INSTEC

NPO-COG DIELECTRIC
MONOLITHIC CERAMIC CAPACITORS

APPLICATION

Suited for precision circuits, requiring stable capacitor characteristics. No aging effects, low dielectric loss.

PERFORMANCE SPECIFICATIONS

Temperature Coefficient:
<30 ppm/°C, -55°C to 125°C

Dissipation Factor:
<0.1% @ 1MHz,25°C

Insulation Resistance:
1000ΩF or 100 GΩ, whichever is less @ rated voltage 25°C. At 125°C IR is 10% of 25°C value.

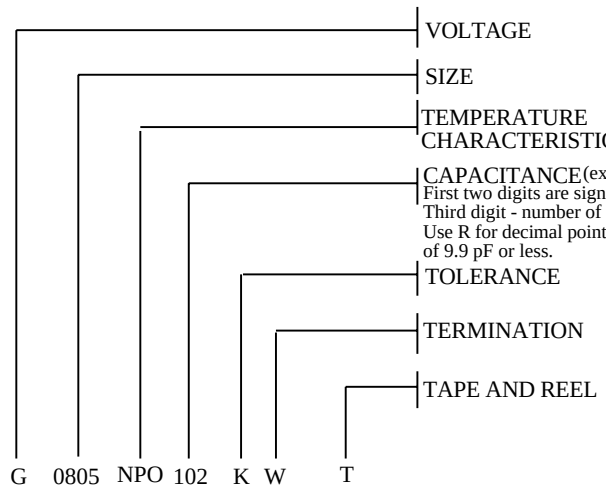
Dielectric Strength:
2.5 times rated voltage D.C.
1.5 times rated voltage for 500V devices.

Quality Factor:
>1000 @ MHz 25°C

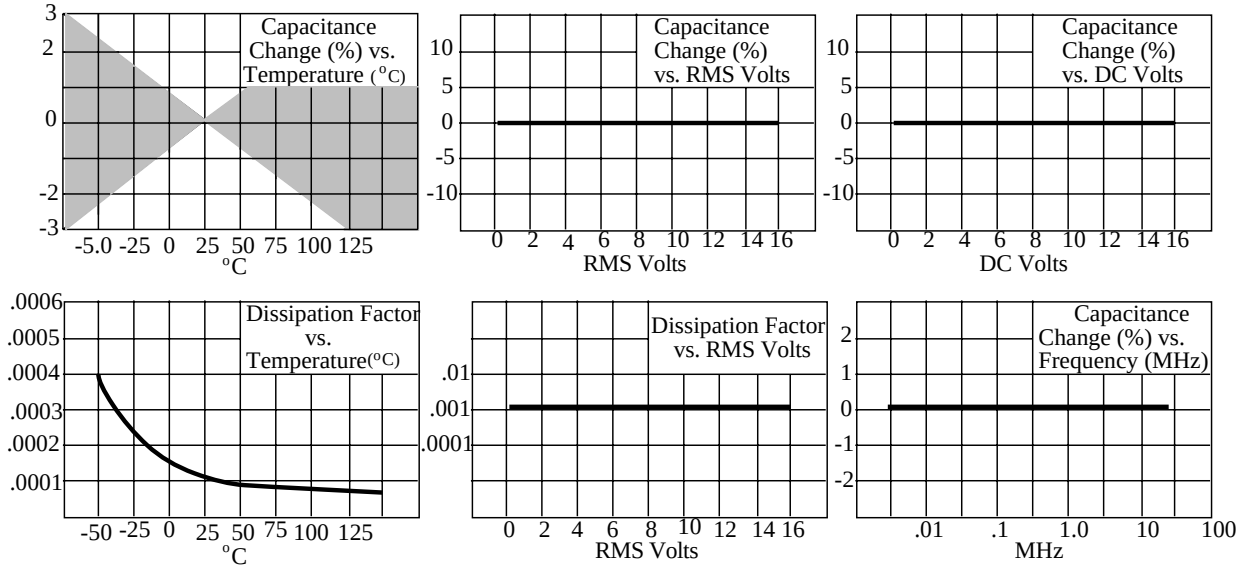
Test Parameters:
1 MHz ± 50 MHz 1.0 ± .25 Vrms, < 100 pF 25 °C
1 KHz ± 50 Hz, 1.0 ± .25 Vrms, < 100 pF 25 °C

Capacitance Tolerances Available
F, G, J, K, M,
Meets or exceeds applicable portions of EIA 198 B.

ORDERING TERMINOLOGY



VOLTAGE		TEMPERATURE CHARACTERISTIC	TOLERANCE		TERMINATION
G	50 VOLTS	NPO	F	± 1 %	W: Nickel Barrier
B	100 VOLTS		G	± 2%	P: Pt/Ag Termination
R	200 VOLTS	(COG)	J	± 5.0 %	S: Ag Termination
S	500 VOLTS		K	± 10.0%	
			M	± 20.0%	



These typical curves are for 50 volt parts

NPO-COG DIELECTRIC

	0603	0805	1206	1210	1808	1812	1825	2220	2225	
*** L**	.063(1.60)	.080(2.03)	.126(3.20)	.125(3.18)	.180(4.57)	.175(4.45)	1.85(4.70)	.225(5.70)	.225(5.70)	Inch (mm)
***W**	.032 (0.80)	.050 (1.27)	.063 (1.60)	.100 (2.54)	.080 (2.03)	.125 (3.17)	.250(6.35)	.177 (4.50)	.250 (6.35)	Inch (mm)
T	.040 (1.02)	.050 (1.27)	.050 (1.27)	.075 (.190)	.075 (.190)	.075 (1.90)	.075 (1.90)	.075 (1.90)	.075 (1.90)	Inch (mm)
A	.013 (0.32)	.020 (.508)	.020 (.508)	.020 (.508)	.020 (.508)	.020 (.508)	.020 (.508)	.020 (.508)	.020 (.508)	Inch (mm)
Capacitance pF	50V 100V 200V	50V 100V 200V 500V	50V 100V 200V 500V	50V 100V 200V 500V	50V 100V 200V 500V	50V 100V 200V 500V	50V 100V 200V 500V	50V 100V 200V 500V	50V 100V 200V 500V	EIA Capacitance CODE
10										100
12										120
15										150
18										180
27										270
33										330
39										390
47										470
56										560
68										680
82										820
100										101
120										121
180										181
220										221
270										271
390										391
470										471
560										561
680										681
820										821
1000										102
1200										122
1500										152
1800										182
2200										222
2700										272
3300										332
3900										392
4700										472
5600										562
6800										682
8200										822
.010µF										103
.012µF										123
.015µF										153
.018µF										183
.022µF										223
.027µF										273
.033µF										333
.039µF										393
.047µF										473
.068µF										683
.082µF										823
.100µF										104

* TOLERANCE ± .010 OR 7% WHICHEVER IS GREATER

INSTEC

X7R BX DIELECTRIC
MONOLITHIC CERAMIC CAPACITORS

APPLICATION
Suited for By-Pass and Coupling Application, Filtering, D.C. Blocking and transient Suppression.

PERFORMANCE SPECIFICATIONS

Temperature Coefficient:
BX; ±15% ΔC, -55°C to 125°C
+15% - 25% ΔC maximum
-55°C to 125°C at WVdc

Dissipation Factor: <2.5% @ 1 KHz, 25 °C

Insulation Resistance:
1000ΩF or 100 GΩ, whichever is less @ rated voltage 25°C. At 125°C IR is 10% of 25°C value.

Dielectric Strength:
2.5 times rated voltage D.C.
1.5 times rated voltage for 500V devices.

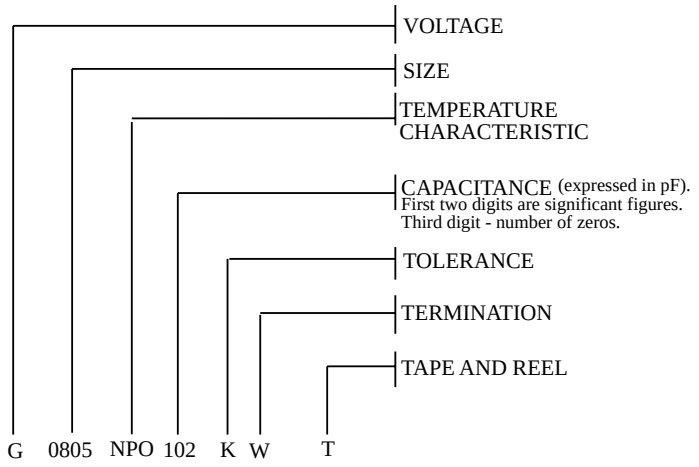
Aging:
Approximately 1.25% for BX per decade hour, and 2.5% maximum for X7R.

Test Parameters:
1 KHz ± 50 MHz 1.0 ± .25 Vrms 25 °C

Capacitance Tolerances Available
J, K, M, V and Z

Meets or exceeds applicable portions of EIA 198 B.

ORDERING TERMINOLOGY

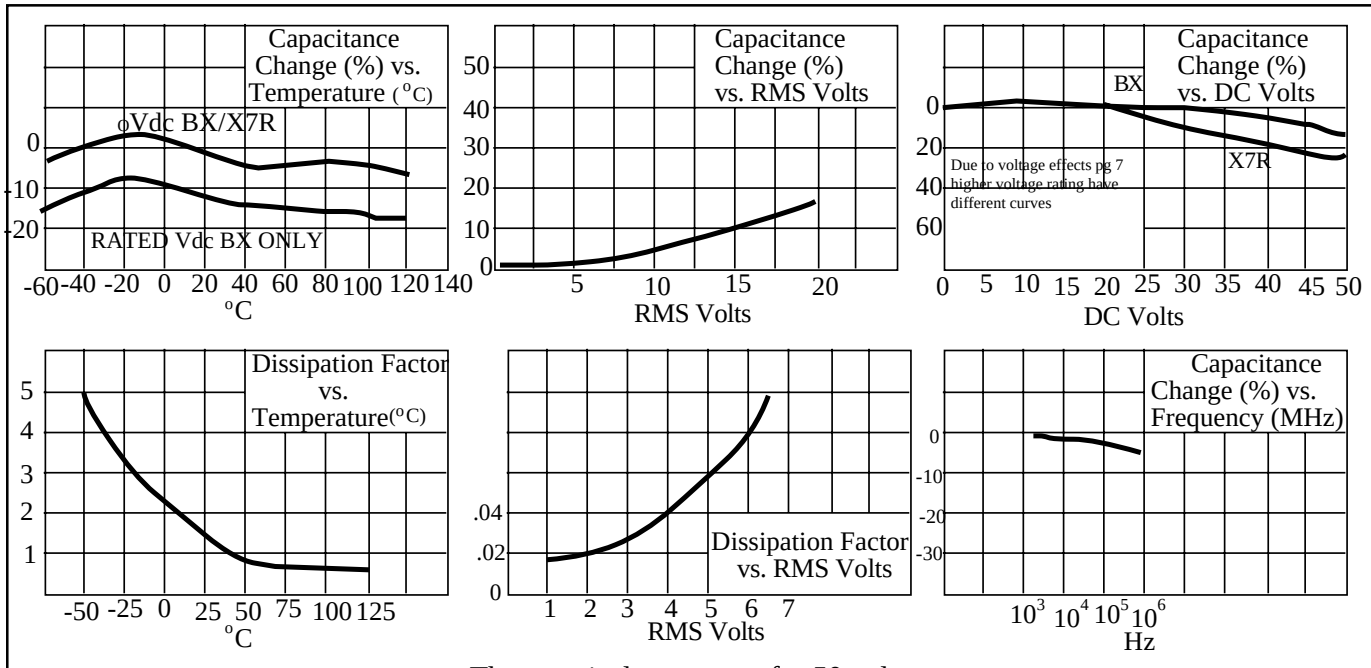


VOLTAGE	
G	50 VOLTS
B	100 VOLTS
R	200 VOLTS
S	500 VOLTS

TEMPERATURE CHARACTERISTIC
X7R
BX

TOLERANCE	
J	± 5.0 %
K	± 10.0%
M	± 20.0%
Z	+80%/-20%

TERMINATION
W: Nickel Barrier
P: Pt/Ag Termination
S: Ag Termination



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X7R/BX DIELECTRIC

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***W**	.032 (0.80)	.050 (1.27)	.063 (1.60)	.100 (2.54)	.080 (2.03)	.125 (3.17)	.125 (3.17)	.177 (4.50)	.250 (6.35)	Inch (mm)
T	.040 (1.02)	.050 (1.27)	.050 (1.27)	.075 (.190)	.075 (.190)	.075 (1.90)	.075 (1.90)	.075 (1.90)	.075 (1.90)	Inch (mm)
A	.013 (0.32)	.020 (.508)	.020 (.508)	.020 (.508)	.020 (.508)	.020 (.508)	.020 (.508)	.020 (.508)	.020 (.508)	Inch (mm)

Capacitance pF	50V	100V	200V	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	50V	100V	200V	500V	EIA Capacitance CODE
220																																221
270																																271
390																																391
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.150µF																																154
.180µF																																184
.220µF																																224
.270µF																																274
.330µF																																334
.390µF																																394
.470µF																																474
.560µF																																564
.680µF																																684
.820µF																																824
1 .00µF																																105
1.20µF																																125
1.50µF																																155
1.80µF																																185
2.20µF																																225

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