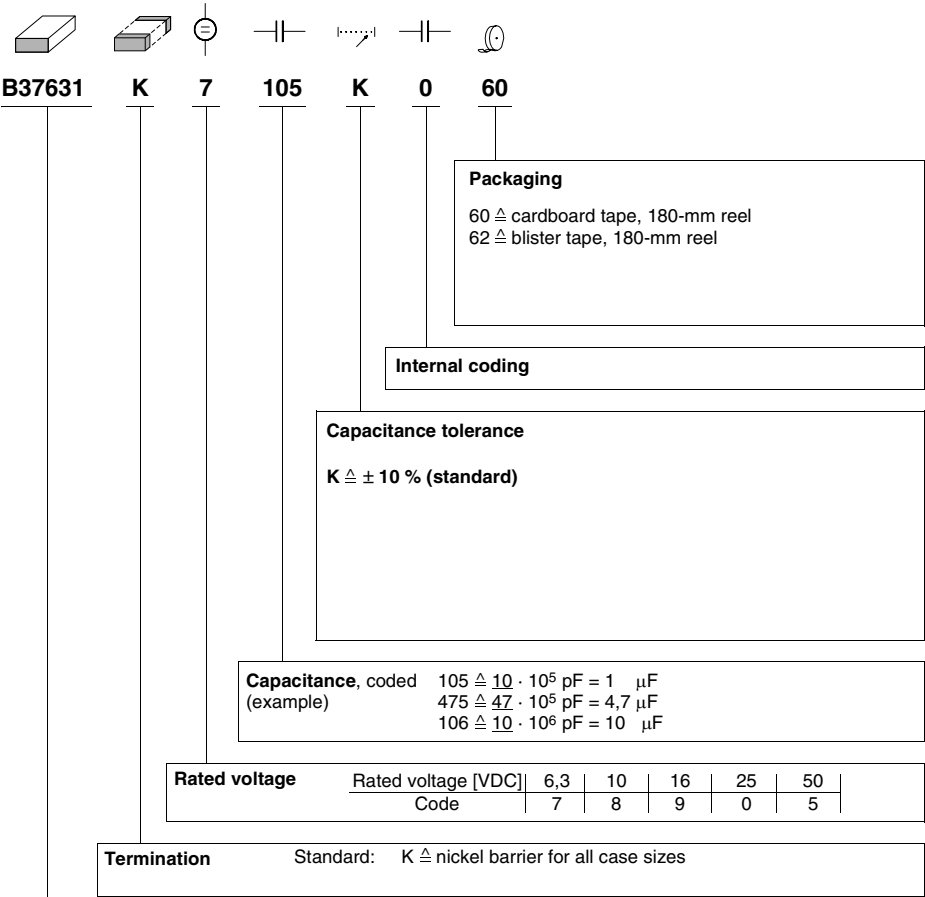


Ordering code system


Type and size		
Chip size (inch / mm)	Temperature characteristic	
	X5R	X7R
0402 / 1005	B37621	–
0603 / 1608	B37631	B37931
0805 / 2012	B37641	B37941
1206 / 3216	B37572	B37872
1210 / 3225	B37650	B37950
1812 / 4532	B37653	–

- Voltage rating from 6,3 V to 50 V
- Reduced chip thickness
- Small sizes

Applications

- Coupling and bypass filters

Termination

- For soldering: Nickel-barrier terminations (Ni)

Options

- Extended E3 series (E3+) and other capacitance values on request

Delivery mode

- Cardboard and blister tape (blister tape for chip thickness $\geq 1,2 \pm 0,1$ mm and case

Electrical data

Temperature characteristic		X5R	X7R
Climatic category (IEC 60068-1)		55/85/56	55/125/56
Standard		EIA	EIA
Dielectric		Class 2	Class 2
Rated voltage ¹⁾	V_R	6,3; 10; 16; 25	10; 16; 25; 50
Test voltage	V_{test}	$2,5 \cdot V_R/5$ s	$2,5 \cdot V_R/5$ s
Capacitance range / E series	C_R	100 nF ... 22 μ F (E3+)	100 nF ... 4,7 μ F
Max. relative capacitance change	$\Delta C/C$	± 15	± 15
Dissipation factor (limit value)	$\tan \delta$	$< 50 \cdot 10^{-3}$	$< 25 \cdot 10^{-3}$
Insulation resistance ²⁾ at +25 °C	R_{ins}	$> 10^4$	$> 10^4$
Time constant ²⁾ at +25 °C	τ	> 500	> 500
Operating temperature range	T_{op}	-55 ... +85	-55 ... +125
Ageing ³⁾		yes	yes

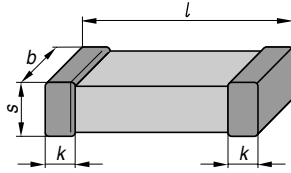
1) Note: No operation on AC line.

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.

Tolerance	±10%
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Dimensional drawing

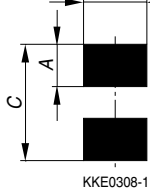


KKE0329-N

Dimensions (mm)

Case size (inch) (mm)	0402 1005	0603 1608	0805 2012	1206 3216	1210 3225
<i>l</i>	1,0 ± 0,10	1,6 ± 0,15	2,0 ± 0,20	3,2 ± 0,20	3,2 ± 0,30
<i>b</i>	0,5 ± 0,05	0,8 ± 0,10	1,25 ± 0,15	1,6 ± 0,15	2,5 ± 0,30
<i>s</i>	0,5 ± 0,05	0,8 ± 0,10	1,35 max.	1,80 max.	2,70 max.
<i>k</i>	0,1 – 0,4	0,1 – 0,4	0,13 – 0,75	0,25 – 0,75	0,25 – 0,75

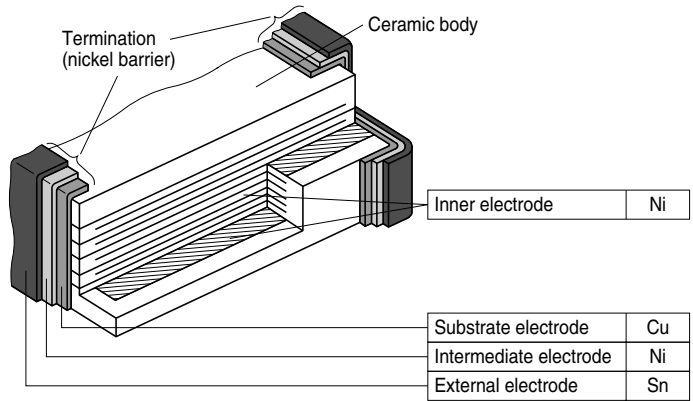
Tolerances to CECC 32101-801



Maximum dimensions (mm)

Case size	(inch/mm)	Type	A	C
	0402/1005	single chip	0,6	1,7
	0603/1608	single chip	1,0	3,0
	0805/2012	single chip	1,2	3,4
	1206/3216	single chip	1,2	4,5
	1210/3225	single chip	1,2	4,5
	1812/4532	single chip	1,5	6,0

Termination



KKE0342-F

Size ¹⁾	0402	0603			0805		
inch	1005	1608			2012		
mm							
Type	B37621	B37631			B37641		
V_R (VDC)							
C_R	10	6,3	10	25	6,3	10	6,3
100 nF							
330 nF							
1,0 μ F							
2,2 μ F							
4,7 μ F							
10 μ F							

		X5R					
Size ¹⁾		1210				1812	
inch		3225				4532	
mm							
Type		B37650				B37653	
V_R (VDC)							
C_R		6,3	10	16	25	16	25
4,7 μ F							
10 μ F							
22 μ F							

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

Size	0603 1608		0805 2012		1206 3216			
inch								
mm								
Type	B37931		B37941		B37872			
V_R (VDC)	10		16	25	16	25	50	2
C_R								
100 nF								
220 nF								
330 nF								
470 nF								
1,0 μ F								
2,2 μ F								
4,7 μ F								

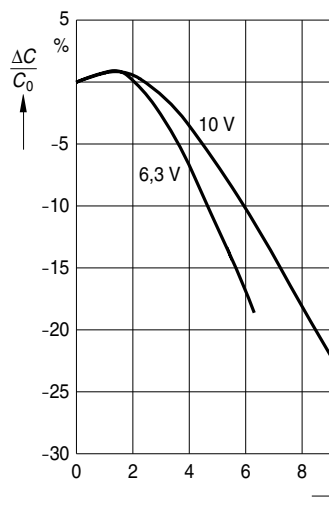
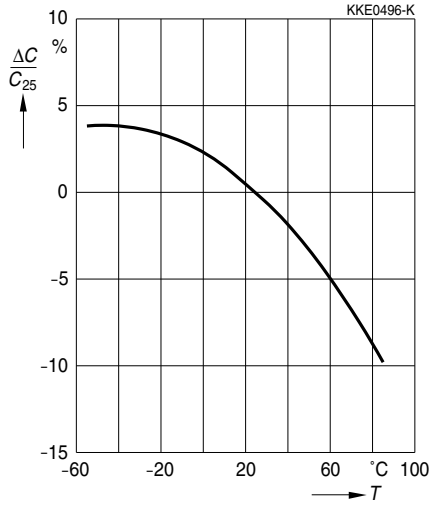
1) $l \times b$ (inch) / $l \times b$ (mm)

$C_R^{1)}$	V_R (VDC)	Ordering code	mm	∅ 180-mm reel	∅
				** $\triangle 60$	**
				pcs/reel	p
Case size 0402					
100 nF	10	B37621K8104K0**	$0,5 \pm 0,05$	10000	–
Case size 0603					
1,0 μ F	6,3	B37631K7105K0**	$0,8 \pm 0,1$	4000	–
2,2 μ F	6,3	B37631K7225K0**	$0,8 \pm 0,1$	4000	–
330 nF	10	B37631K8334K0**	$0,8 \pm 0,1$	4000	–
1,0 μ F	10	B37631K8105K0**	$0,8 \pm 0,1$	4000	–
100 nF	25	B37631K0104K0**	$0,8 \pm 0,1$	4000	–
Case size 0805					
4,7 μ F	6,3	B37641K7475K0**	$1,25 \pm 0,1$	–	3
10 μ F	6,3	B37641K7106K0**	$1,25 \pm 0,1$	–	3
1,0 μ F	10	B37641K8105K0**	$1,25 \pm 0,1$	–	3
2,2 μ F	10	B37641K8225K0**	$1,25 \pm 0,1$	–	3
Case size 1206					
10 μ F	6,3	B37572K7106K0**	$1,6 \pm 0,2$	–	2
4,7 μ F	10	B37572K8475K0**	$1,6 \pm 0,2$	–	2
10 μ F	10	B37572K8106K0**	$1,6 \pm 0,2$	–	2
Case size 1210					
22 μ F	6,3	B37650K7226K0**	$2,5 \pm 0,2$	–	–
10 μ F	10	B37650K8106K0**	$2,0 \pm 0,2$	–	2
10 μ F	16	B37650K9106K0**	$2,0 \pm 0,2$	–	2
22 μ F	16	B37650K9226K0**	$2,5 \pm 0,2$	–	–
4,7 μ F	25	B37650K0475K0**	$2,0 \pm 0,2$	–	2
Case size 1812					
22 μ F	16	B37653K9226K0**	$2,5 \pm 0,2$	–	–
10 μ F	25	B37653K0106K0**	$2,5 \pm 0,2$	–	–

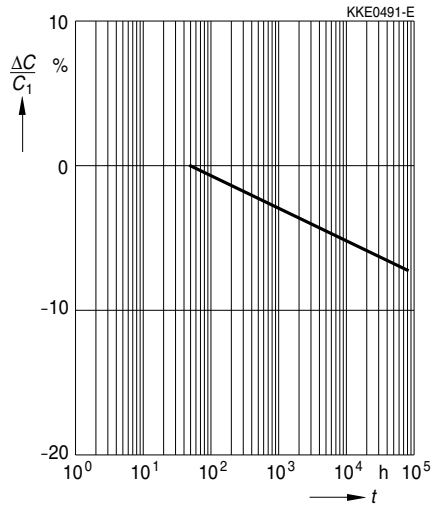
1) Other capacitance values on request.

$C_R^{1)}$	V_R (VDC)	Ordering code	mm	Ø 180-mm reel	
				** \triangle 60	**
				pcs/reel	p
Case size 0603					
220 nF	10	B37931K8224K0**	0,8 ± 0,1	4000	–
Case size 0805					
220 nF	16	B37941K9224K0**	1,25 ± 0,1	–	3
330 nF	16	B37941K9334K0**	1,25 ± 0,1	–	3
470 nF	16	B37941K9474K0**	1,25 ± 0,1	–	3
1,0 μ F	16	B37941K9105K0**	1,25 ± 0,1	–	3
220 nF	25	B37941K0224K0**	0,85 ± 0,1	–	4
Case size 1206					
1,0 μ F	16	B37872K9105K0**	1,15 ± 0,1	–	3
2,2 μ F	16	B37872K9225K0**	1,6 ± 0,2	–	2
4,7 μ F	16	B37872K9475K0**	1,6 ± 0,2	–	2
330 nF	25	B37872K0334K0**	0,8 ± 0,1	4000	–
470 nF	25	B37872K0474K0**	1,2 ± 0,1	–	3
1,0 μ F	25	B37872K0105K0**	1,6 ± 0,2	–	2
220 nF	50	B37872K5224K0**	0,8 ± 0,1	4000	–
330 nF	50	B37872K5334K0**	1,2 ± 0,1	–	3
470 nF	50	B37872K5474K0**	1,2 ± 0,1	–	3
Case size 1210					
2,2 μ F	25	B37950K0225K0**	2,0 ± 0,2	–	2
1,0 μ F	50	B37950K5105K0**	2,0 ± 0,2	–	2

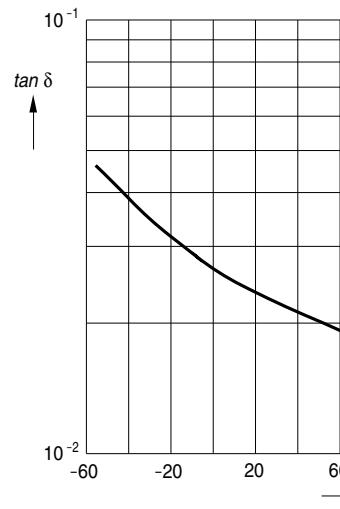
1) Other capacitance values on request.



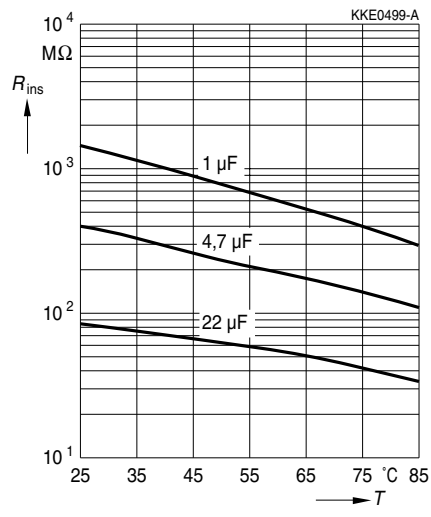
Capacitance change $\Delta C/C_1$ versus time t



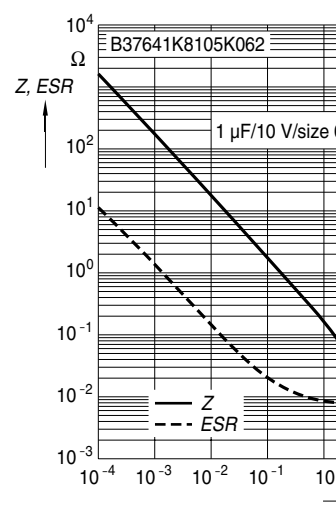
Dissipation factor $\tan \delta$ versus temperature T



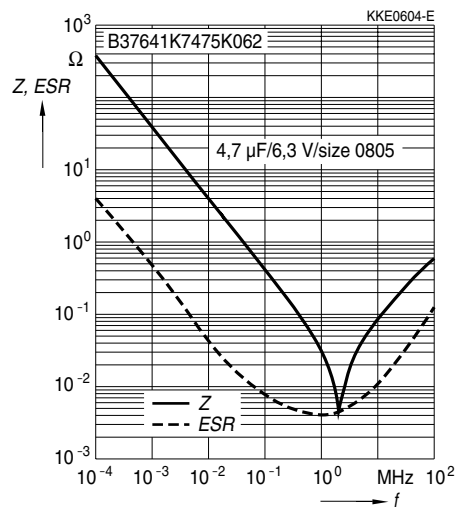
temperature T



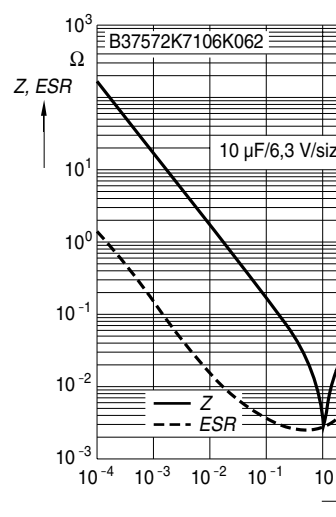
frequency f

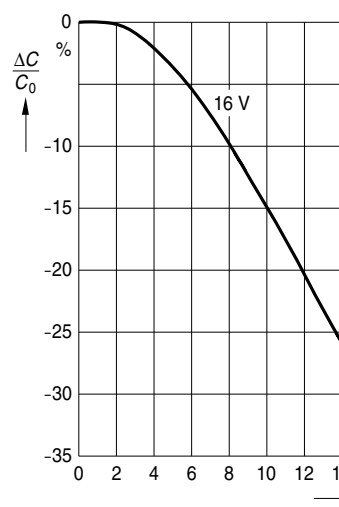
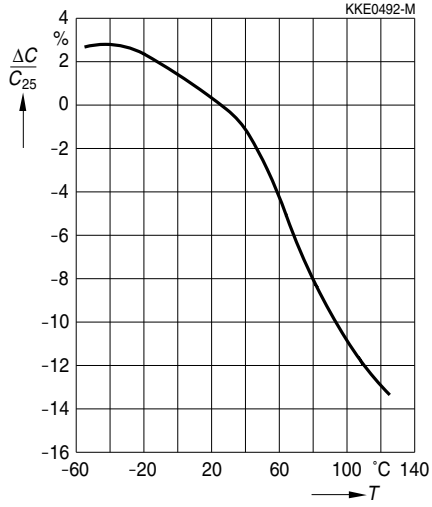


Impedance Z and ESR versus frequency f

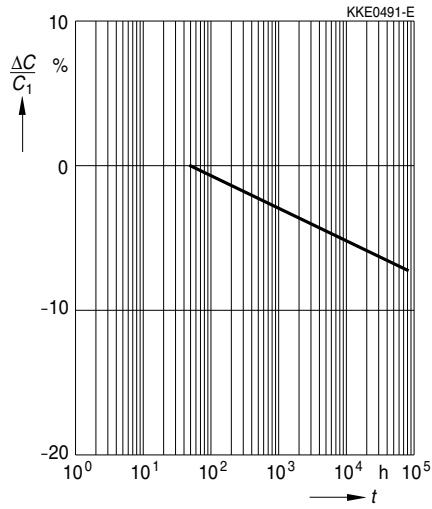


Impedance Z and ESR versus frequency f

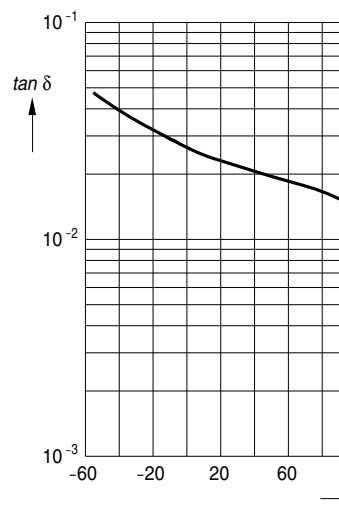


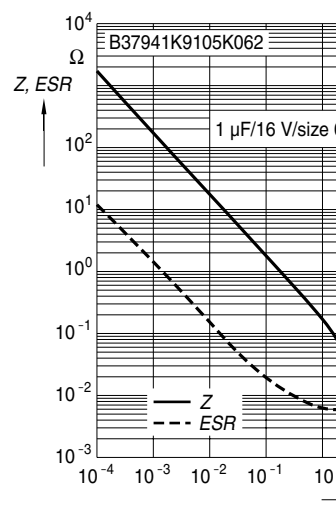
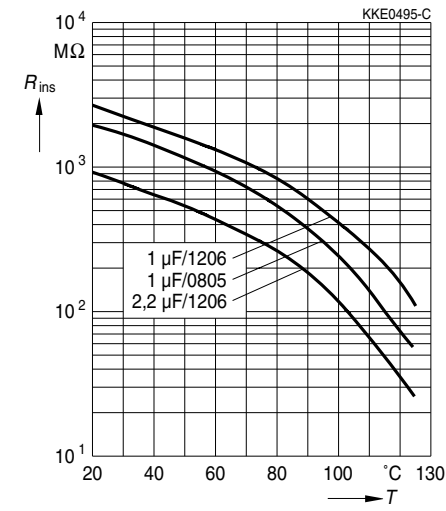


Capacitance change $\Delta C/C_1$ versus time t

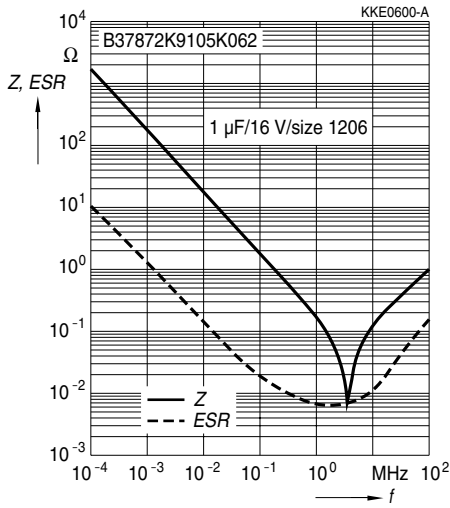


Dissipation factor $\tan \delta$ versus temperature T

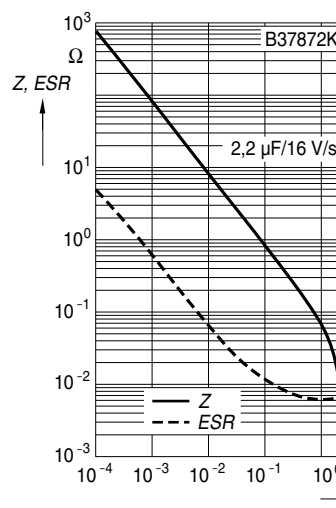




Impedance Z and ESR versus frequency f



Impedance Z and ESR versus frequency f



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