

X2Y® FILTER & DECOUPLING CAPACITORS



X2Y® filter capacitors employ a unique, patented low inductance design featuring two balanced capacitors that are immune to temperature, voltage and aging performance differences.

These components offer superior decoupling and EMI filtering performance, virtually eliminate parasitics, and can replace multiple capacitors and inductors saving board space and reducing assembly costs.

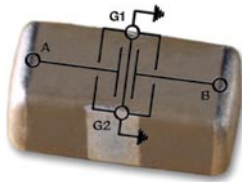
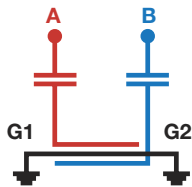
ADVANTAGES

- Superior noise suppression
- Differential and common mode attenuation
- Replace multiple components with one device
- Matched capacitance line to ground, both lines
- Low inductance due to cancellation effect

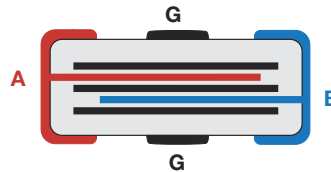
APPLICATIONS

- FPGA / ASIC Decoupling
- μ -Processor Decoupling
- Broadband EMI Filtering
- DC Motor Noise Suppression
- Cellular Handsets

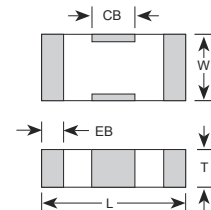
Equivalent Circuits



Cross-sectional View



Dimensional View



AVAILABLE CAPACITANCE & VOLTAGE RANGES

CHIP SIZE		DIELECTRIC	VOLTAGE (WVDC)	C1 CAPACITANCE RANGE		JOHANSON PART NUMBER
EIA	JDI			VALUE	CODE	
0603	X14	NPO	50	22 pF - 220 pF	220 - 221	500X14N***MV4*
		X7R	50	470 pF - .018 μ F	471 - 183	500X14W***MV4*
0805	X15	NPO	50	22 pF - 470 pF	220 - 471	500X15N***MV4*
		X7R	50	1000 pF - .047 μ F	102 - 473	500X15W***MV4*
1206	X18	NPO	50	1000 pF	102	500X18N***MV4*
		X7R	50	.022 μ F - 0.10 μ F	223 - 104	500X18W***MV4*
1410	X44	X7R	50	0.22 μ F - 0.68 μ F	224 - 684	500X44W***MV4*
1812	X43	X7R	50	0.22 μ F - 0.47 μ F	224 - 474	500X43W***MV4*

C1 = A or B to ground, A to B capacitance = 1/2 of C1.

Rated voltage if for A or B to ground. A to B rating is 2 X Vrated

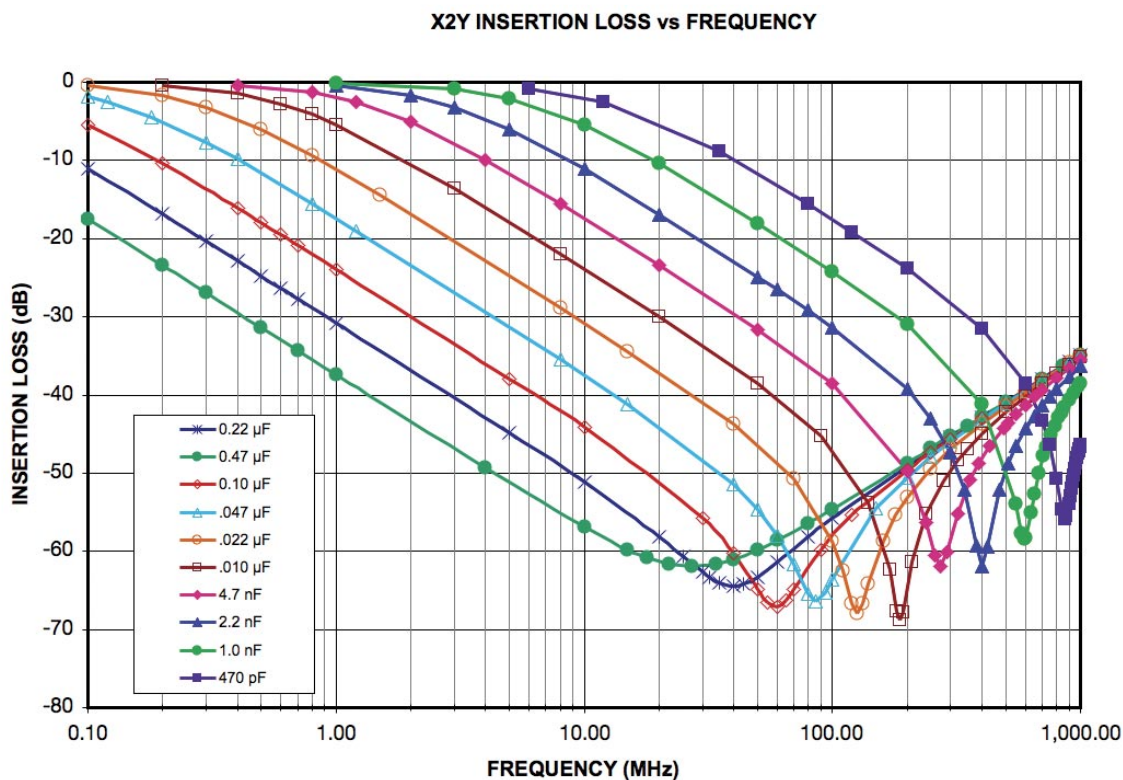
Contact the factory for other voltage ratings and capacitance values.

X2Y filter capacitor meet JDI standard NPO & X7R dielectric specifications listed on page 20.

X2Y® technology patents and registered trademark under license from X2Y ATTENUATORS, LLC



X2Y® EMI FILTER CAPACITORS



MECHANICAL CHARACTERISTICS

	X14 / 0603		X15 / 0805		X18 / 1206		X43 / 1812		X44 / 1410	
	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters	Inches	Millimeters
L	.064 ± .005	1.63 ± 0.13	.080 ± .008	2.03 ± 0.20	0.124 ± .010	3.15 ± 0.25	0.174 ± .010	4.42 ± 0.25	0.140 ± .010	3.56 ± 0.25
W	.035 ± .004	0.89 ± 0.10	.050 ± .008	1.27 ± 0.20	.063 ± .010	1.60 ± 0.25	0.125 ± .010	3.18 ± 0.25	.098 ± .010	2.49 ± 0.25
T	.026 max	0.66 max	.040 max	1.02 max	.050 max	1.27 max	.090 max	2.29 max	.070 max	1.78 max
EB	.009 ± .003	0.23 ± .08	.009 ± .003	0.23 ± .08	.009 ± .004	0.23 ± 0.10	.009 ± .004	0.23 ± 0.10	.009 ± .004	0.23 ± 0.10
CB	.018 ± .003	0.46 ± .08	.020 ± .004	0.51 ± 0.10	.040 ± .005	1.02 ± 0.13	.045 ± .005	1.14 ± 0.13	.045 ± .005	1.14 ± 0.13

HOW TO ORDER X2Y® EMI FILTER CAPACITORS

500	X18	W	473	M	V	4	E
VOLTAGE (C1) 500 = 50 V 101 = 100 V	CASE SIZE X14 = 0603 X15 = 0805 X18 = 1206 X43 = 1812 X44 = 1410	DIELECTRIC N = NPO W = X7R	CAPACITANCE 1st two digits are significant; third digit denotes number of zeros. 474 = 0.47 µF 105 = 1.00 µF	TOLERANCE M = ± 20%	TERMINATION V = Ni barrier w/ 100% Sn Plating	MARKING 4 = Unmarked	TAPE MODIFIER Code Tape Reel E Embossed 7" U Embossed 13" T Paper 7" R Paper 13" Tape specs. per EIA RS481

P/N written: 500X18W473MV4E

