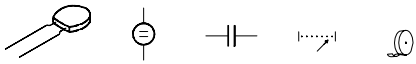
Ordering code system



B37979N 1 100 K 0 54

Packaging

51 ≙ cardboard tape, reel packing (360-mm reel)
54 ≙ Ammo packing (standard)
00 ≙ bulk

Internal coding

Capacitance tolerance

J ≙ ± 5 % (standard for C0G)
K ≙ ± 10 % (standard for X7R)
M ≙ ± 20 % (standard for Z5U (Y5U))

Capacitance, coded (example)
101 ≙ 10 · 10^1 pF = 100 pF
222 ≙ 22 · 10^2 pF = 2,2 nF
473 ≙ 47 · 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 × 5,0 × 2,5	B37979N	B37981M	B37982N
6,5 × 5,0 × 2,5	B37986N	B37987M	B37988N
Lead spacing 5,0 mm			
5,5 × 5,0 × 2,5	B37979G	B37981F	B37982G
6,5 × 5,0 × 2,5	B37986G	B37987F	B37988G
9,0 × 7,5 × 2,5	—	B37984M	B37985N

Features

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

Applications

- Blocking
- Coupling and decoupling
- Interference suppression

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

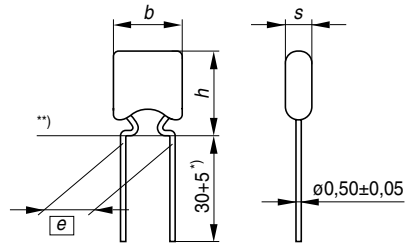
Temperature characteristic		X7R	
Climatic category (IEC 60068-1)		55/125/56	
Standard		EIA	
Dielectric		Class 2	
Rated voltage[1)]	V_R	50, 100	VDC
Test voltage	V_{test}	2,5 · V_R/5 s	VDC
Capacitance range / E series	C_R	470 pF … 1 µF (E6)	
Max. relative capacitance change	$\Delta C/C$	±15	%
Dissipation factor (limit value)	tan δ	< 25 · 10^{-3}	
Insulation resistance[2)] at + 25 °C	R_{ins}	> 10^5	MΩ
Insulation resistance[2)] at +125 °C	R_{ins}	> 10^4	MΩ
Time constant[2)] at + 25 °C	τ	> 1000	s
Time constant[2)] at +125 °C	τ	> 100	s
Operating temperature range	T_{op}	−55 … +125	°C
Ageing[3)]		yes	

1) Note: No operation on AC line.
2) For C_R > 10 nF the time constant $\tau = C \cdot R_{ins}$ is given.
3) Refer to chapter "General Technical Information", page 197.

Capacitance tolerances

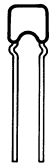
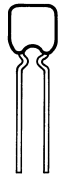
Code letter	K (standard)	M
Tolerance	±10%	±20%

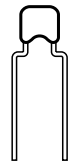
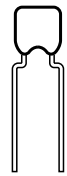
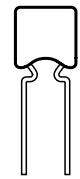
Dimensional drawing



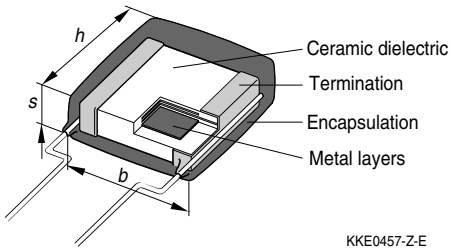
*) Lead length for bulk packaging KKE0456-R-E
**) Seating plane in acc. with IEC 600717

Dimensions (mm)

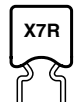
	Lead spacing e = 2,5 +0,6/−0,1 mm	
Type	B37981M	B37987M
		
h_{max}	5,5	6,5
b_{max}	5,0	5,0
s_{max}	2,5	2,5

	Lead spacing e = 5,0 +0,6/−0,1 mm		
Type	B37981F	B37987F	B37984M
			
h_{max}	5,5	6,5	9,0
b_{max}	5,0	5,0	7,5
s_{max}	2,5	2,5	2,5

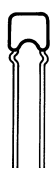
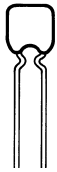
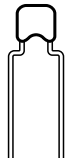
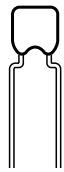
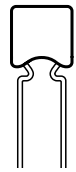
Termination



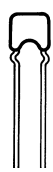
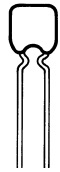
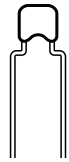
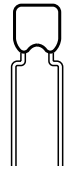
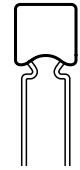
KKE0457-Z-E

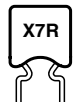


Product range leaded capacitors

	X7R									
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		9,0 × 7,5 × 2,5	
Type	B37981M		B37987M		B37981F		B37987F		B37984M	
V_R (VDC) / C_R	50	100	50	100	50	100	50	100	50	
470 pF		■				■				
680 pF		■				■				
1,0 nF		■				■				
1,5 nF		■				■				
2,2 nF		■				■				
3,3 nF	■	■			■	■				
4,7 nF	■	■			■	■				
6,8 nF	■	■			■	■				
10 nF	■	■			■	■				
15 nF	■	■			■	■				
22 nF	■			■	■			■		

Product range leaded capacitors

	X7R									
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		9,0 × 7,5 × 2,5	
Type	B37981M		B37987M		B37981F		B37987F		B37984M	
V_R (VDC) / C_R	50	100	50	100	50	100	50	100	50	
33 nF	■			■	■			■		
47 nF	■			■	■			■		
68 nF			■	■			■	■		
100 nF			■	■			■	■		
150 nF			■	■			■	■		
220 nF			■				■			
330 nF									■	
470 nF									■	
680 nF									■	
1,0 µF									■	



Ordering codes and packing for X7R, 50 VDC, lead spacing 2,5 mm

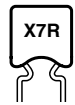
C_R	Ordering code[1)]	Ammo packing ** ≙ 54 pcs	Reel packing ** ≙ 51 pcs/reel	Bulk ** ≙ 00 pcs
B37981, 50 VDC, 5,5 × 5,0 × 2,5 mm				
3,3 nF	B37981M5332K0**	2500	2500	2000
4,7 nF	B37981M5472K0**	2500	2500	2000
6,8 nF	B37981M5682K0**	2500	2500	2000
10 nF	B37981M5103K0**	2500	2500	2000
15 nF	B37981M5153K0**	2500	2500	2000
22 nF	B37981M5223K0**	2500	2500	2000
33 nF	B37981M5333K0**	2500	2500	2000
47 nF	B37981M5473K0**	2500	2500	2000
B37987, 50 VDC, 6,5 × 5,0 × 2,5 mm				
68 nF	B37987M5683K0**	2500	2500	2000
100 nF	B37987M5104K0**	2500	2500	2000
150 nF	B37987M5154K0**	2500	2500	2000
220 nF	B37987M5224K0**	2500	2500	2000

1) The table contains the ordering codes for the standard capacitance tolerance.
For other available capacitance tolerances see page 164.

Ordering codes and packing for X7R, 50 VDC, lead spacing 5,0 mm

C_R	Ordering code[1)]	Ammo packing ** ≙ 54 pcs	Reel packing ** ≙ 51 pcs/reel	Bulk ** ≙ 00 pcs
B37981, 50 VDC, 5,5 × 5,0 × 2,5 mm				
3,3 nF	B37981F5332K0**	2500	2500	2000
4,7 nF	B37981F5472K0**	2500	2500	2000
6,8 nF	B37981F5682K0**	2500	2500	2000
10 nF	B37981F5103K0**	2500	2500	2000
15 nF	B37981F5153K0**	2500	2500	2000
22 nF	B37981F5223K0**	2500	2500	2000
33 nF	B37981F5333K0**	2500	2500	2000
47 nF	B37981F5473K0**	2500	2500	2000
B37987, 50 VDC, 6,5 × 5,0 × 2,5 mm				
68 nF	B37987F5683K0**	2500	2500	2000
100 nF	B37987F5104K0**	2500	2500	2000
150 nF	B37987F5154K0**	2500	2500	2000
220 nF	B37987F5224K0**	2500	2500	2000
B37984, 50 VDC, 9,0 × 7,5 × 2,5 mm				
330 nF	B37984M5334K0**	2000	2000	2000
470 nF	B37984M5474K0**	2000	2000	2000
680 nF	B37984M5684K0**	2000	2000	2000
1,0 µF	B37984M5105K0**	2000	2000	2000

1) The table contains the ordering codes for the standard capacitance tolerance.
For other available capacitance tolerances see page 164.



Ordering codes and packing for X7R, 100 VDC, lead spacing 2,5 mm

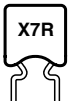
C_R	Ordering code[1)]	Ammo packing ** ≙ 54 pcs	Reel packing ** ≙ 51 pcs/reel	Bulk ** ≙ 00 pcs
B37981, 100 VDC, 5,5 × 5,0 × 2,5 mm				
470 pF	B37981M1471K0**	2500	2500	2000
680 pF	B37981M1681K0**	2500	2500	2000
1,0 nF	B37981M1102K0**	2500	2500	2000
1,5 nF	B37981M1152K0**	2500	2500	2000
2,2 nF	B37981M1222K0**	2500	2500	2000
3,3 nF	B37981M1332K0**	2500	2500	2000
4,7 nF	B37981M1472K0**	2500	2500	2000
6,8 nF	B37981M1682K0**	2500	2500	2000
10 nF	B37981M1103K0**	2500	2500	2000
15 nF	B37981M1153K0**	2500	2500	2000
B37987, 100 VDC, 6,5 × 5,0 × 2,5 mm				
22 nF	B37987M1223K0**	2500	2500	2000
33 nF	B37987M1333K0**	2500	2500	2000
47 nF	B37987M1473K0**	2500	2500	2000
68 nF	B37987M1683K0**	2500	2500	2000
100 nF	B37987M1104K0**	2500	2500	2000
150 nF	B37987M1154K0**	2500	2500	2000

1) The table contains the ordering codes for the standard capacitance tolerance.
For other available capacitance tolerances see page 164.

Ordering codes and packing for X7R, 100 VDC, lead spacing 5,0 mm

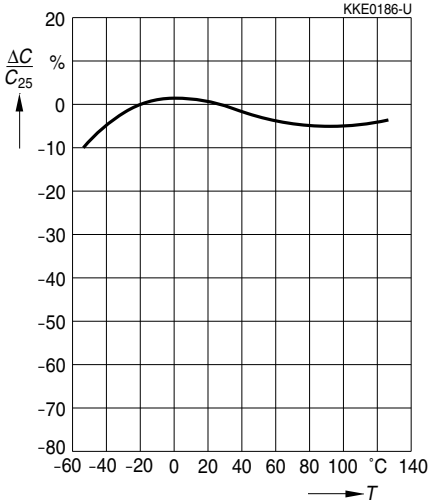
C_R	Ordering code[1)]	Ammo packing ** ≙ 54 pcs/reel	Reel packing ** ≙ 51 pcs	Bulk ** ≙ 00 pcs
B37981, 100 VDC, 5,5 × 5,0 × 2,5 mm				
470 pF	B37981F1471K0**	2500	2500	2000
680 pF	B37981F1681K0**	2500	2500	2000
1,0 nF	B37981F1102K0**	2500	2500	2000
1,5 nF	B37981F1152K0**	2500	2500	2000
2,2 nF	B37981F1222K0**	2500	2500	2000
3,3 nF	B37981F1332K0**	2500	2500	2000
4,7 nF	B37981F1472K0**	2500	2500	2000
6,8 nF	B37981F1682K0**	2500	2500	2000
10 nF	B37981F1103K0**	2500	2500	2000
15 nF	B37981F1153K0**	2500	2500	2000
B37987, 100 VDC, 6,5 × 5,0 × 2,5 mm				
22 nF	B37987F1223K0**	2500	2500	2000
33 nF	B37987F1333K0**	2500	2500	2000
47 nF	B37987F1473K0**	2500	2500	2000
68 nF	B37987F1683K0**	2500	2500	2000
100 nF	B37987F1104K0**	2500	2500	2000
150 nF	B37987F1154K0**	2500	2500	2000

1) The table contains the ordering codes for the standard capacitance tolerance.
For other available capacitance tolerances see page 164.

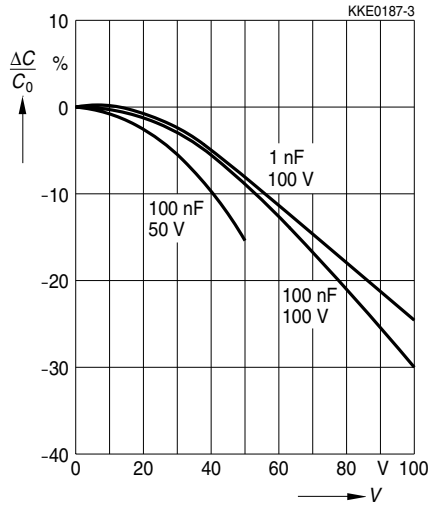


Typical characteristics

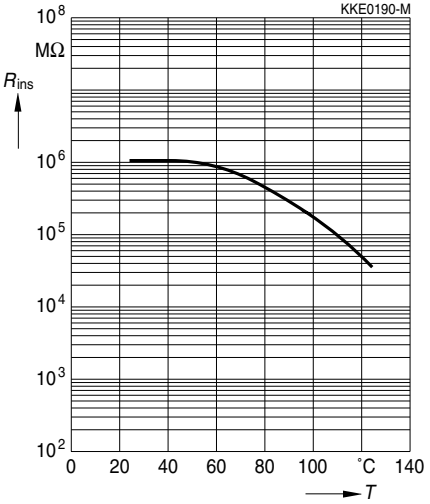
Capacitance change $\Delta C/C_{25}$ versus temperature T



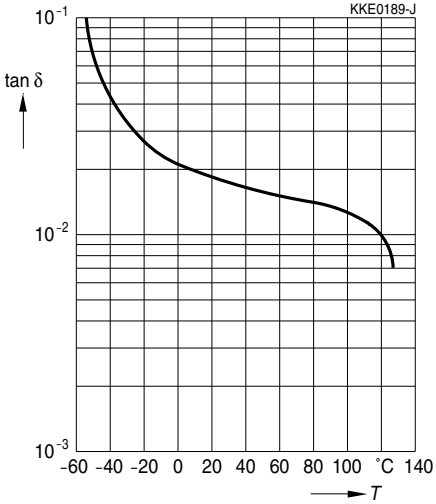
Capacitance change $\Delta C/C_0$ versus superimposed DC voltage V



Insulation resistance R_{ins} versus temperature T

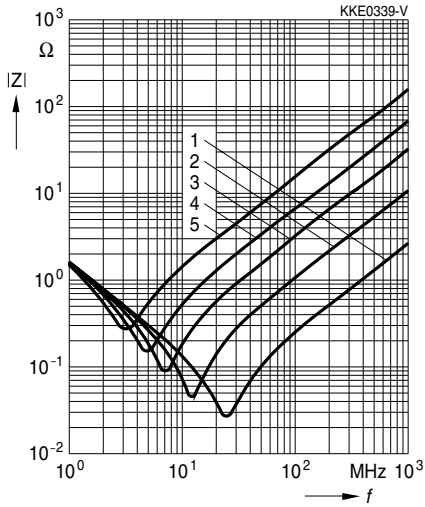


Dissipation factor tan δ versus temperature T

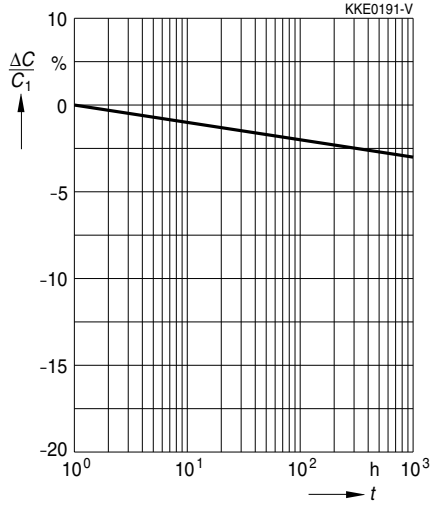


Typical characteristics

Impedance $|Z|$ versus frequency f



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



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