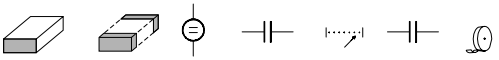
Ordering code system



B37940- K 5 010- D 5 60

Packaging

62 = blister tape, reel dia. 180 mm
72 = blister tape, reel dia. 330 mm
60 = cardboard tape, reel dia. 180 mm
70 = cardboard tape, reel dia. 330 mm
01 = bulk case

Decimal place for cap. values < 10 pF, otherwise not used

Capacitance tolerance
(tolerance code in acc. with IEC 62, standard values bold)

	C0G / NP0 / CH	X7R / B char. and X8R	Z5U (Y5U) / F char.
C_R < 10 pF:	B = ± 0,1 pF **C = ± 0,25 pF** D = 0,5 pF		
C_R ≥ 10 pF:	F = ± 1 % G = ± 2 % **J = ± 5 %** K = 10 %	J = ± 5 % **K = ± 10 %** M = 20 %	**M = ± 20 %**

Capacitance, coded
010 = 1 pF 101 = 100 pF 103 = 10 nF 105 = 1 µF
100 = 10 pF 102 = 1 nF 104 = 100 nF 474 = 470 nF

Rated voltage

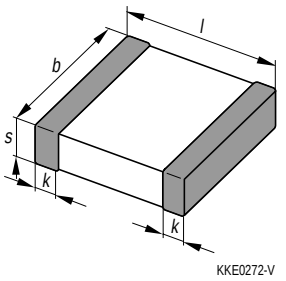
Rated voltage [Vdc]	16	25	50	100	200	500
Code	9	0	5	1	2	3

Terminations Standard: K = silver/nickel/tin for chip sizes 0402, 0603, 0805, 1206, 1210
J = silver palladium for chip sizes 1812, 2220
for conductive adhesion: all sizes

Type and size

Chip size (**inch** / mm)	Temperature characteristics C0G / NP0 / CH	X7R / B char.	X8R	Z5U (Y5U) / F char.
0402 / 1005	B37920	B37921		B37922
0603 / 1608	B37930	B37931		B37932
0805 / 2012	B37940	B37941	B37541	B37942
1206 / 3216	B37871	B37872	B37472	B37873
1210 / 3225	B37949	B37950	B37550	B37951
1812 / 4532		B37953		B37954
2220 / 5750		B37956		B37957

Dimensions and construction



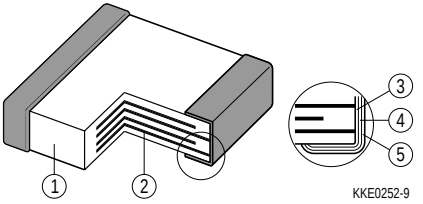
KKE0272-V

Size **inch**/mm	*l*	*b*	*s*	*k*
0402/1005	1,0 ± 0,10	0,50 ± 0,05	0,5 ± 0,05	0,2
0603/1608	1,6 ± 0,15*)	0,80 ± 0,10	0,8 ± 0,10	0,3
0805/2012	2,0 ± 0,20	1,25 ± 0,15	1,3 max.	0,5
1206/3216	3,2 ± 0,20	1,60 ± 0,15	1,3 max.	0,5
1210/3225	3,2 ± 0,30	2,50 ± 0,30	1,7 max.	0,5
1812/4532	4,5 ± 0,30	3,20 ± 0,30	1,3 max.	0,5
2220/5750	5,7 ± 0,40	5,00 ± 0,40	1,3 max	0,5

*) For bulk cases 1,6 ± 0,1

- Dimensions and tolerances in accordance with CECC 32101-801
- MLCC internal construction in accordance with EIA 469

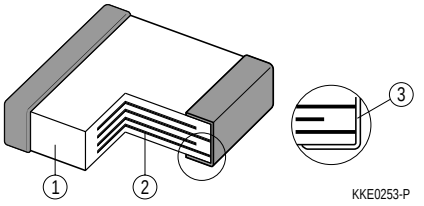
Sizes 0402 through 1210 for soldering



KKE0252-9

No.	Name	Materials
1	Dielectric	Ceramics
2	Inner electrode	Pd or AgPd
3	Substrate electrode	Ag
4	Intermediate electrode	Ni
5	External electrode	Sn

Sizes 1812, 2220 for soldering
All sizes for conductive adhesion



KKE0253-P

No.	Name	Materials
1	Dielectric	Ceramics
2	Inner electrode	Pd or AgPd
3	External electrode	AgPd

Electrical characteristics in brief

Temperature characteristic Standard	C0G/NP0/CH EIA	X7R/B char. EIA	X8R EIA	Z5U (Y5U)/ F char.[1] EIA
Dielectric	Class 1	Class 2	Class 2	Class 2
Rated voltage V_R[2] Vdc	50/100/200	16/25/50/100/ 200/500	50	16/25/50
Climatic category (IEC 68-1)	55/125/56	55/125/56	55/150/56	30/085/56
Temperature range	– 55 ... + 125 °C	– 55 ... + 125 °C	– 55 ... + 150 °C	– 30 ... + 85 °C
Available capacitance values C_R E series	1 pF … 10 nF E12	220 pF … 1 µF E12	1 nF … 150 nF E12	1 nF … 4,7 µF E6
Capacitance tolerance (standard in bold print)	C_R < 10 pF: ± 0,1 pF ± **0,25 pF** ± 0,5 pF C_R ≥10 pF: ± 1 %[2] ± 2 %[2] ± **5 %** ± 10 %	 ± 5 %[3] ± **10 %** ± 20 %	 ± 5 % ± **10 %** ± 20 %	 ± **20 %**
Temperature coefficient (tolerance)	0 ± 30 · 10^{-6}/K	–	–	–
Max. rel. capacitance change $\Delta C/C$ at V_{meas}	 –	 ± 15 %	 ± 15 %	 +22/– 56 %
Voltage test	2,5 · V_R/5 s			
Dissipation factor tan δ (limit value)	< 1,0 · 10^{-3}	< 25 · 10^{-3} < 35 · 10^{-3} (16 V)	< 25 · 10^{-3}	< 30 · 10^{-3} < 35 · 10^{-3} (25 V) < 70 · 10^{-3} (16 V)
Insulation resistance[4] at 25 °C 125 °C	 > 10^5 MΩ > 10^4 MΩ	 > 10^5 MΩ > 10^4 MΩ	 > 10^5 MΩ > 10^4 MΩ	 > 10^4 MΩ –
Time constant τ[4] at 25 °C 125 °C	 > 1000 s > 100 s	 > 1000 s > 100 s	 > 1000 s > 100 s	 > 500 s –

1) Y5U specification is also fulfilled.
2) 1 % and 2 % tolerance not for 200 V.
3) 5% tolerance not for 16 V, 200 V and 500 V.
4) For capacitance values exceeding 10 nF (C0G, X7R, X8R) and 47 nF (Z5U) the time constant $\tau = C \cdot R_{ins}$ is given.