



# SMT-X7R DIELECTRIC



Stable EIA Class II dielectric, with +/-15% temperature coefficient and predictable variation of electrical properties with time, temperature and voltage. These chips are designed for surface mount application with nickel barrier terminations suitable for solder wave, vapor phase or reflow solder board attachment. Also available in silver-palladium terminations for hybrid use with conductive epoxy. Class II X7R chips are used as decoupling, by-pass, filtering and transient voltage suppression elements.



## CAPACITANCE & VOLTAGE SELECTION FOR POPULAR CHIP SIZES

3 digit code: two significant digits, followed by number of zeros eg: 473 = 47,000 pF

SIZE	0402	0504	0603	0805	1005	1206	1210	1808	1812	1825	2221	2225
Min Cap	121	121	121	121	121	121	121	151	151	471	471	471

MAX CAP & VOLTAGE

16V	562	473	273	124	154	334	684	824	125	185	185	185
25V	562	333	223	104	124	274	474	564	105	155	155	185
50V	392	333	223	104	124	274	474	564	105	155	155	185
100V	272	223	153	104	104	154	274	334	684	155	155	185
200V	152	123	103	393	473	104	154	184	334	824	824	105
250V	152	123	682	333	473	683	124	154	274	684	564	824
300V	.	.	.	153	183	473	823	104	184	474	474	564
400V	.	.	.	123	153	473	683	823	154	474	394	474
500V	.	.	.	103	123	223	563	473	104	274	274	334
600V	.	.	.	682	682	153	393	473	823	224	224	274
800V*	.	.	.	392	392	103	273	273	473	154	124	184
1000V*	.	.	.	272	272	682	153	183	333	104	823	124
1500V*	.	.	.	.	.	222	472	562	822	273	273	333
2000V*	.	.	.	.	.	122	272	272	472	153	153	183
3000V*	.	.	.	.	.	.	.	102	152	562	562	682
4000V*	.	.	.	.	.	.	.	271	561	122	122	182

\*Units rated above 800V may require conformal coating in use to preclude arcing over the chip surface.

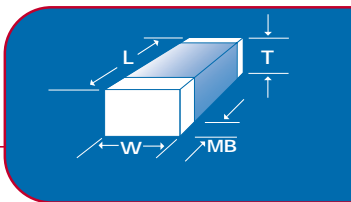
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# PRODUCT OFFERING



See chart for standard EIA case sizes and available capacitance and voltage ratings. Special sizes, thickness and other voltage ratings are available, see other NOVACAP product offerings. High reliability testing is available per MIL-PRF-55681, MIL-PRF-123, or to customer SCD. Please consult the factory with your requirements. NOVACAP has complete testing facilities at your disposal.



## DIMENSIONS +/- INCHES (MM)

SIZE	0402	0504	0603	0805	1005	1206	1210	1808	1812	1825	2221	2225
LENGTH L	.040 (1.02)	.050 (1.27)	.060 (1.52)	.080 (2.03)	.100 (2.54)	.125 (3.18)	.125 (3.18)	.180 (4.57)	.180 (4.57)	.180 (4.57)	.220 (5.59)	.220 (5.59)
WIDTH W	.020 (.508)	.040 (1.02)	.030 (.760)	.050 (1.27)	.050 (1.27)	.060 (1.52)	.100 (2.54)	.080 (2.03)	.125 (3.18)	.250 (6.35)	.210 (5.33)	.250 (6.35)
T MAX.	.024 (.610)	.044 (1.12)	.035 (.889)	.054 (1.37)	.054 (1.37)	.064 (1.63)	.065 (1.65)	.065 (1.65)	.065 (1.65)	.080 (2.03)	.080 (2.03)	.080 (2.03)
MB	.010 (.254)	.014 (.355)	.014 (.355)	.020 (.508)	.020 (.508)	.020 (.508)	.020 (.508)	.024 (.610)	.024 (.610)	.024 (.610)	.030 (.760)	.030 (.760)

## TOLERANCES +/- INCHES (MM)

LENGTH	.004 (.102)	.006 (.152)	.006 (.152)	.008 (.203)	.008 (.203)	.008 (.203)	.008 (.203)	.012 (.305)	.012 (.305)	.012 (.305)	.015 (.380)	.015 (.380)
WIDTH	.004 (.102)	.006 (.152)	.006 (.152)	.008 (.203)	.008 (.203)	.008 (.203)	.008 (.203)	.008 (.203)	.008 (.203)	.015 (.380)	.015 (.380)	.015 (.380)
MB	.006 (.152)	.006 (.152)	.006 (.152)	.010 (.254)	.010 (.254)	.010 (.254)	.010 (.254)	.014 (.355)	.014 (.355)	.014 (.355)	.015 (.380)	.015 (.380)

## HOW TO ORDER

1206	B	104	J	250	N	X	T	M
<b>SIZE</b> See Chart	<b>DIELECTRIC</b> B = X7R	<b>CAPACITANCE</b> Value in Picofarads Two significant figures, followed by number of zeros: 104 = 100,000pF	<b>TOLERANCE</b> J = +/- 5.0% K = +/- 10 % M = +/- 20 % Z = +80%-20% P = +100%-0%	<b>VOLTAGE-VDCW</b> Two significant figures, followed by number of zeros: 250 = 25V	<b>TERMINATION</b> N = Nickel Barrier (100% Sn)  P = Palladium Silver  Y = Nickel Barrier (90Sn/10Pb)	<b>THICKNESS OPTION</b> X = Non-standard thickness. Specify in Mils if non-standard is required. Standard items are any thickness to Max. shown in charts.	<b>PACKING OPTION</b> T = Reeled	<b>MARKING OPTION</b> M = Marked (See Marking Specifications)

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