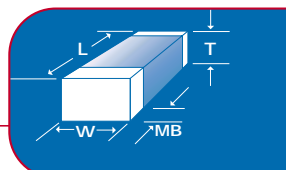




HIGH RELIABILITY RANGES

NOVACAP high voltage capacitors are available specially tested for long term reliability. The non-polar inner electrode design permits capacitors to be arrayed in stacks with no voltage gradient between units. Chips have rounded surfaces to improve structural integrity and encapsulation in use. Units may be tested to MIL-PRF-49467 and MIL-PRF-55681. Applications include aerospace, airborne and military use for radar, power supplies and voltage multiplier circuits. Other sizes and voltage ratings are available, please consult NOVACAP. Commercial versions with higher capacitance efficiency per kilovolt are also available, please refer to other NOVACAP data sheets.



➔ HIGH RELIABILITY RANGES, RATED TO 6 KV



SIZE	1515	1808	1812	1825	2020	2225	2520	3333
Min Cap	100	100	150	390	390	390	390	390
LENGTH L	.150 (3.81)	.180 (4.57)	.180 (4.57)	.180 (4.57)	.200 (5.08)	.220 (5.59)	.250 (6.35)	.330 (8.38)
WIDTH W	.150 (3.81)	.080 (2.03)	.125 (3.18)	.250 (6.35)	.200 (5.08)	.250 (6.35)	.200 (5.08)	.330 (8.38)
T MAX	.130 (3.30)	.080 (2.03)	.100 (2.54)	.140 (3.56)	.180 (4.57)	.150 (3.81)	.180 (4.57)	.250 (6.35)
MB	.040 (1.02)	.038 (.965)	.038 (.965)	.038 (.965)	.045 (1.14)	.045 (1.14)	.050 (1.27)	.050 (1.27)

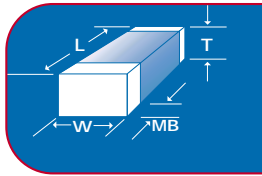
MAXIMUM CAPACITANCE 3 Digit Code: See How to Order

VOLTAGE	COG		X7R		COG		X7R		COG		X7R		COG		X7R	
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6
500V	472	683	272	333	562	563	123	224	123	124	153	274	183	184	473	474
600V	392	563	222	273	472	473	123	184	822	124	153	224	123	154	273	394
800V	392	473	222	183	472	393	103	124	682	104	123	184	103	154	183	394
1000V	332	333	182	123	392	273	103	823	682	683	123	124	103	104	183	274
2000V	222	392	102	152	222	332	682	123	472	103	103	183	682	153	123	563
3000V	561	122	221	471	471	102	152	392	122	332	102	562	222	822	562	273
4000V							102	222	821	182	681	272	152	392	392	153
5000V							471	102	391	102	561	152	561	222	182	822
6000V															102	562

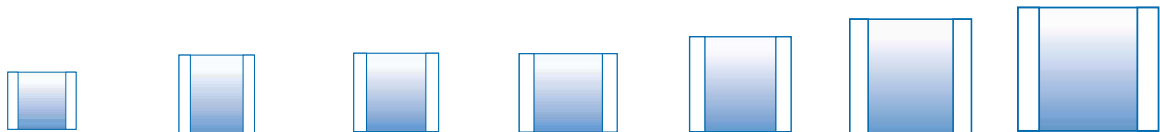
Dimensions are in inches, bracketed dimensions in millimeters. Tolerances are +/- 5% L & W, or .015 (0.38 mm), whichever is greater. MB dimensions are maximum. T Max. for chip sizes 1808, 1812, 1825 and 2225 are greater than standard EIA max. thickness for those sizes.



HIGH VOLTAGE MLC - HIGH RELIABILITY



➔ HIGH RELIABILITY RANGES, RATED TO 10KV



SIZE	3530	4040	4540	5440	5550	6560	7565
Min Cap	390	390	390	390	390	560	101
LENGTH L	.350 (8.89)	.400 (10.2)	.450 (11.4)	.540 (13.7)	.550 (11.4)	.650 (16.5)	.750 (19.0)
WIDTH W	.300 (7.62)	.400 (10.2)	.400 (10.2)	.400 (10.2)	.500 (12.7)	.600 (15.2)	.650 (16.5)
T MAX	.250 (6.35)	.300 (7.62)	.300 (7.62)	.300 (7.62)	.300 (7.62)	.300 (7.62)	.400 (10.2)
MB	.050 (1.27)	.060 (1.52)	.060 (1.52)	.060 (1.52)	.060 (1.52)	.060 (1.52)	.060 (1.52)

MAXIMUM CAPACITANCE

3 Digit Code: See How to Order

V
O
L
T
A
G
E

	COG	X7R	COG	X7R	COG	X7R	COG	X7R	COG	X7R	COG	X7R	COG	X7R
500V	473	394	393	684	683	824	823	105	124	125	154	185	224	275
1000V	183	274	333	474	393	564	473	684	563	824	104	125	124	185
2000V	123	683	223	104	273	124	333	124	393	184	683	334	823	474
3000V	682	333	123	393	153	563	183	823	223	104	393	184	473	224
4000V	472	183	822	273	103	333	123	393	153	563	223	104	393	154
5000V	222	822	332	183	392	223	472	223	562	393	123	473	153	823
6000V	122	472	182	123	222	123	332	153	392	223	682	333	103	563
7000V	821	332	152	822	182	822	222	103	272	153	562	223	822	393
8000V			152	562	152	682	182	822	272	123	392	153	562	333
9000V					152	562	182	682	222	103	332	123	472	273
10000V					122	392	152	472	222	822	272	103	392	223

Dimensions are in inches, bracketed dimensions in millimeters. Tolerances are +/- 5% L & W, or .015 (0.38 mm), whichever is greater. MB dimensions are maximum.



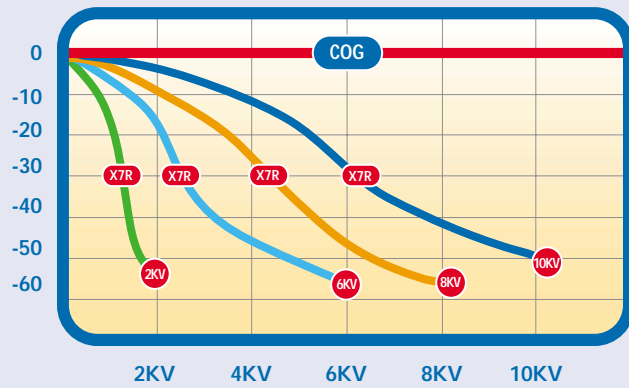
COG DIELECTRIC CHARACTERISTICS

OPERATING TEMPERATURE RANGE:	-55 C to 125 C
TEMPERATURE COEFFICIENT:	0 +/- 30 ppm/ C
DISSIPATION FACTOR:	.001 (0.1%) max @ 25 C
INSULATION RESISTANCE, 25 C	>100G or >1000 F
125 C	>10G or >100 F
DIELECTRIC WITHSTANDING VOLTAGE:	120% VDCW, or 750V*
*WHICHEVER IS GREATER	
AGING RATE:	0% per decade
TEST PARAMETERS:	1KHz, 1.0 +/- 0.2 VRMS, 25 C 1MHZ for Capacitance <100pF

X7R DIELECTRIC CHARACTERISTICS

OPERATING TEMPERATURE RANGE:	-55 C to 125 C
TEMPERATURE COEFFICIENT:	+/-15% ±C Max.
DISSIPATION FACTOR @ 25 C:	.025 (2.5%) max @ 25 C
INSULATION RESISTANCE, 25 C	>100G or >1000 F
125 C	>10G or >100 F
DIELECTRIC WITHSTANDING VOLTAGE:	120% VDCW, or 750V*
*WHICHEVER IS GREATER	
AGING RATE:	< 2.0% per decade
TEST PARAMETERS:	1KHz, 1.0 +/- 0.2 VRMS, 25 C

%±C TYPICAL VOLTAGE COEFFICIENT



Dielectric withstanding voltage testing requires immersion of the device in a dielectric fluid to preclude arcing over the chip surface, notably at voltages exceeding 1000 VDC. Conformal coating of chips is recommended in use to eliminate arcing.

HOW TO ORDER

4540	B	103	M	302	N	X	H	T	M
SIZE See Chart	DIELECTRIC N = COG B = X7R	CAPACITANCE Value in Picofarads Two significant figures, followed by number of zeros: 103 = 10,000 pF	TOLERANCE J = +/- 5 % K = +/- 10 % M = +/- 20 % Z = +80% -20% P = +100% -0%	VOLTAGE-VDCW Two significant figures, followed by number of zeros: 302 = 3000V	TERMINATION N = Nickel Barrier sizes 1515 to 4540 only P = Silver Palladium S = Silver	THICKNESS OPTION X = Non standard thickness. Specify in Mils if Non EIA thickness is required.	HIGH RELIABILITY TEST Specify Test	PACKING OPTION T = Reeled	MARKING OPTION M = Marked (See Marking Specifications)