



# 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	393	273	124	154	334	474	684	125	185	155	225
25V	472	333	223	104	124	274	474	564	105	155	125	185
50V	472	333	223	104	124	274	474	394	824	155	125	185
100V	472	333	223	683	823	184	334	274	684	125	125	155
200V	222	153	103	333	473	823	184	184	334	824	684	105
250V	152	103	682	273	393	683	124	124	224	684	564	824
300V	.	.	.	153	183	473	823	823	154	474	394	474
400V	.	.	.	123	123	273	563	563	104	334	274	394
500V	.	.	.	123	822	223	563	563	104	334	274	334
600V	.	.	.	822	822	183	393	393	683	224	224	274
800V*	.	.	.	472	472	103	273	273	473	124	124	154
1000V*	.	.	.	272	272	682	153	153	273	823	823	104
1500V*	.	.	.	.	.	222	472	472	822	273	273	333
2000V*	.	.	.	.	.	102	222	272	392	123	123	153
3000V*	.	.	.	.	.	.	.	821	152	472	472	562
4000V*	.	.	.	.	.	.	.	331	681	152	152	152

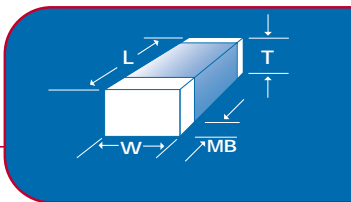
\*Units rated above 800V may require conformal coating in use to preclude arcing over the chip surface.



# 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)