ceramic capacitors

survey

For detailed information
Handbook CM2b

Tuning: type 1
Coupling and decoupling: type 2 and 3

version	type	rated d.c. voltage V	capacitance range pF	series	status	page
general						
miniature plate	1	63 or 100	0,56 – 560	2222 631 to 643	D	357
	2	100	180 – 4 700	630	D	358
	2	100	1 000 – 10 000	640	D	358
	2	63	1 000 – 22 000	629	D	358
	3	6	22 000 – 100 000	675	C	359
disc	1	400	0,47 – 47	625	D	360
	2	400	27 – 3 900	627	D	361
high-voltage						
disc	2	2000	33 – 560	2212 659	D	362
	2	1000	33 – 820			
interference suppression						
disc	2	250 V(a.c.)	220 – 2 200	2212 660	D	363
safety						
disc	2	400 V(a.c.)	33 – 1 000	2212 661	D	363
tube	1B	400 V(a.c.)	22 – 390	2212 619	C	364
	2	400 V(a.c.)	390 – 4 700	619	C	364
feed-through	2	350	2,5 – 2 200	2222 700	D	365
	2	350	2,5 – 4 700	702	D	365
multilayer						
ceramic chip	1	50	10 – 10 000	2222 851 to 856	D	366
	2	50	100 – 470 000			

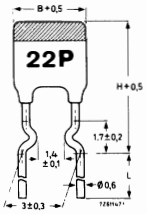
miniature plate

tuning – type 1
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.

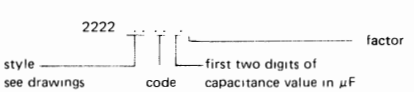
Capacitance range (E12 series)	0,56 to 560 pF
tolerance C < 10 pF	0,25 pF
C ⩾ 10 pF	± 2%
Rated voltage (d.c.)	63 or 100 V
with test voltage (d.c.)	200 or 300 V
Category temperature range	–55 to +85 °C
Insulation resistance	> 10 000 MΩ
Tan δ C < 50 pF	$\leqslant 15(15/C + 0{,}7)10^{-4}$; max 55×10^{-4}
C > 50 pF	$\leqslant 15 \times 10^{-4}$
Climatic category IEC 68	55/085/21
Basic specification	IEC 108, type 1

style	L
643	⩾ 10

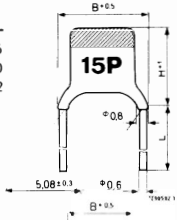


size	B	H
I	3	7,5
II	4	8,5
III	5	9,5
IV	6	10,5
V	6	13,5

Composition of the catalogue no.

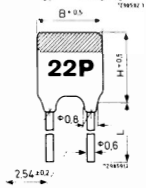


style	L
638	⩾ 15
642	6^{+0}_{-2}



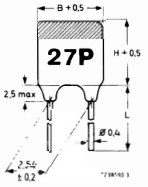
size	B	H
I	6	5
II	6	6
III	6	7
IV	6	8
V	6	11

style	L
631	⩾ 15
641	6^{+0}_{-2}



size	B	H
I	3	4
II	4	5
III	5	6
IV	6	7
V	6	10

style	L
632	⩾ 15 flexible leads

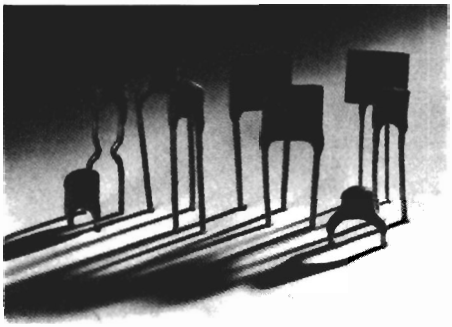


size	B	H
I	3	4
II	4	5
III	5	6
IV	6	7
V	6	10

code in cat. no.	capacitance range (E12) and relevant size I	II	III	IV	V	temperature coefficient ppm/°C	colour code	rated d.c. voltage V
03	0,56 – 6,8	8,2	–	–	–	+100	red/violet	100
04	–	10 – 15	18 – 22	27 – 33	39 – 47			
09	1,8 – 8,2	–	–	–	–	0	black	100
10	10 – 18	22 – 39	47 – 56	68 – 82	100 – 120			
27	3,9 – 8,2	–	–	–	–	–75	red	63
28	10 – 18	22 – 39	47 – 56	68 – 82	100 – 120			
33	3,9 – 8,2	–	–	–	–	–150	orange	100
34	10 – 22	27 – 47	56 – 68	82 – 100	120 – 150			
39	3,9 – 8,2	–	–	–	–	–220	yellow	63
40	10 – 22	27 – 47	56 – 68	82 – 100	120 – 150			
45	4,7 – 8,2	–	–	–	–	–330	green	100
46	10 – 27	33 – 56	68 – 82	100 – 120	150 – 180			
51	6,8 – 8,2	–	–	–	–	–470	blue	100
52	10 – 33	39 – 68	82 – 100	120 – 150	180 – 220			
57	3,9 – 8,2	–	–	–	–	–750	violet	100
58	10 – 47	56 – 100	120 – 150	180 – 220	270 – 330			
70	18 – 82	100 – 180	220 – 270	330 – 390	470 – 560	–1500	orange/orange	100

ceramic capacitors

miniature plate



coupling and decoupling – type 2
2222 629 630 640

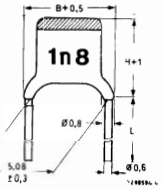
Low voltage capacitors for use in a wide variety of electronic equipment where a non-linear change in capacitance with temperature is acceptable. Their small size is also advantageous. With values up to 22 nF these three styles complement our lower capacitor ranges of type 1 capacitors.

SERIES 2222 ...	629	630	640	
Capacitance range	1000– 22 000	180– 4700	1000– 10 000	pF pF
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 187	IEC 187	IEC 187	

Available values: refer to relevant drawing

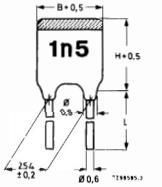
capacitance µF	629	size 630	640	code in catalogue no.
180		I		181
220		I		221
270		I		271
330		I		331
390		I		391
470		I		471
560		I		561
680		I		681
820		I		821
1000	I	II	I	102
1200		II		122
1500		II	I	152
1800		II		182
2200	I	III	I	222
2700		III		272
3300		IV	II	332
3900		IV		392
4700	I	IV	II	472
6800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

catalogue no.	L
2222 629 03 . .	
2222 630 03 . . .	⩾ 15
2222 640 03 . .	
2222 629 06 . .	
2222 630 06 . . .	6^{+0}_{-2}
2222 640 06 . .	



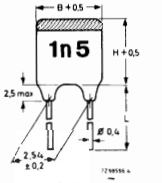
size	B	H
I	6	5
II	6	6
III	6	7
IV	6	8

catalogue no.	L
2222 629 01 . .	
2222 630 01 . . .	⩾ 15
2222 640 01 .	
2222 629 05 .	
2222 630 05 .	6^{+0}_{-2}
2222 640 05 . .	



size	B	H
I	3	4
II	4	5
III	5	6
IV	6	7

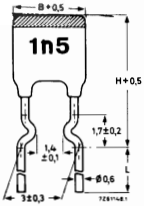
catalogue no.	L
2222 629 02 .	
2222 630 02 . .	⩾ 15
2222 640 02 .	



size	B	H
I	3	4
II	4	5
III	5	6
IV	6	7

catalogue no.	L
2222 629 07 .	
2222 630 07 . .	⩾ 10
2222 640 07 . . .	

code



size	B	H
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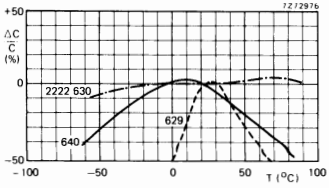
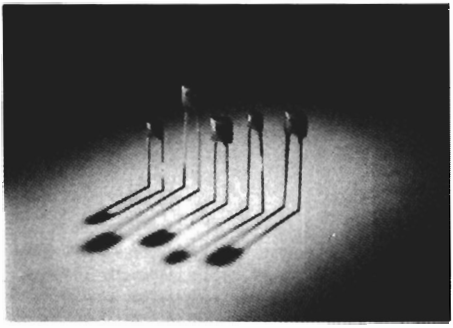
III	5	9,5
IV	6	10,5

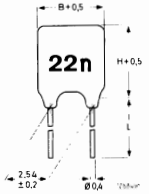


coupling and decoupling — type 3
2222 675



These type 3 capacitors offer very high capacitance values for their size. They have been designed for use in miniature transistor equipment, for example, in i.f. circuits of portable radios. Rigid and flexible lead versions are available: rigid for 0,1 inch PCB grids, flexible for spanning larger distances.

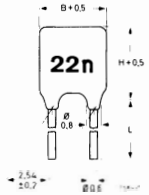
Capacitance	22, 47 and 100 nF
tolerance	−20/+80 %
Rated voltage (d.c.)	6 V
Test voltage (d.c.)	7,5 V
Category temperature range	−25 to +85 °C
Insulation resistance	RC ⩾ 0,025 s
Climatic category IEC 68	25/085/21



Type with flexible connecting leads: d = 0,4 mm.

nom. capacitance	dimensions (mm)				marking	catalogue no. 2222 675	
nF	B	H	T_{max}	L		0,6 mm leads	0,4 mm leads
22	3	4	2,5	⩾ 15	22n 6 V	20223	21223
47	4	5	2,1	⩾ 15	47n 6 V	20473	21473
100	6	7	2,1	⩾ 15	μ10 6 V	20104	21104

T_{max} = maximum thickness



Type with rigid connecting leads: d = 0,6 mm.