X8R - HIGH TEMPERATURE 150ºC

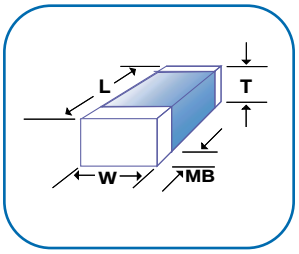
NOVACAP manufactures X8R, Class II dielectric chip capacitors designed to operate from -55°C to 150°C. Product applications include harsh environments such as oil exploration and Automotive/Avionics engine compartment circuitry. Product is available as surface mount chips in sizes 0805 to 7565. Consult Novacap if your specific requirements exceed our catalog maximums (size, cap. value, and voltage).

CAPACITANCE & VOLTAGE SELECTION

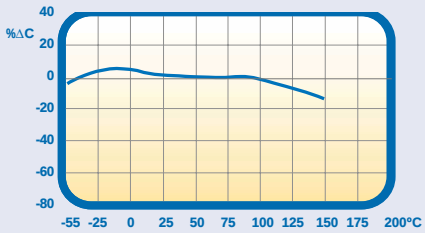
3 digit code: two significant digits, followed by number of zeros eg: 473 = 47,000 pF

MAX CAP & VOLTAGE

SIZE	0805	1206	1210	1812	1825	2225	4540	7565
Min Cap	121	221	331	221	102	102	102	222
25V	563	184	334	684	125	155	565	156
50V	473	154	274	564	105	125	475	126
100V	333	104	184	394	824	105	395	106
250V	183	333	823	154	474	564	275	685
500V	562	153	393	563	124	154	125	325

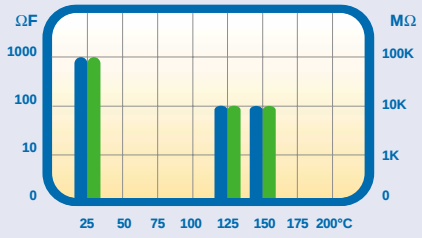


TEMPERATURE COEFFICIENT



X8R

MINIMUM IR VS. TEMPERATURE



ΩF MΩ WHICHEVER IS LESS FOR ANY GIVEN CAPACITANCE

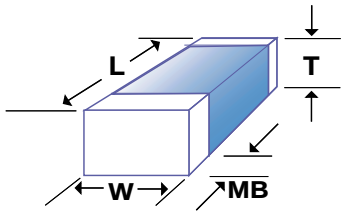
X8R DIELECTRIC CHARACTERISTICS

Operating Temperature Range:	**-55ºC to 150ºC**
Temperature Coefficient up to 150ºC:	**+/- 15% ΔC Max**
Dissipation Factor @ 25ºC:	**.025 (2.5%) Max**
Insulation Resistance at 25ºC:	**>100G Ω or >1000Ω F**
at 150ºC:	**>10G Ω or >100Ω F**
Dielectric Withstanding Voltage: *whichever is greater	**< 200V, 250% 201-500V, 150% or 500V* > 500V, 120% or 750V***
Aging Rate:	**< 2.0% per decade**
Test Parameters:	**1KHz, 1.0 +/-0.2 VRMS, 25ºC**

HOW TO ORDER

1210	S	104	K	101	P	X	H	T	M
SIZE See Chart	**DIELECTRIC** S = X8R	**CAPACITANCE** Value in Picofarads Two significant figures, followed by number of zeros: 104 = 100,000 pF	**TOLERANCE** J = +/- 5 % K = +/- 10 % M = +/- 20 %	**VOLTAGE-VDCW** Two significant figures, followed by number of zeros: 101 = 100V	**TERMINATION** N = Nickel Barrier (100% Tin) P = Palladium Silver Y = Nickel Barrier (90% Tin/10% Lead)	**THICKNESS OPTION** X = Non-standard thickness. Specify in Mils if non-standard is required. Standard items are any thickness to Max. shown in charts.	**HIGH TEMP SCREENING** Novacap High Temp Screen	**PACKING OPTION** T = Reeled	**MARKING OPTION** M = Marked (See Marking Specification)

PART NUMBER PREFIX DEFINITIONS



CODE COMBINATIONS

Dielectric Code	Max. Temp. Rated	Terminations (allowed)
N (COG/NPO)	125º	N, P, Y, S, V
B (X7R)	125º	N, P, Y, C, D, S, V
X (BX)	125º	N, P, Y, C, D, S, V
Y (Y5V)	125º	N, Y, C, D
Z (Z5U)	125º	N, Y, C, D
D (NPO-HIGH TEMP)	200º	P, S, V
E (CLASS 11-HIGH TEMP)	200º	P, S, V
F (NPO-HIGH TEMP)	160º	N, P, Y, S, V
G (CLASS 11-HIGH TEMP)	160º	N, P, Y, S, V
S (X8R)	150º	N, P, Y, S, V
P (PULSE POWER)	85º	P
R (R2D)	200º	P
W (X5R)	85º	N

DIMENSIONS INCHES (MM)

SIZE	0402	0504	0603	0805	0907	1005	1206	1210	1515	1808	1812	1825
LENGTH L	.040 (1.02)	.050 (1.27)	.060 (1.52)	.080 (2.03)	.090 (2.29)	.100 (2.54)	.125 (3.18)	.125 (3.18)	.150 (3.81)	.180 (4.57)	.180 (4.57)	.180 (4.57)
WIDTH W	.020 (.508)	.040 (1.02)	.030 (.762)	.050 (1.27)	.070 (1.78)	.050 (1.27)	.060 (1.52)	.100 (2.54)	.150 (3.81)	.080 (2.03)	.125 (3.18)	.250 (6.35)
T MAX.	.024 (.610)	.044 (1.12)	.035 (.889)	.054 (1.37)	.054 (1.37)	.054 (1.37)	.064 (1.63)	.065 (1.65)	.130 (3.30)	.065 (1.65)	.065 (1.65)	.080 (2.03)
MB	.010 (.254)	.014 (.356)	.014 (.356)	.020 (.508)	.020 (.508)	.020 (.508)	.020 (.508)	.020 (.508)	.030 (.762)	.024 (.610)	.024 (.610)	.024 (.610)

TOLERANCE +/- INCHES (MM)

LENGTH	.004 (.102)	.006 (.152)	.006 (.152)	.008 (.203)	.008 (.203)	.008 (.203)	.008 (.203)	.008 (.203)	.015 (.381)	.012 (.305)	.012 (.305)	.012 (.305)
WIDTH	.004 (.102)	.006 (.152)	.006 (.152)	.008 (.203)	.008 (.203)	.008 (.203)	.008 (.203)	.008 (.203)	.015 (.381)	.008 (.203)	.008 (.203)	.015 (.381)
MB	.006 (.152)	.006 (.152)	.006 (.152)	.010 (.254)	.010 (.254)	.010 (.254)	.010 (.254)	.010 (.254)	.015 (.381)	.014 (.356)	.014 (.356)	.014 (.356)

DIMENSIONS INCHES (MM)

SIZE	2020	2221	2225	2520	3333	3530	4040	4540	5440	5550	6560	7565
LENGTH L	.200 (5.08)	.220 (5.59)	.220 (5.59)	.250 (6.35)	.330 (8.38)	.350 (8.89)	.400 (10.2)	.450 (11.4)	.540 (13.7)	.550 (14.0)	.650 (16.5)	.750 (19.1)
WIDTH W	.200 (5.08)	.210 (5.33)	.250 (6.35)	.200 (5.08)	.330 (8.38)	.300 (7.62)	.400 (10.2)	.400 (10.2)	.400 (10.2)	.500 (12.7)	.600 (15.2)	.650 (16.5)
T MAX.	.180 (4.57)	.080 (2.03)	.080 (2.03)	.180 (4.57)	.250 (6.35)	.250 (6.35)	.300 (7.62)	.300 (7.62)	.300 (7.62)	.300 (7.62)	.300 (7.62)	.300 (7.62)
MB	.024 (.610)	.030 (.762)	.030 (.762)	.030 (.762)	.030 (.762)	.030 (.762)	.040 (1.02)	.040 (1.02)	.040 (1.02)	.040 (1.02)	.040 (1.02)	.040 (1.02)

TOLERANCE +/- INCHES (MM)

LENGTH	.015 (.381)	.015 (.381)	.015 (.381)	.015 (.381)	.017 (.432)	.018 (.457)	.020 (.508)	.023 (.584)	.027 (.686)	.028 (.711)	.033 (.838)	.038 (.965)
WIDTH	.015 (.381)	.015 (.381)	.015 (.381)	.015 (.381)	.017 (.432)	.015 (.381)	.020 (.508)	.020 (.508)	.020 (.508)	.025 (.635)	.030 (.762)	.033 (.838)
MB	.014 (.356)	.015 (.381)	.015 (.381)	.015 (.381)	.015 (.381)	.015 (.381)	.020 (.508)	.020 (.508)	.020 (.508)	.020 (.508)	.020 (.508)	.020 (.508)

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