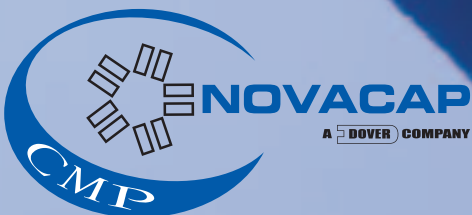
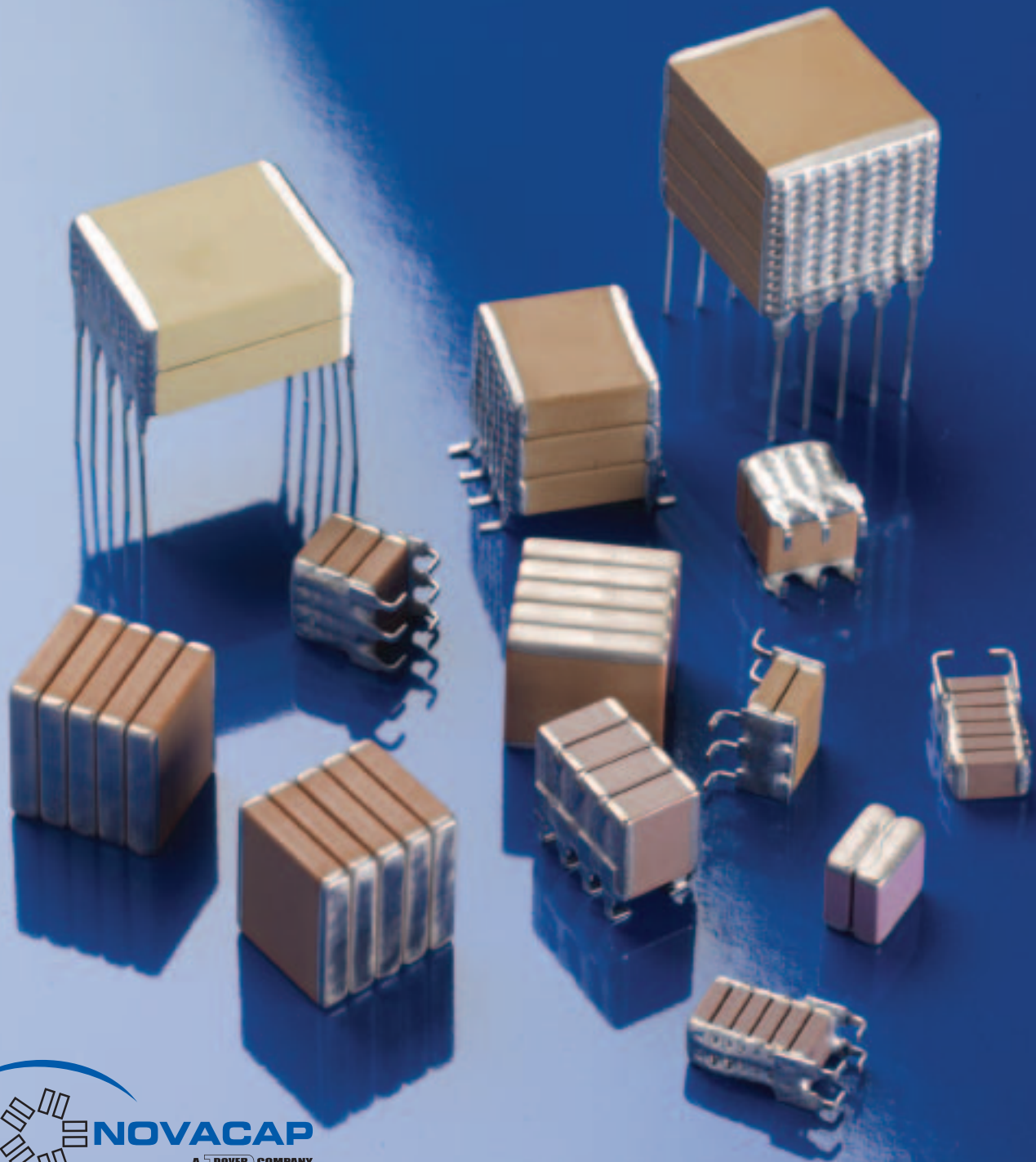


ST and SM Capacitor Assemblies



June 2008

INTRODUCTION



NOVACAP operates from a modern manufacturing facility located in Valencia, California. Products produced include surface mount capacitors from 0402 to very large high voltage units (up to 20kV) for commercial or high reliability applications. Specialty products include: Capacitor Arrays, Radial Leaded Capacitors and Pulsed Power capacitors for detonation circuitry, oil exploration circuitry, photoflash, laser, power interruption and power storage modules. NOVACAP also offers a full line of high temperature capacitors including 200°C devices for harsh environments such as oil exploration and automotive applications. NOVACAP has an excellent reputation for high reliability in military, medical implantable and life support systems. NOVACAP stands ready to supply our customers with any of our standard products or we will manufacture custom products to customer SCD.





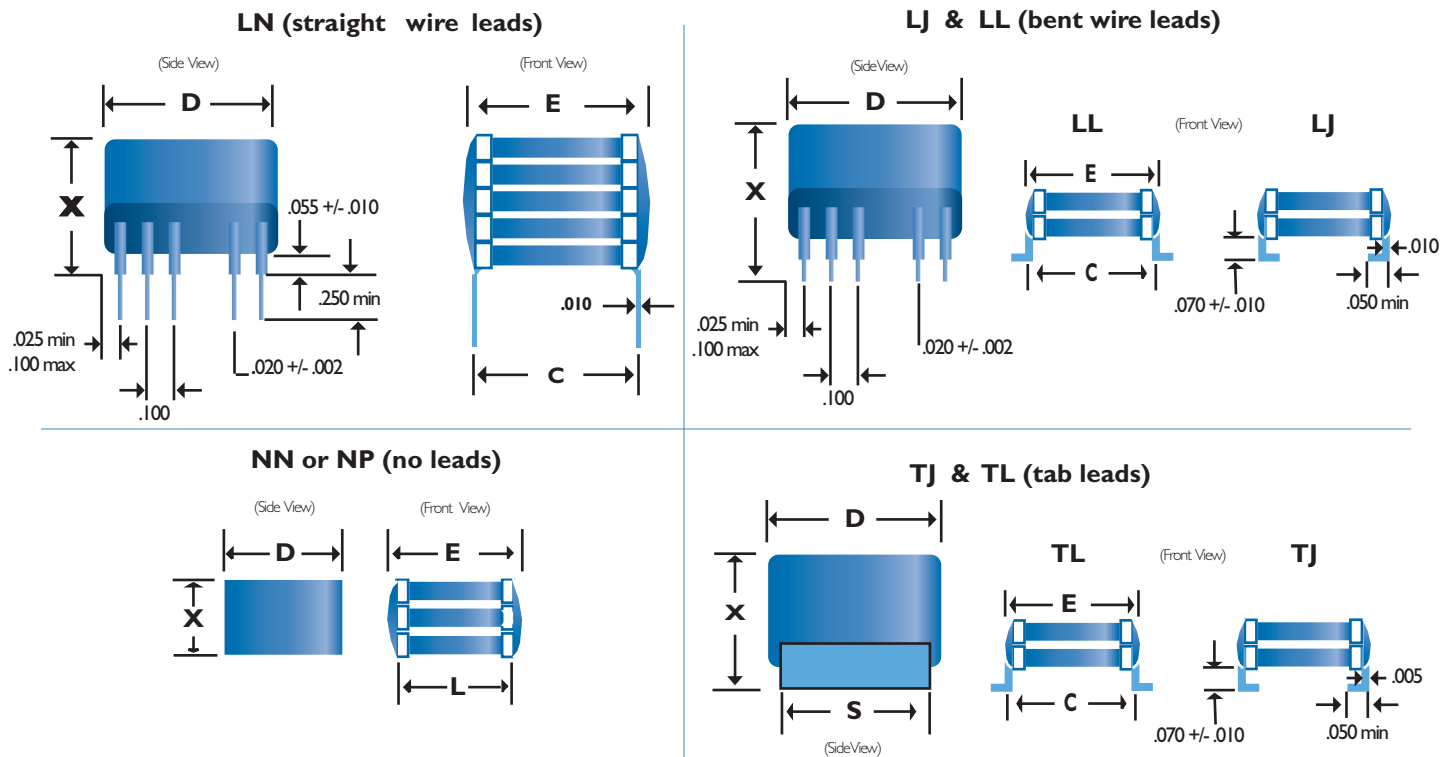
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ST AND SM - CAPACITOR ASSEMBLIES



NOVACAP capacitor assemblies with low equivalent series resistance (ESR) and low equivalent series inductance (ESL) are available in dielectric characteristics COG and X7R available for use in high power or high frequency applications, as replacement for tantalums and aluminum electrolytics. The leaded configurations safeguard the device against thermal and mechanical stresses, and include thru-hole and surface mount J and L style leads, bonded with high temperature solder. Applications include input and output filters in switch mode power supplies, high capacitance discharge circuits, and high temperature filtering/decoupling. Other sizes and voltage ratings than indicated in the tables are available, consult NOVACAP.

LEAD CONFIGURATION AND ASSEMBLY OPTIONS



DIMENSIONS

SIZE	1812	1825	2225	3640	4540	5550	7565
C +/- .025	.210 (5.33)	.210 (5.33)	.250 (6.35)	.400 (10.2)	.480 (12.2)	.580 (14.7)	.780 (19.8)
D +/- .025	.125 (3.18)	.250 (6.35)	.250 (6.35)	.400 (10.2)	.400 (10.2)	.500 (12.7)	.650* (16.5)
E (MAXIMUM)	.260 (6.60)	.260 (6.60)	.300 (7.62)	.430 (10.9)	.530 (13.5)	.630 (16.0)	.830 (21.1)
L (NOMINAL)	.180 (4.57)	.180 (4.57)	.220 (5.59)	.360 (9.14)	.450 (11.4)	.550 (14.0)	.750 (19.1)
LEADS/SIDE	N/A	3	3	4	4	5	6

Dimensions in inches; bracketed dimensions in millimeters
 * +/- .035". Contact the factory for RoHS compliant product.

ST AND SM - CAPACITOR ASSEMBLIES



The ST series provide the highest capacitance available, based on chip designs for general purpose use. The assemblies are 100% tested for Dielectric Withstanding Voltage, Insulation Resistance, Capacitance, and Dissipation Factor.

The SM series are designed and tested for high reliability military and industrial applications. The parts are tested per Group A of MIL-PRF-49470 (DSCC 87106). NOVACAP has a complete testing facility. Please contact the factory for any additional military testing requirements.

MAXIMUM STACK HEIGHT (X DIMENSION)

NO. OF CHIPS	SIZE RANGE	UNLEADED ASSEMBLIES	LEADED ASSEMBLIES	LEADED ASSEMBLIES
		NN, NP	LN, LL, LJ	TL, TJ
1	1812	.100 (2.54)	N/A	.180 (4.57)
	1825	.100 (2.54)	.180 (4.57)	.180 (4.57)
	2225	.120 (3.05)	.200 (5.08)	.200 (5.08)
	>2225	N/A	.200 (5.08)	.200 (5.08)
2	1812	.200 (5.08)	N/A	.280 (7.11)
	1825	.200 (5.08)	.280 (7.11)	.280 (7.11)
	2225	.240 (6.10)	.320 (8.13)	.320 (8.13)
	>2225	N/A	.320 (8.13)	.320 (8.13)
3	1812	.300 (7.62)	N/A	.380 (9.65)
	1825	.300 (7.62)	.380 (9.65)	.380 (9.65)
	2225	.360 (9.14)	.440 (11.2)	.440 (11.2)
	>2225	N/A	.440 (11.2)	.440 (11.2)
4	1812	.400 (10.2)	N/A	.480 (12.2)
	1825	.400 (10.2)	.480 (12.2)	.480 (12.2)
	2225	.480 (12.2)	.560 (14.2)	.560 (14.2)
	>2225	N/A	.560 (14.2)	.560 (14.2)
5	1812	.520 (13.2)	N/A	.600 (15.2)
	1825	.520 (13.2)	.600 (15.2)	.600 (15.2)
	2225	.635 (16.1)	.715 (18.2)	.715 (18.2)
	>2225	N/A	.715 (18.2)	.715 (18.2)

HOW TO ORDER

ST	3640	B	156	K	101	LJ	X	W	5
STYLE ST= General Purpose SM = High Reliability	SIZE See Chart	DIELECTRIC N = COG B = X7R	CAPACITANCE Value in Picofarads Two significant figures, followed by number of zeros: 825=8,200,000 pF (8.2mF)	TOLERANCE F = +/- 1.0 % G = +/- 2.0 % H = +/- 3.0 % J = +/- 5.0 % K = +/- 10 % M = +/- 20 % Z = +80% -20% P = +100% -0%	VOLTAGE-VDCW Two significant figures, followed by number of zeros: 101 = 100V	LEAD STYLE LN = Straight LL = L Lead LJ = J Lead TL = L Tab TJ = J Tab NN = Nickel NP = Pd/Ag	SEE CHART	PACKING OPTION W=Waffle T=Reeled *	NUMBER OF CHIPS

ST COG VALUES



The table below indicates the number of chips required to achieve the capacitance value.

CODE	1812				1825				2225				3640				CODE
	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	
100	1	1	1	1													100
120	1	1	1	1													120
150					1	1	1	1									150
180					1	1	1	1									180
220					1	1	1	1									220
270					1	1	1	1	1	1	1	1					270
330					1	1	1	1	1	1	1	1					330
390					1	1	1	1	1	1	1	1	1	1	1	1	390
470					1	1	1	1	1	1	1	1	1	1	1	1	470
560					1	1	1	1	1	1	1	1	1	1	1	1	560
680					1	1	1	1	1	1	1	1	1	1	1	1	680
820					1	1	1	1	1	1	1	1	1	1	1	1	820
101					1	1	1	1	1	1	1	1	1	1	1	1	101
121					1	1	1	1	1	1	1	1	1	1	1	1	121
151					1	1	1	1	1	1	1	1	1	1	1	1	151
181					1	1	1	1	1	1	1	1	1	1	1	1	181
221					1	1	1	1	1	1	1	1	1	1	1	1	221
271					1	1	1	1	1	1	1	1	1	1	1	1	271
331					1	1	1	1	1	1	1	1	1	1	1	1	331
391					1	1	1	1	1	1	1	1	1	1	1	1	391
471					1	1	1	1	1	1	1	1	1	1	1	1	471
561					1	1	1	1	1	1	1	1	1	1	1	1	561
681					1	1	1	1	1	1	1	1	1	1	1	1	681
821					1	1	1	1	1	1	1	1	1	1	1	1	821
102					1	1	1	1	1	1	1	1	1	1	1	1	102
122					1	1	1	1	1	1	1	1	1	1	1	1	122
152					1	1	1	1	1	1	1	1	1	1	1	1	152
182					1	1	1	1	1	1	1	1	1	1	1	1	182
222					1	1	1	1	1	1	1	1	1	1	1	1	222
272					1	1	1	1	1	1	1	1	1	1	1	1	272
332					1	1	1	1	1	1	1	1	1	1	1	1	332
392					1	1	1	1	1	1	1	1	1	1	1	1	392
472					1	1	1	1	1	1	1	1	1	1	1	1	472
562					1	1	1	1	1	1	1	1	1	1	1	1	562
682					1	1	1	1	1	1	1	1	1	1	1	1	682
822					1	1	1	1	1	1	1	1	1	1	1	1	822
103					1	1	1	1	1	1	1	1	1	1	1	1	103
123					1	1	1	1	1	1	1	1	1	1	1	1	123
153					1	1	1	1	1	1	1	1	1	1	1	1	153
183					1	1	1	1	1	1	1	1	1	1	1	1	183
223					1	1	1	1	1	1	1	1	1	1	1	1	223
273					1	1	1	1	1	1	1	1	1	1	1	1	273
333					1	1	1	1	1	1	1	1	1	1	1	1	333
393					1	1	1	1	1	1	1	1	1	1	1	1	393
473					1	1	1	1	1	1	1	1	1	1	1	1	473
563					1	1	1	1	1	1	1	1	1	1	1	1	563
683					1	1	1	1	1	1	1	1	1	1	1	1	683
823					1	1	1	1	1	1	1	1	1	1	1	1	823
104					1	1	1	1	1	1	1	1	1	1	1	1	104
124					1	1	1	1	1	1	1	1	1	1	1	1	124
154					1	1	1	1	1	1	1	1	1	1	1	1	154
184					1	1	1	1	1	1	1	1	1	1	1	1	184
224					1	1	1	1	1	1	1	1	1	1	1	1	224
274					1	1	1	1	1	1	1	1	1	1	1	1	274
334					1	1	1	1	1	1	1	1	1	1	1	1	334
394					1	1	1	1	1	1	1	1	1	1	1	1	394
474					1	1	1	1	1	1	1	1	1	1	1	1	474
564					1	1	1	1	1	1	1	1	1	1	1	1	564
684					1	1	1	1	1	1	1	1	1	1	1	1	684
824					1	1	1	1	1	1	1	1	1	1	1	1	824
105					1	1	1	1	1	1	1	1	1	1	1	1	105
125					1	1	1	1	1	1	1	1	1	1	1	1	125
155					1	1	1	1	1	1	1	1	1	1	1	1	155
185					1	1	1	1	1	1	1	1	1	1	1	1	185
225					1	1	1	1	1	1	1	1	1	1	1	1	225
275					1	1	1	1	1	1	1	1	1	1	1	1	275

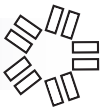
ST COG VALUES



The table below indicates the number of chips required to achieve the capacitance value.

CODE	4540				5550				6560				7565				CODE
	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	
100																	100
120																	120
150																	150
180																	180
220																	220
270																	270
330																	330
390	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	390
470	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	470
560	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	560
680	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	680
820	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	820
101													1	1	1	1	101
121													1	1	1	1	121
151													1	1	1	1	151
181													1	1	1	1	181
221													1	1	1	1	221
271													1	1	1	1	271
331													1	1	1	1	331
391													1	1	1	1	391
471													1	1	1	1	471
561													1	1	1	1	561
681													1	1	1	1	681
821													1	1	1	1	821
102													1	1	1	1	102
122													1	1	1	1	122
152													1	1	1	1	152
182													1	1	1	1	182
222													1	1	1	1	222
272													1	1	1	1	272
332													1	1	1	1	332
392													1	1	1	1	392
472													1	1	1	1	472
562													1	1	1	1	562
682													1	1	1	1	682
822													1	1	1	1	822
103													1	1	1	1	103
123													1	1	1	1	123
153													1	1	1	1	153
183													1	1	1	1	183
223													1	1	1	1	223
273													1	1	1	1	273
333													1	1	1	1	333
393													1	1	1	1	393
473													1	1	1	1	473
563													1	1	1	1	563
683													1	1	1	1	683
823													1	1	1	1	823
104													1	1	1	1	104
124													1	1	1	1	124
154													1	1	1	1	154
184													1	1	1	1	184
224													1	1	1	1	224
274													1	1	1	1	274
334													1	1	1	1	334
394													1	1	1	1	394
474													1	1	1	1	474
564													1	1	1	1	564
684													1	1	1	1	684
824													1	1	1	1	824
105													1	1	1	1	105
125													1	1	1	1	125
155													1	1	1	1	155
185													1	1	1	1	185
225													1	1	1	1	225
275													1	1	1	1	275

ST X7R VALUES



The table below indicates the number of chips required to achieve the capacitance value.

CODE	1812				1825				2225				3640				CODE
	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	
102	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	102
122	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	122
152	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	152
182	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	182
222	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	222
272	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	272
332	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	332
392	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	392
472	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	472
562	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	562
682	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	682
822	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	822
103	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	103
123	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	123
153	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	153
183	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	183
223	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	223
273	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	273
333	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	333
393	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	393
473	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	473
563	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	563
683	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	683
823	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	823
104	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	104
124	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	124
154	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	154
184	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	184
224	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	224
274	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	274
334	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	334
394	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	394
474	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	474
564	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	564
684	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	684
824	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	824
105	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	105
125	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	125
155	2	3	3	3	2	2	2	2	1	1	1	1	1	1	1	1	155
185	3	3	3	3	2	2	2	2	2	2	2	2	1	1	1	1	185
225	3	4	4	4	2	2	2	2	2	2	2	2	2	2	2	2	225
275	4	4	4	4	2	2	2	2	2	2	2	2	2	2	2	2	275
335	5	5			3	3	3	3	2	2	2	2	1	1	1	1	335
395	5				3	3	3	3	2	2	2	2	1	1	1	1	395
475					4	4	4	4	3	3	3	3	2	2	2	2	475
565					4	4	4	4	3	3	3	3	2	2	2	2	565
685					5	5			4	4	4	4	3	3	3	3	685
825									5	5			4	4	4	4	825
106													3	3	3	3	106
126													3	3	3	3	126
156													4	4	4	4	156
186													4	4	4	4	186
226													5	5	5	5	226
276																	276
336																	336
396																	396
476																	476
566																	566
686																	686
826																	826
107																	107

ST X7R VALUES



The table below indicates the number of chips required to achieve the capacitance value.

CODE	4540				5550				6560				7565				CODE
	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	
102	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	102
122	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	122
152	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	152
182	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	182
222	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	222
272	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	272
332	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	332
392	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	392
472	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	472
562	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	562
682	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	682
822	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	822
103	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	103
123	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	123
153	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	153
183	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	183
223	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	223
273	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	273
333	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	333
393	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	393
473	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	473
563	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	563
683	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	683
823	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	823
104	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	104
124	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	124
154	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	154
184	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	184
224	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	224
274	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	274
334	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	334
394	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	394
474	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	474
564	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	564
684	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	684
824	1	1	1	2	1	1	2	1	1	1	1	1	1	1	1	1	824
105	1	1	1	2	1	1	2	1	1	1	1	1	1	1	1	1	105
125	1	1	1	2	1	1	2	1	1	1	2	1	1	1	1	1	125
155	1	1	1	3	1	1	2	1	1	1	2	1	1	1	1	2	155
185	1	1	1	3	1	1	3	1	1	1	2	1	1	1	1	2	185
225	1	1	1	4	1	1	3	1	1	1	2	1	1	1	1	2	225
275	1	1	2	5	1	1	4	1	1	1	3	1	1	1	1	3	275
335	1	1	2		1	1	5	1	1	1	3	1	1	1	1	3	335
395	1	2	2		1	2		1	1	1	4	1	1	1	1	3	395
475	1	2	3		1	2		1	1	2	5	1	1	1	1	4	475
565	2	2	3		1	2		1	1	2		1	1	2	1	5	565
685	2	2	4		1	2		1	2	2		1	1	2	2		685
825	2	3	4		1	3		1	2	2		1	2	2	2		825
106	2	3	5		1	3		1	2	3		1	2	2	3		106
126	3	4			1	4		1	3	3		1	3	3	4		126
156	3	5			1	4		1	4	4		1	4	4	5		156
186	4				1	5		1	5	5		1	5	5			186
226	4				1			1				1					226
276	5				1			1				1					276
336					1			1				1					336
396					1			1				1					396
476					1			1				1					476
566					1			1				1					566
686					1			1				1					686
826					1			1				1					826
107					1			1				1					107

SM COG VALUES



The table below indicates the number of chips required to achieve the capacitance value.

CODE	1812				1825				2225				3640				CODE
	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	
100	1	1	1	1													100
120	1	1	1	1													120
150	1	1	1	1													150
180	1	1	1	1													180
220	1	1	1	1													220
270	1	1	1	1													270
330	1	1	1	1													330
390	1	1	1	1													390
470	1	1	1	1													470
560	1	1	1	1													560
680	1	1	1	1													680
820	1	1	1	1													820
101	1	1	1	1													101
121	1	1	1	1													121
151	1	1	1	1													151
181	1	1	1	1													181
221	1	1	1	1													221
271	1	1	1	1													271
331	1	1	1	1													331
391	1	1	1	1													391
471	1	1	1	1													471
561	1	1	1	1													561
681	1	1	1	1													681
821	1	1	1	1													821
102	1	1	1	1													102
122	1	1	1	1													122
152	1	1	1	1													152
182	1	1	1	1													182
222	1	1	1	1													222
272	1	1	1	1													272
332	1	1	1	1													332
392	1	1	1	1													392
472	1	1	1	1													472
562	1	1	1	2													562
682	1	1	1	2													682
822	1	1	1	2													822
103	1	1	1	2													103
123	1	1	1	3													123
153	1	1	1	3													153
183	1	1	1	4													183
223	1	1	1	5													223
273	1	1	1														273
333	1	2	2													2	333
393	2	2	2													2	393
473	2	2	3													2	473
563	2	3	3													2	563
683	3	3	3													3	683
823	3	3	4													3	823
104	3	4	5													3	104
124	4	5														4	124
154	5															5	154
184																	184
224																	224
274																	274
334																	334
394																	394
474																	474
564																	564
684																	684
824																	824
105																	105
125																	125
155																	155
185																	185
225																	225
275																	275

SM COG VALUES



The table below indicates the number of chips required to achieve the capacitance value.

CODE	4540				5550				6560				7565				CODE
	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	
100																	100
120																	120
150																	150
180																	180
220																	220
270																	270
330																	330
390	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	390
470	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	470
560	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	560
680	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	680
820	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	820
101	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	101
121	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	121
151	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	151
181	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	181
221	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	221
271	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	271
331	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	331
391	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	391
471	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	471
561	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	561
681	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	681
821	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	821
102	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	102
122	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	122
152	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	152
182	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	182
222	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	222
272	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	272
332	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	332
392	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	392
472	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	472
562	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	562
682	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	682
822	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	822
103	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	103
123	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	123
153	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	153
183	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	183
223	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	223
273	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	273
333	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	333
393	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	393
473	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	473
563	1	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	563
683	1	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	683
823	1	1	1	3	1	1	1	2	1	1	1	2	1	1	1	1	823
104	1	1	1	3	1	1	1	3	1	1	1	3	1	1	1	2	104
124	1	1	1	4	1	1	1	3	1	1	1	3	1	1	2	2	124
154	1	1	2	5	1	1	1	4	1	1	1	4	1	1	2	2	154
184	1	1	2	5	1	1	1	4	1	1	1	4	1	1	2	2	184
224	1	2	2	5	1	1	1	5	1	1	1	5	1	1	3	3	224
274	2	2	3	5	1	1	1	5	1	1	1	5	1	1	3	3	274
334	2	2	3	5	1	1	1	5	2	2	2	5	1	1	4	4	334
394	2	2	3	5	1	1	1	5	2	2	2	5	1	1	4	4	394
474	3	3	4	5	1	1	1	5	2	2	3	5	1	2	4	5	474
564	3	3	4	5	1	1	1	5	2	2	3	5	1	2	4	5	564
684	4	4	5	5	1	1	1	5	2	2	4	5	1	2	4	5	684
824	4	5	5	5	1	1	1	5	2	2	4	5	1	2	4	5	824
105	5	5	5	5	1	1	1	5	3	3	5	5	1	3	4	5	105
125	5	5	5	5	1	1	1	5	3	3	5	5	1	3	4	5	125
155	5	5	5	5	1	1	1	5	3	3	5	5	1	3	4	5	155
185	5	5	5	5	1	1	1	5	3	3	5	5	1	3	4	5	185
225	5	5	5	5	1	1	1	5	3	3	5	5	1	3	4	5	225
275	5	5	5	5	1	1	1	5	3	3	5	5	1	3	4	5	275

SM X7R VALUES



The table below indicates the number of chips required to achieve the capacitance value.

CODE	1812				1825				2225				3640				CODE
	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	
102	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	102
122	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	122
152	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	152
182	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	182
222	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	222
272	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	272
332	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	332
392	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	392
472	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	472
562	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	562
682	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	682
822	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	822
103	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	103
123	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	123
153	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	153
183	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	183
223	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	223
273	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	273
333	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	333
393	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	393
473	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	473
563	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	563
683	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	683
823	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	823
104	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	104
124	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	124
154	1	1	1	3	1	1	1	2	1	1	1	1	1	1	1	1	154
184	1	1	1	3	1	1	1	2	1	1	1	1	1	1	1	1	184
224	1	1	1	4	1	1	1	2	1	1	1	2	1	1	1	1	224
274	1	1	1	5	1	1	1	3	1	1	1	2	1	1	1	1	274
334	1	1	1		1	1	1	3	1	1	1	2	1	1	1	1	334
394	1	1	2		1	1	1	4	1	1	1	3	1	1	1	1	394
474	1	1	2		1	1	1	4	1	1	1	3	1	1	2	1	474
564	1	1	2		1	1	1	5	1	1	1	4	1	1	2	2	564
684	1	2	3		1	1	2		1	1	1	4	1	1	2	2	684
824	2	2	3		1	1	2		1	1	1	5	1	1	3	3	824
105	2	2	3		1	1	2		1	2	2		1	1	3	3	105
125	2	2	4		1	2	3		1	2	2		1	1	3	3	125
155	3	3	5		2	2	3		1	2	3		1	1	4	4	155
185	3	3			2	2	4		2	2	3		1	2	4	5	185
225	3	4			2	3	4		2	2	3		1	2	2		225
275	4	5			3	3	5		2	2	4		1	2	2		275
335	5				3	4			2	3	4		1	2	3		335
395					3	4			3	3	5		1	2	3		395
475					4	5			3	4			2	2	3		475
565					5				4	4			2	3	4		565
685									4	5			2	3	5		685
825									5				2	4			825
106													3	4			106
126													3	5			126
156													4				156
186													5				186
226																	226
276																	276
336																	336
396																	396
476																	476
566																	566
686																	686
826																	826
107																	107

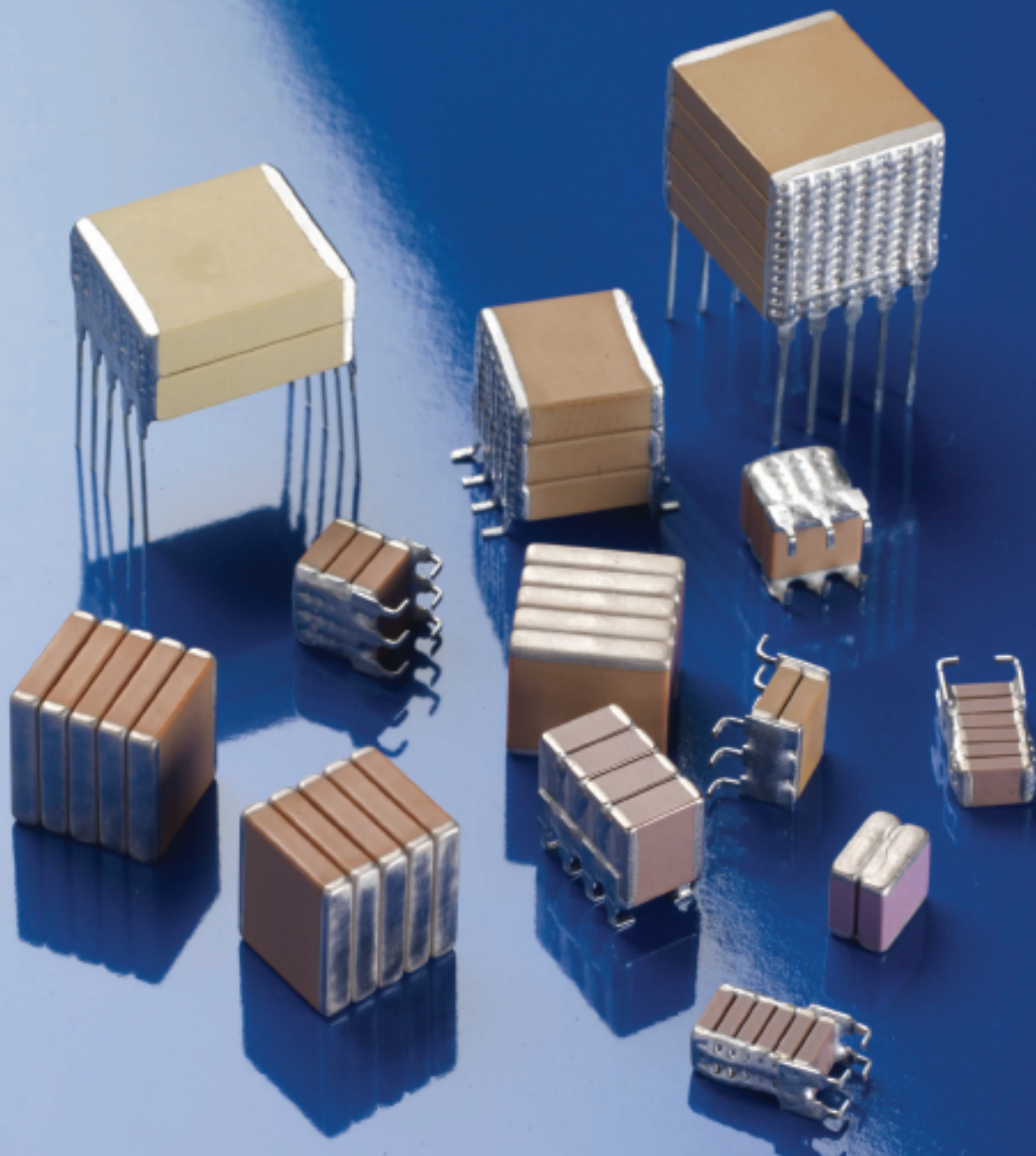
SM X7R VALUES



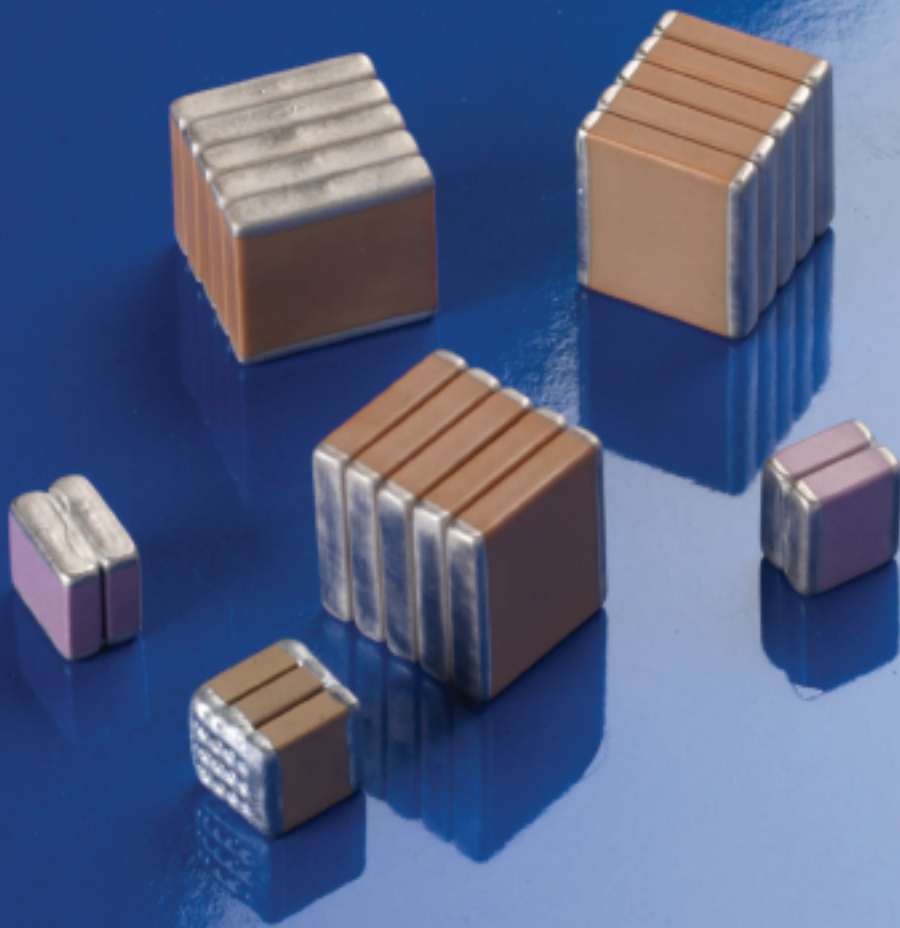
The table below indicates the number of chips required to achieve the capacitance value.

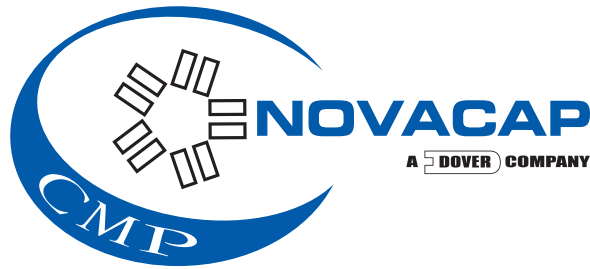
CODE	4540				5550				6560				7565				CODE
	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	
102	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	102
122	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	122
152	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	152
182	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	182
222	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	222
272	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	272
332	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	332
392	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	392
472	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	472
562	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	562
682	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	682
822	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	822
103	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	103
123	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	123
153	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	153
183	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	183
223	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	223
273	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	273
333	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	333
393	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	393
473	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	473
563	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	563
683	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	683
823	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	823
104	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	104
124	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	124
154	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	154
184	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	184
224	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	224
274	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	274
334	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	334
394	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	394
474	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	474
564	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	564
684	1	1	1	2	1	1	2	1	1	1	1	1	1	1	1	1	684
824	1	1	1	2	1	1	2	1	1	1	1	2	1	1	1	1	824
105	1	1	1	3	1	1	2	1	1	1	1	2	1	1	1	1	105
125	1	1	1	3	1	1	2	1	1	1	1	2	1	1	1	2	125
155	1	1	1	4	1	1	3	1	1	1	1	3	1	1	1	2	155
185	1	1	1	4	1	1	3	1	1	1	1	3	1	1	1	2	185
225	1	1	2	5	1	1	4	1	1	1	1	4	1	1	1	3	225
275	1	1	2	5	1	2	5	1	1	1	1	4	1	1	1	3	275
335	1	2	3	4	1	2	4	1	1	1	1	5	1	1	1	4	335
395	1	2	3	4	1	2	4	1	1	1	1	5	1	1	1	4	395
475	1	2	3	4	1	2	4	1	1	2	1	5	1	1	2	5	475
565	2	2	3	4	1	2	3	1	1	2	2	4	1	1	2	4	565
685	2	2	3	4	1	2	3	1	1	2	2	4	1	1	2	4	685
825	2	3	4	5	1	3	4	1	1	2	3	4	1	1	2	4	825
106	3	4	5	4	1	3	4	1	1	2	3	4	1	1	3	4	106
126	3	4	5	4	1	3	4	1	1	2	3	4	1	1	3	4	126
156	4	5	4	5	1	4	5	1	1	3	4	5	1	1	4	5	156
186	4	5	4	5	1	4	5	1	1	3	4	5	1	1	4	5	186
226	5	4	5	4	1	5	4	1	1	4	5	4	1	1	5	4	226
276	5	4	5	4	1	5	4	1	1	4	5	4	1	1	5	4	276
336					1			1	1				1	1			336
396					1			1	1				1	1			396
476					1			1	1				1	1			476
566					1			1	1				1	1			566
686					1			1	1				1	1			686
826					1			1	1				1	1			826
107					1			1	1				1	1			107

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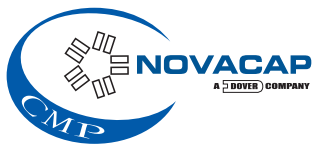




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