

High Reliability Chip - X7R - 16Vdc to 10kVdc

A range of MLC chip capacitors in Stable EIA Class II dielectric with special testing for long term reliability. They are designed for optimum reliability; burned in at elevated voltage and temperature, and 100% physically and electrically inspected to ascertain conformance to strict performance criteria. Units may be tested in accordance with MIL-PRF-55681, MIL-PRF-123, MIL-PRF-49467 or customer SCD.

Designed for surface mount application with nickel barrier terminations making them suitable for solder wave and reflow solder board attachment as well as vapor phase attachment for part sizes 2225 or smaller. Silver-palladium terminations are also available for hybrid use with conductive epoxy.

Class II X7R chips are used as decoupling, by-pass, filtering and transient voltage suppression elements and exhibit +/-15%

temperature coefficient and predictable variation of electrical properties with time, temperature and voltage.

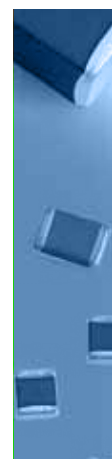
They find application for High Reliability use such as medical implanted devices, aerospace, airborne and military use as well as consumer uses requiring safety margins not attainable with commercial products.

Standard EIA case sizes and available C/V values are listed below - special sizes, thicknesses and other voltage ratings are available; please contact the Sales Office for information.

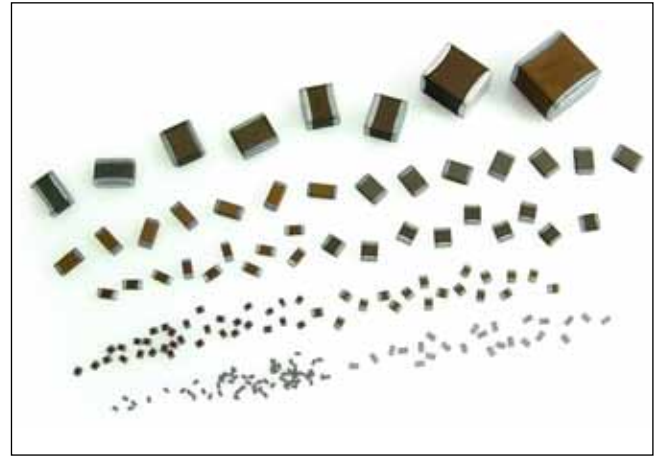
Capacitance and voltage selection for popular chip sizes

Size	0402	0504	0603	0805	1005	1206	1210	1515	1808	1812	1825			
Min cap.	121	121	121	121	121	121	121	151	151	151	151	151	471	471
Tmax inches: mm:	0.024 0.61	0.044 1.12	0.035 0.89	0.054 1.37	0.054 1.37	0.064 1.63	0.065 1.63	0.130 3.02	0.065 1.63	0.080* 2.03	0.065 1.63	0.100* 2.54	0.080 2.03	0.140* 3.56
16V	472	333	223	104	124	274	474	105	394	684	824	824	155	225
25V	472	333	223	104	124	274	474	824	394	564	824	824	155	225
50V	472	333	223	823	104	224	394	824	334	474	684	684	125	185
100V	392	273	183	563	683	154	274	684	224	334	474	474	105	185
200V	182	123	822	223	333	823	124	394	124	154	224	394	564	105
250V	102	822	562	183	273	393	823	224	683	104	124	124	394	684
300V	•	•	•	103	123	273	563	184	563	683	104	154	274	474
400V	•	•	•	682	682	183	333	104	333	393	563	124	184	334
500V	•	•	•	472	472	123	273	823	273	333	473	683	124	274
600V	•	•	•	332	272	682	153	563	183	223	273	473	823	184
800V[†]	•	•	•	222	182	472	103	333	103	123	183	273	563	104
1kV[†]	•	•	•	122	821	222	562	183	562	822	103	183	333	563
1.5kV[†]	•	•	•	•	•	102	222	822	272	332	392	822	123	273
2kV[†]	•	•	•	•	•	471	102	392	122	152	182	332	682	123
3kV[†]	•	•	•	•	•	•	•	102	391	471	821	152	152	332
4kV[†]	•	•	•	•	•	•	•	•	181	271	391	681	821	182
5kV[†]	•	•	•	•	•	•	•	•	•	•	•	•	561	102
6kV[†]	•	•	•	•	•	•	•	•	•	•	•	•	•	•
7kV[†]	•	•	•	•	•	•	•	•	•	•	•	•	•	•
8kV[†]	•	•	•	•	•	•	•	•	•	•	•	•	•	•
9kV[†]	•	•	•	•	•	•	•	•	•	•	•	•	•	•
10kV[†]	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Note: † Units rated above 800V may require conformal coating to preclude arcing over chip surface. Maximum voltage for MIL-PRF-123 tested parts is 1kV.



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Note: Maximum capacitance values are shown below as 3 digit code: 2 significant figures followed by the no. of zeros e.g. 183 = 18,000pF.

Capacitance and voltage selection for popular chip sizes

2020	2221	2225		2520	3333	3530	4040	4540	5440	5550	6560	7565	Size
102	471	471	471	102	102	102	102	102	102	102	222	222	Min cap.
0.180 4.57	0.080 2.03	0.080 2.03	0.150* 3.81	0.180 4.57	0.250 6.35	0.250 6.35	0.300 7.62	0.300 7.62	0.300 7.62	0.300 7.62	0.300 7.62	0.300 7.62	inches: Tmax mm:
185	125	185	275	225	475	475	825	825	106	126	186	226	16V
155	125	185	225	225	475	475	685	825	106	126	186	206	25V
155	125	155	225	155	395	395	685	685	825	106	156	186	50V
125	824	125	185	125	335	335	565	685	685	825	106	156	100V
105	474	564	125	125	275	275	475	475	565	685	825	106	200V
684	394	394	684	804	225	225	475	475	565	685	825	106	250V
564	224	334	684	684	185	185	335	335	395	475	685	825	300V
334	154	184	394	394	105	105	185	225	225	275	335	565	400V
224	154	154	334	274	684	684	125	155	155	185	275	395	500V
154	823	104	224	184	474	474	824	824	105	155	225	275	600V
104	563	683	124	124	334	334	564	684	824	125	185	225	800V[†]
563	273	393	823	683	184	184	394	474	474	684	105	125	1kV[†]
123	123	153	333	333	823	823	184	184	224	274	474	564	1.5kV[†]
123	562	822	153	153	473	473	104	104	124	184	224	334	2kV[†]
272	182	222	392	562	223	223	333	473	473	683	104	154	3kV[†]
182	821	102	222	272	123	123	183	223	273	393	563	823	4kV[†]
102	561	561	122	182	682	822	103	153	183	273	393	473	5kV[†]
•	•	•	•	•	472	562	682	103	123	183	273	333	6kV[†]
•	•	•	•	•	•	392	472	682	822	123	183	273	7kV[†]
•	•	•	•	•	•	272	392	562	682	103	153	183	8kV[†]
•	•	•	•	•	•	222	272	392	472	682	123	153	9kV[†]
•	•	•	•	•	•	152	222	332	392	562	822	123	10kV[†]

Note: † Units rated above 800V may require conformal coating to preclude arcing over chip surface.
Maximum voltage for MIL-PRF-123 tested parts is 1kV.

Should be ordered as Novacap parts.

www.knowlescapacitors.com