J0**	2500	2500	2000
1,5 nF	B37979N5152J0**	2500	2500	2000
2,2 nF	B37979N5222J0**	2500	2500	2000

B37986, 50 VDC, 6,5 × 5,0 × 2,5 mm

3,3 nF	B37986N5332J0**	2500	2500	2000
4,7 nF	B37986N5472J0**	2500	2500	2000
6,8 nF	B37986N5682J0**	2500	2500	2000
10 nF	B37986N5103J0**	2500	2500	2000

1) The table contains the ordering codes for the standard capacitance tolerance.
For other available capacitance tolerances see page 154.

**Ordering codes and packing for C0G, 50 VDC, lead spacing 5,0 mm**

C_R	Ordering code ¹⁾	Ammo packing	Reel packing	Bulk
		** $\triangle$ 54	** $\triangle$ 51	** $\triangle$ 00
		pcs	pcs/reel	pcs

B37979, 50 VDC, 5,5 × 5,0 × 2,5 mm

100 pF	B37979G5101J0**	2500	2500	2000
150 pF	B37979G5151J0**	2500	2500	2000
220 pF	B37979G5221J0**	2500	2500	2000
330 pF	B37979G5331J0**	2500	2500	2000
470 pF	B37979G5471J0**	2500	2500	2000
680 pF	B37979G5681J0**	2500	2500	2000
1,0 nF	B37979G5102J0**	2500	2500	2000
1,5 nF	B37979G5152J0**	2500	2500	2000
2,2 nF	B37979G5222J0**	2500	2500	2000

B37986, 50 VDC, 6,5 × 5,0 × 2,5 mm

3,3 nF	B37986G5332J0**	2500	2500	2000
4,7 nF	B37986G5472J0**	2500	2500	2000
6,8 nF	B37986G5682J0**	2500	2500	2000
10 nF	B37986G5103J0**	2500	2500	2000

1) The table contains the ordering codes for the standard capacitance tolerance.
For other available capacitance tolerances see page 154.

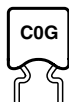
Multilayer Ceramic Capacitors

C0G

Ordering codes and packing for C0G, 100 VDC, lead spacing 2,5 mm

C _R	Ordering code ¹⁾	Ammo packing	Reel packing	Bulk
		** △ 54	** △ 51	** △ 00
		pcs	pcs/reel	pcs
B37979, 100 VDC, 5,5 × 5,0 × 2,5 mm				
10 pF	B37979N1100J0**	2500	2500	2000
15 pF	B37979N1150J0**	2500	2500	2000
22 pF	B37979N1220J0**	2500	2500	2000
33 pF	B37979N1330J0**	2500	2500	2000
47 pF	B37979N1470J0**	2500	2500	2000
68 pF	B37979N1680J0**	2500	2500	2000
100 pF	B37979N1101J0**	2500	2500	2000
150 pF	B37979N1151J0**	2500	2500	2000
220 pF	B37979N1221J0**	2500	2500	2000
330 pF	B37979N1331J0**	2500	2500	2000
470 pF	B37979N1471J0**	2500	2500	2000
680 pF	B37979N1681J0**	2500	2500	2000
1,0 nF	B37979N1102J0**	2500	2500	2000
B37986, 100 VDC, 6,5 × 5,0 × 2,5 mm				
1,5 nF	B37986N1152J0**	2500	2500	2000
2,2 nF	B37986N1222J0**	2500	2500	2000

1) The table contains the ordering codes for the standard capacitance tolerance.
For other available capacitance tolerances see page 154.

**Ordering codes and packing for C0G, 100 VDC, lead spacing 5,0 mm**

C _R	Ordering code ¹⁾	Ammo packing	Reel packing	Bulk
		** $\triangle$ 54	** $\triangle$ 51	** $\triangle$ 00
		pcs	pcs/reel	pcs

B37979, 100 VDC, 5,5 × 5,0 × 2,5 mm

10 pF	B37979G1100J0**	2500	2500	2000
15 pF	B37979G1150J0**	2500	2500	2000
22 pF	B37979G1220J0**	2500	2500	2000
33 pF	B37979G1330J0**	2500	2500	2000
47 pF	B37979G1470J0**	2500	2500	2000
68 pF	B37979G1680J0**	2500	2500	2000
100 pF	B37979G1101J0**	2500	2500	2000
150 pF	B37979G1151J0**	2500	2500	2000
220 pF	B37979G1221J0**	2500	2500	2000
330 pF	B37979G1331J0**	2500	2500	2000
390 pF	B37979G1391J0**	2500	2500	2000
470 pF	B37979G1471J0**	2500	2500	2000
680 pF	B37979G1681J0**	2500	2500	2000
1,0 nF	B37979G1102J0**	2500	2500	2000

B37986, 100 VDC, 6,5 × 5,0 × 2,5 mm

1,5 nF	B37986G1152J0**	2500	2500	2000
2,2 nF	B37986G1222J0**	2500	2500	2000

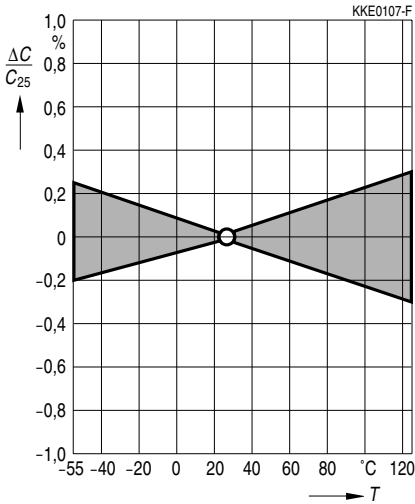
1) The table contains the ordering codes for the standard capacitance tolerance.
For other available capacitance tolerances see page 154.

Multilayer Ceramic Capacitors

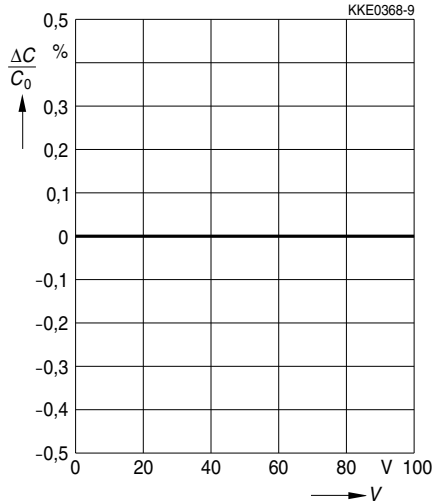
C0G

Typical characteristics

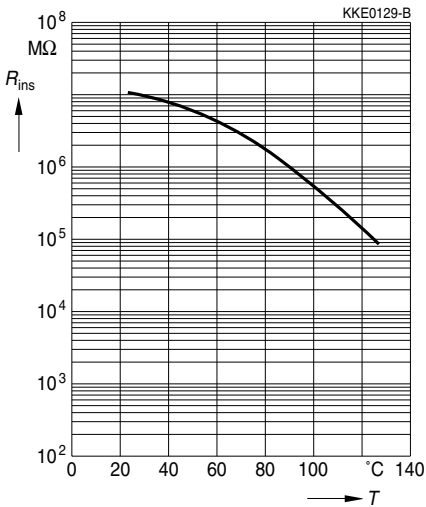
Capacitance change $\Delta C/C_{25}$ versus temperature T (tolerance range $\pm 0.1\%$)



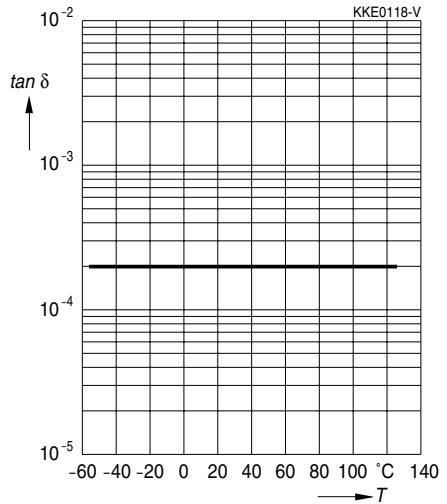
Capacitance change $\Delta C/C_0$ versus superimposed DC voltage V



Insulation resistance R_{ins} versus temperature T



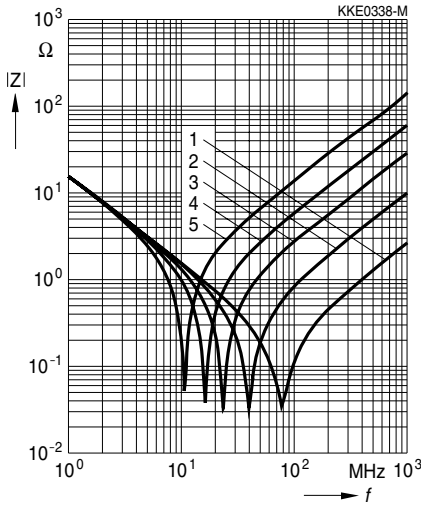
Dissipation factor $\tan \delta$ versus temperature T





Typical characteristics

Impedance $|Z|$ versus
frequency f



- 1: Chip
- 2: 1,5 mm lead length
- 3: 5,0 mm lead length
- 4: 10,0 mm lead length
- 5: 20,0 mm lead length

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

