

200°C HIGH TEMPERATURE - COG

NOVACAP manufactures COG chip capacitors designed and tested to operate from -55°C to 200°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. Please refer to our Leaded encapsulated devices in sizes 1515 to 7565 for additional high temperature capacitors. Consult Novacap if your specific requirements exceed our catalog maximums (size, cap. value, and voltage).

COG

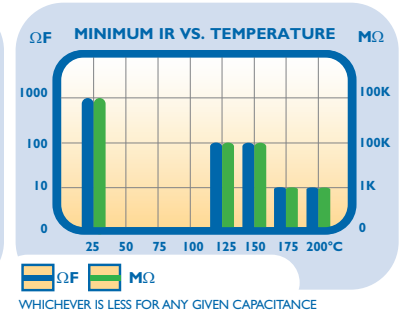
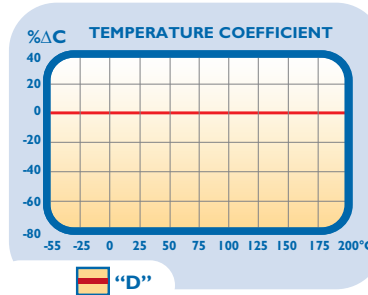
CAPACITANCE & VOLTAGE SELECTION

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

SIZE	0805	1206	1210	1515	1808	1812	1825	2225	3530	4540	6560	7565	
Min Cap	0R5	1R0	5R0	5R0	120	220	330	470	221	390	560	101	
Tmax	.054	.064	.065	.130	.065	.065	.080	.080	.250	.300	.300	.300	
MAX CAP & VOLTAGE	25V	272	562	123	223	123	223	563	563	104	184	334	394
	50V	182	392	822	183	822	153	393	473	823	154	274	334
	100V	681	182	332	103	332	822	153	183	563	104	224	274
	250V	471	102	222	392	222	562	123	183	333	563	124	154
	500V	181	391	821	272	102	222	392	562	123	273	563	683
	1000V	470	101	221	821	221	561	821	102	562	153	333	393
	2000V	•	270	560	181	560	121	181	271	152	332	822	103
	3000V	•	•	•	820	220	560	820	101	561	152	332	392
	4000V	•	•	•	470	120	270	330	470	331	821	182	222

COG DIELECTRIC CHARACTERISTICS

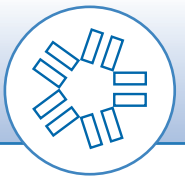
Operating Temperature Range:	-55°C to 200°C
Temperature Coefficient up to 200°C:	0 +/- 30 ppm/°C
Dissipation Factor @ 25°C:	.001 (0.1%) Max
Insulation Resistance at 25°C:	>100GΩ or >1000ΩF
at 200°C:	> 1GΩ or >10ΩF
Dielectric Withstanding Voltage:	< 200V, 250%
whichever is greater	201-500V, 150% or 500V
	> 500V, 120% or 750V*
Aging Rate:	0% per decade
Test Parameters:	1KHz, 1.0 +/-0.2 VRMS, 25°C
	1MHz for Capacitance <100pf



HOW TO ORDER

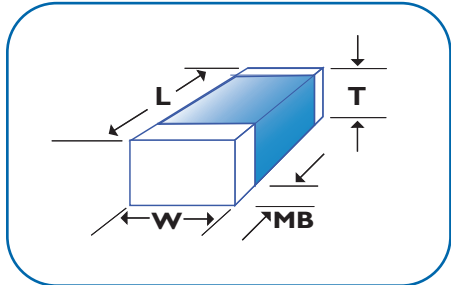
1812	D	822	K	251	P	X	H	T	M
SIZE See Chart	DIELECTRIC D = 200°C COG F = up to 160°C COG	CAPACITANCE Value in Picofarads Two significant figures, followed by number of zeros: 822 = 8,200 pF	TOLERANCE F = 1% G = 2% J = +/- 5 % K = +/- 10 % M = +/- 20 %	VOLTAGE-VDCW Two significant figures followed by number of zeros: 251 = 250V	TERMINATION P = Palladium Silver F Dielectric Code Only up to 160°C C=Polymer/Nickel Barrier/100% Tin D=Polymer/Nickel Barrier 90% Tin/10% Lead N=Nickel Barrier 100% Tin 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)

NOTE: REFER TO PAGE 11 FOR DIMENSIONS
Catalog 09-08-PC



PART NUMBER PREFIX DEFINITIONS

LS = Y3 Certified Safety Capacitor	pg. 38
ES = Y2 Certified Safety Capacitor	pg. 39
AP = Arc Prevention Capacitor	pg. 54
CR = Cap-Rack Capacitor Array	pg. 42 - 43
RC = Bleed Resistor	pg. 34 - 37
RD = Ring Detect Capacitor	pg. 40
ST = Stacked Capacitor Assembly	pg. 54 - 55
SM = Hi-Rel Stacked Capacitor Assembly	pg. 54 - 55



CODE COMBINATIONS

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

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)
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)

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)
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)