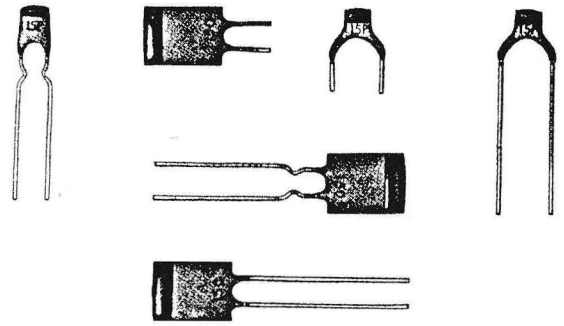
miniature plate

tuning – type 1B
2222 631 632 638
2222 641 642 643



Low voltage capacitors for use in h.f. circuits where their excellent electrical properties and small size, compared with mechanical trimmers, offer definite advantages.

Available values

capacitance range (E12) and relevant size					temperature and coefficient 10^{-6}/K	corresponding colour code	code XX in cat. no.
size I	II	III	IV	V			
0,56 to 6,8	8,2	–	–	–	+ 100	red/violet	03
–	10 to 15	18 to 22	27 to 33	39 to 47			04
1,8 to 8,2	–	–	–	–	0	black	09
10 to 33	39 to 68	82 to 120	–	–			10
3,9 to 8,2	–	–	–	–	– 75	red	27
10 to 18	22 to 39	47 to 56	68 to 82	100 to 120			28
3,9 to 8,2	–	–	–	–	– 150	orange	33
10 to 22	27 to 68	82 to 100	120 to 150	–			34
3,9 to 8,2	–	–	–	–	– 220	yellow	39
10 to 22	27 to 47	56 to 68	82 to 100	120 to 150			40
4,7 to 8,2	–	–	–	–	– 330	green	45
10 to 27	33 to 56	68 to 82	100 to 120	150 to 180			46
6,8 to 8,2	–	–	–	–	– 470	blue	51
10 to 33	39 to 68	82 to 100	120 to 150	180 to 220			52
3,9 to 8,2	–	–	–	–	– 750	violet	57
10 to 47	56 to 100	120 to 150	180 to 220	270 to 330			58
18 to 82	100 to 180	220 to 270	330 to 390	470 to 560	– 1500	orange/orange	70

Tolerance C < 10 pF	0,25 pF
C ⩾ 10 pF	± 2%
Rated voltage (d.c.)	100 V
with test voltage (d.c.)	300 V
Category temperature range	– 55 to + 85 °C
Insulation resistance	> 10 000 MΩ
Tan δ C < 50 pF	⩽ 15(15/C + 0,7)10^{-4}; max 55x10^{-4}
C > 50 pF	⩽ 15 x 10^{-4}
Basic specification	IEC 384-8, type 1B
Climatic category IEC 68	55/085/21

size	Wmax	Hmax
I	3,6	3,7
II	4,5	4,7
III	5,1	5,3
IV	6,2	6,4
V	6,2	8,6

Dimensions (mm)

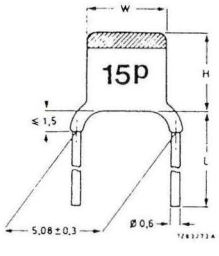


Fig. 1.

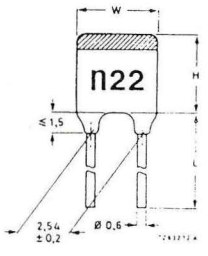


Fig. 2.

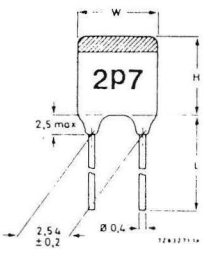


Fig. 3.

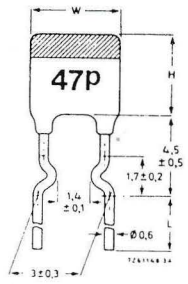


Fig. 4.

style	L	pitch
638	⩾ 15	0,2 inch
642	6^{+0}_{-2}	0,2 inch
631	⩾ 15	0,1 inch
641	6^{+0}_{-2}	0,1 inch
632	⩾ 15 flexible leads	
643	⩾ 10	

Slika 1 - Keramični kondenzatorji prvega razreda.

ceramic capacitors
miniature plate

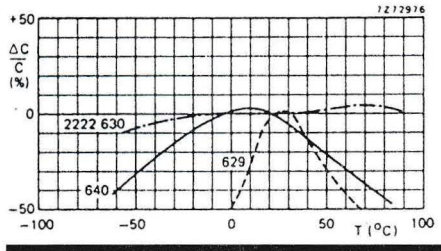
coupling and decoupling – type 2
2222 629 630 640

Low voltage capacitors for use in a wide variety of electronic equipment where a non-linear change in capacitance with temperature is acceptable. Their small size is also advantageous. With values up to 22 nF these three styles complement our lower capacitor ranges of type 1 capacitors.

Available values: refer to relevant drawing

capacitance pF	size 629	630	640	code XXX in catalogue no.
180		I		181
220		I		221
270		I		271
330		I		331
390		I		391
470		I		471
560		I		561
680		I		681
820		I		821
1000	I	II	I	102
1200		II		122
1500		II	I	152
1800		II		182
2200	I	III	I	222
2700		III		272
3300		IV	II	332
3900		IV		392
4700	I	IV	II	472
6800			III	682
10000	II		IV	103
22000	IV			223

Series 2222 . . .	**629**	**630**	**640**	
E series	E3	E12	E6	
Tolerance	– 20/ + 80	10	– 20/ + 50	%
Rated voltage (d.c.)	63	100	100	V
Test voltage (d.c.)	200	300	300	V
Category temperature range	– 10 to + 55	– 55 to + 85	– 55 to + 85	°C
Insulation resistance	> 1000	> 1000	> 3000	MΩ
Tan δ at 1 kHz	< 3,5	< 3,5	< 3,5	%
Climatic category IEC 68	10/055/21	55/085/21	55/085/21	
Basic specification	IEC 384-9	IEC 384-9	IEC 384-9	



Dimensions (mm)

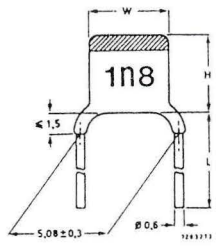


Fig. 1.

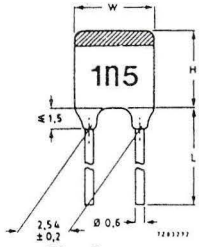


Fig. 2.

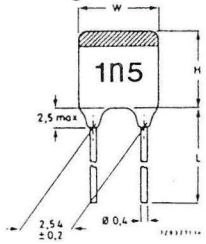


Fig. 3.

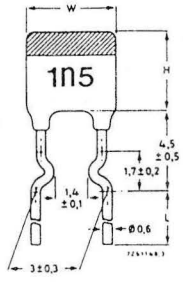
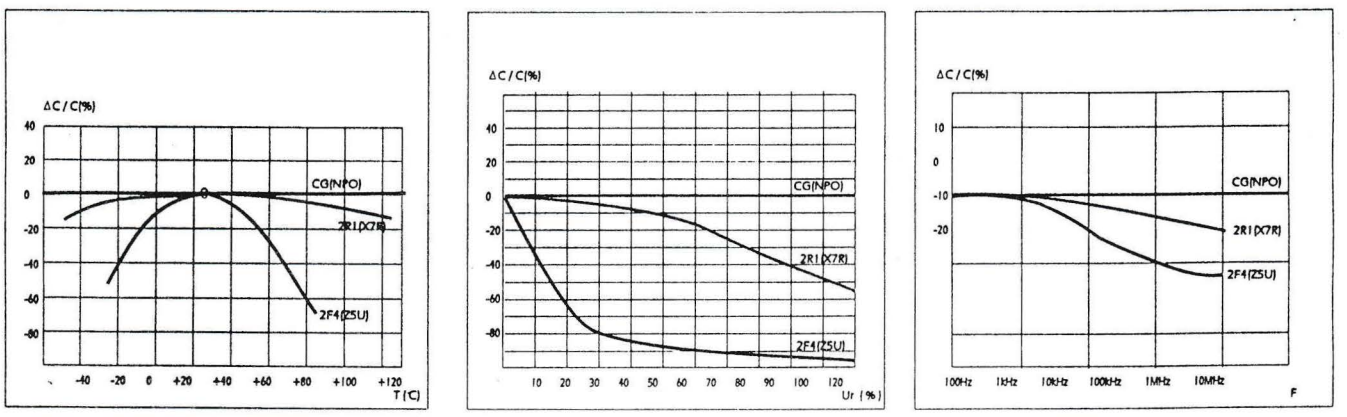


Fig. 4.

catalogue no.	L
2222 629 03 XXX 2222 630 03 XXX 2222 640 03 XXX	⩾ 15
2222 629 06 XXX 2222 630 06 XXX 2222 640 06 XXX	6^{+0}_{-2}
2222 629 01 XXX 2222 630 01 XXX 2222 640 01 XXX	⩾ 15
2222 629 05 XXX 2222 630 05 XXX 2222 640 05 XXX	6^{+0}_{-2}
2222 629 02 XXX 2222 630 02 XXX 2222 640 02 XXX	⩾ 15
2222 629 07 XXX 2222 630 07 XXX 2222 640 07 XXX	⩾ 10

size	W_{max}	H_{max}
I	3,6	3,7
II	4,5	4,7
III	5,1	5,3
IV	6,2	6,4

Slika 2 - Keramični kondenzatorji drugega razreda.



Slika 4 - Primerjava lastnosti prvega in drugega razreda.

tostjo in s frekvenco, kot je to prikazano na sliki 4. Pri previsoki zaporni napetosti kondenzator sicer ne prebije, pač pa se njegova kapacitivnost zmanjšuje, ker pride ferokeramika (podobno kot feromagnetna jedra) pri preveliki obrementvi v zasičenje.

Pri gradnji naših naprav je zato bistveno predvsem razlikovanje med keramiko prvega in drugega razreda. Pri enoslojnih kondenzatorjih to storimo iz ocene velikosti kondenzatorja za navedeno kapacitivnost. Pri večslojnih kondenzatorjih seveda nimamo vpogleda v notranjost, da bi prešteli sloje in izmerili razdaljo med njimi.

Večslojni kondenzatorji dosegajo kapacitivnosti vse do 10nF v NP0 izvedbi in več mikrofaradov pri uporabi keramike drugega razreda, se pravi tudi stokrat več od enoslojnih kondenzatorjev. Pri večslojnih kondenzatojih tudi ne smemo zanemariti upornosti elektrod, ki so izdelane iz tankih kovinskih plasti iz ne ravno najboljših prevodnikov. Končno, večslojne keramične kondenzatorje dobimo gole v SMD izvedbi ali pa zalite v plastiko z žičnimi izvodi.

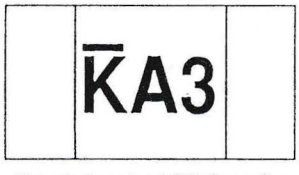
Pri ugotavljanju vrste keramike večslojnih kondenzatorjev si pomagamo z dejstvom, da je celotno telo kondenzatorja izdelano iz iste vrste keramike, vključno z zunanjimi oblogami. Vrsto keramike zato lahko vsaj v grobem določimo že po barvi. NP0 in ostali kondenzatorji iz keramike prvega razreda so ponavadi beli (pod 10pF) ali vijolični (nad 10pF), gledano pri sončni svetlobi oziroma svetlobi žarnice z nitko. Vijolični kondenzatorji ponavadi postanejo sivkasti ali zelenkasti v svetlobi fluorescentne žarnice.

Kondenzatorji iz keramike drugega razreda (feroelektrični pojav) pa so vedno rjavi v najrazličnejših odtenkih: od okrasto-rjave

CAPACITOR MARKINGS

All KEMET chips are marked on two sides (per EIA-198) with full identification. The marking includes a $\overline{K}$ to identify KEMET followed by two characters designating the capacitance value. See table for further details.

LASER MARKING



Example shown is a 1,000 pF capacitor.

Numeral / Alpha Character	Capacitance (pF) For Various Numeral Identifiers						
	9	0	1	2	3	4	5
A	0.10	1.0	10	100	1000	10,000	100,000
B	0.11	1.1	11	110	1100	11,000	110,000
C	0.12	1.2	12	120	1200	12,000	120,000
D	0.13	1.3	13	130	1300	13,000	130,000
E	0.15	1.5	15	150	1500	15,000	150,000
F	0.16	1.6	16	160	1600	16,000	160,000
G	0.18	1.8	18	180	1800	18,000	180,000
H	0.20	2.0	20	200	2000	20,000	200,000
J	0.22	2.2	22	220	2200	22,000	220,000
K	0.24	2.4	24	240	2400	24,000	240,000
L	0.27	2.7	27	270	2700	27,000	270,000
M	0.30	3.0	30	300	3000	30,000	300,000
N	0.33	3.3	33	330	3300	33,000	330,000
P	0.36	3.6	36	360	3600	36,000	360,000
Q	0.39	3.9	39	390	3900	39,000	390,000
R	0.43	4.3	43	430	4300	43,000	430,000
S	0.47	4.7	47	470	4700	47,000	470,000
T	0.51	5.1	51	510	5100	51,000	510,000
U	0.56	5.6	56	560	5600	56,000	560,000
V	0.62	6.2	62	620	6200	62,000	620,000
W	0.68	6.8	68	680	6800	68,000	680,000
X	0.75	7.5	75	750	7500	75,000	750,000
Y	0.82	8.2	82	820	8200	82,000	820,000
Z	0.91	9.1	91	910	9100	91,000	910,000
a	0.25	2.5	25	250	2500	25,000	250,000
b	0.35	3.5	35	350	3500	35,000	350,000
d	0.40	4.0	40	400	4000	40,000	400,000
e	0.45	4.5	45	450	4500	45,000	450,000
f	0.50	5.0	50	500	5000	50,000	500,000
m	0.60	6.0	60	600	6000	60,000	600,000
n	0.70	7.0	70	700	7000	70,000	700,000
t	0.80	8.0	80	800	8000	80,000	800,000
y	0.90	9.0	90	900	9000	90,000	900,000
	X0.1	X1.0	X10	X100	X1000	X10,000	X100,000

Slika 5 - Oznake SMD kondenzatorjev.