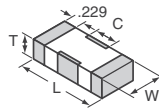




X2Y® Filter and Decoupling Capacitors

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.

- Applications:**
- FPGA/ASIC/μ-P Decoupling
 - DDR Memory Decoupling
 - Amplifier Filter and Decoupling
 - High Speed Data Filtering
 - Cellular Handsets



Physical Characteristics — Dimensions in mm			
Series	L	W	C
0402	1.143 ±0.076	0.610 ±0.076	0.305 ±0.076
0603	1.626 ±0.127	0.889 ±0.127	0.457 ±0.102
0805	2.032 ±0.203	1.270 ±0.203	0.559 ±0.127
1206	3.150 ±0.254	1.600 ±0.254	1.016 ±0.127
1210	3.175 ±0.254	2.489 ±0.254	1.143 ±0.127
1410	3.556 ±0.254	2.490 ±0.254	1.143 ±0.127
1812	4.420 ±0.254	3.175 ±0.254	1.143 ±0.127

WV DC	Cap.	Cap. Tol.	Dim. T (mm)	Digi-Key Part No.	Cut Tape Pricing 10 100	Tape and Reel Qty. Pricing	Johanson Dielectrics Part No.
0402 Series — NPO Type							
50	1.8pF	±0.5pF	0.508	709-1209-1-ND▲	12.34 72.94	4,000 201.99/M	500X07N18RDV4T
50	5.6pF	±0.25pF	0.508	709-1210-1-ND▲	12.34 72.94	4,000 201.99/M	500X07N5R6DV4T
50	10pF	±20%	0.508	709-1211-1-ND▲	8.02 47.41	4,000 131.30/M	500X07N100MV4T
50	22pF	±20%	0.508	709-1212-1-ND▲	8.02 47.41	4,000 131.30/M	500X07N220MV4T
50	47pF	±20%	0.508	709-1213-1-ND▲	8.89 52.52	4,000 145.44/M	500X07N470MV4T
50	100pF	±20%	0.508	709-1214-1-ND▲	9.75 57.62	4,000 159.57/M	500X07N101MV4T
0402 Series — X7R Type							
50	470pF	±20%	0.508	709-1215-1-ND▲	6.42 37.93	4,000 105.04/M	500X07W471MV4T
50	1,000pF	±20%	0.508	709-1216-1-ND▲	6.42 37.93	4,000 105.04/M	500X07W102MV4T
50	1,500pF	±20%	0.508	709-1217-1-ND▲	6.53 38.59	4,000 106.86/M	500X07W152MV4T
50	2,200pF	±20%	0.508	709-1218-1-ND▲	6.80 40.20	4,000 111.30/M	500X07W222MV4T
50	4,700pF	±20%	0.508	709-1219-1-ND▲	7.17 42.38	4,000 117.36/M	500X07W472MV4T
16	10,000pF	±20%	0.508	709-1220-1-ND▲	7.93 46.91	4,000 129.88/M	160X07W103MV4T
0603 Series — NPO Type							
50	5.6pF	±20%	0.660	709-1000-1-ND	5.55 32.82	4,000 90.90/M	500X14N5R6DV4T
50	10pF	±20%	0.660	709-1001-1-ND	5.55 32.82	4,000 90.90/M	500X14N100MV4T
50	22pF	±20%	0.660	709-1002-1-ND	5.55 32.82	4,000 90.90/M	500X14N220MV4T
50	47pF	±20%	0.660	709-1003-1-ND	5.55 32.82	4,000 90.90/M	500X14N470MV4T
50	100pF	±20%	0.660	709-1004-1-ND	5.55 32.82	4,000 90.90/M	500X14N101MV4T
100	1.0pF	±0.5pF	0.660	709-1199-1-ND‡	5.67 33.49	4,000 92.72/M	101X14N18RDV4T
100	10pF	±20%	0.660	709-1198-1-ND‡	5.78 34.14	4,000 94.53/M	101X14N100MV4T
100	22pF	±20%	0.660	709-1200-1-ND‡	5.78 34.14	4,000 94.53/M	101X14N220MV4T
100	33pF	±20%	0.660	709-1201-1-ND‡	5.78 34.14	4,000 94.53/M	101X14N330MV4T
100	47pF	±20%	0.660	709-1202-1-ND‡	6.05 35.74	4,000 98.98/M	101X14N470MV4T
100	5.6pF	±0.5pF	0.660	709-1203-1-ND‡	5.67 33.49	4,000 92.72/M	101X14N5R6DV4T
NEW! 0603 Series — X5R Type NEW!							
10	.33pF	±20%	0.660	709-1332-1-ND§	10.86 64.19	4,000 177.75/M	100X14X334MV4T
10	.47pF	±20%	0.660	709-1333-1-ND§	11.36 67.11	4,000 185.83/M	100X14X474MV4T
10	1.0pF	±20%	0.660	709-1334-1-ND§	12.96 76.59	4,000 212.09/M	100X14X105MV4T
16	.22pF	±20%	0.660	709-1331-1-ND§	10.37 61.27	4,000 169.67/M	160X14X224MV4T
0603 Series — X7R Type							
6.3	.1pF	±20%	0.660	709-1009-1-ND	8.29 49.02	4,000 135.74/M	6R3X14W104MV4T
6.3	.22pF	±20%	0.660	709-1104-1-ND	7.78 45.95	4,000 127.26/M	6R3X14W224MV4T
10	.1pF	±20%	0.660	709-1101-1-ND§	8.29 49.02	4,000 135.74/M	100X14W104MV4T
16	47,000pF	±20%	0.660	709-1088-1-ND§	9.24 54.55	4,000 151.05/M	160X14W471MV4T
25	22,000pF	±20%	0.660	709-1087-1-ND§	7.38 43.63	4,000 120.83/M	250X14W223MV4T
50	470pF	±20%	0.660	709-1085-1-ND	5.35 31.63	4,000 87.61/M	500X14W471MV4T
50	1,000pF	±20%	0.660	709-1005-1-ND	4.94 29.18	4,000 80.80/M	500X14W102MV4T
50	1,500pF	±20%	0.660	709-1006-1-ND	5.35 31.66	4,000 87.67/M	500X14W152MV4T
50	2,200pF	±20%	0.660	709-1086-1-ND	5.72 33.81	4,000 93.65/M	500X14W222MV4T
50	4,700pF	±20%	0.660	709-1007-1-ND	5.53 32.68	4,000 90.49/M	500X14W472MV4T
50	10,000pF	±20%	0.660	709-1008-1-ND‡	6.61 39.03	4,000 108.07/M	500X14W103MV4T
100	1,000pF	±20%	0.660	709-1204-1-ND‡§	5.67 33.49	4,000 92.72/M	101X14W102MV4T
100	1,500pF	±20%	0.660	709-1205-1-ND‡§	5.67 33.49	4,000 92.72/M	101X14W152MV4T
100	220pF	±20%	0.660	709-1206-1-ND‡	5.43 32.09	4,000 88.88/M	101X14W221MV4T
100	2,200pF	±20%	0.660	709-1207-1-ND‡	5.85 34.57	4,000 95.75/M	101X14W222MV4T
100	470pF	±20%	0.660	709-1208-1-ND‡	5.43 32.09	4,000 88.88/M	101X14W471MV4T
100	4,700pF	±20%	0.660	709-1105-1-ND‡§	5.53 32.68	4,000 90.49/M	101X14W472MV4T

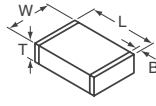
WV DC	Cap.	Cap. Tol.	Dim. T (mm)	Digi-Key Part No.	Cut Tape Pricing 10 100	Tape and Reel Qty. Pricing	Johanson Dielectrics Part No.
NEW! 0805 Series — NPO Type NEW!							
100	22pF	±20%	1.02	709-1336-1-ND◊	7.37 43.55	4,000 120.59/M	101X15N220MV4E
100	47pF	±20%	1.02	709-1337-1-ND◊	7.80 46.10	4,000 127.66/M	101X15N470MV4E
100	100pF	±20%	1.02	709-1338-1-ND◊	8.38 49.53	4,000 137.15/M	101X15N101MV4E
0805 Series — X7R Type							
10	.18pF	±20%	1.016	709-1106-1-ND◊	14.20 83.88	4,000 232.29/M	100X15W184MV4E
25	.1pF	±20%	1.02	709-1330-1-ND◊	14.81 87.53	4,000 242.39/M	250X15W104MV4E
50	1,000pF	±20%	1.016	709-1010-1-ND	10.39 61.42	4,000 170.08/M	500X15W102MV4E
50	10,000pF	±20%	1.016	709-1011-1-ND	6.79 40.12	4,000 111.10/M	500X15W103MV4E
50	47,000pF	±20%	1.016	709-1012-1-ND◊	23.33 137.86	4,000 381.76/M	500X15W473MV4E
50	.015pF	±20%	1.02	709-1340-1-ND◊	10.50 62.08	4,000 171.90/M	500X15W153MV4E
50	.022pF	±20%	1.02	709-1341-1-ND◊	13.33 78.78	4,000 218.15/M	500X15W223MV4E
100	1,000pF	±20%	1.02	709-1335-1-ND◊	8.64 51.06	4,000 141.40/M	101X15W102MV4E
100	2,200pF	±20%	1.02	709-1339-1-ND◊	10.39 61.42	4,000 170.08/M	101X15W222MV4E
100	4,700pF	±20%	1.02	709-1322-1-ND◊	8.39 49.60	4,000 137.36/M	101X15W472MV4E
100	10,000pF	±20%	1.02	709-1325-1-ND◊	8.76 51.79	4,000 143.42/M	101X15W103MV4E
1206 Series — NPO Type							
50	1,000pF	±20%	1.270	709-1107-1-ND	13.87 81.93	3,000 226.88/M	500X18N102MV4E
100	1,000pF	±20%	1.270	709-1321-1-ND	14.69 86.80	3,000 240.37/M	101X18N102MV4E
1206 Series — X7R Type							
10	.47pF	±20%	1.270	709-1103-1-ND	15.30 90.39	3,000 250.33/M	100X18W474MV4E
16	.22pF	±20%	1.270	709-1102-1-ND	12.77 75.44	3,000 208.92/M	160X18W224MV4E
50	.1pF	±20%	1.270	709-1013-1-ND	23.33 137.86	3,000 381.76/M	500X18W104MV4E
100	10,000pF	±20%	1.270	709-1323-1-ND	13.58 80.23	3,000 222.19/M	101X18W103MV4E
100	.022pF	±20%	1.270	709-1327-1-ND	13.58 80.23	3,000 222.19/M	101X18W223MV4E
100	.047pF	±20%	1.270	709-1329-1-ND	15.31 90.45	3,000 250.47/M	101X18W473MV4E
100	.1pF	±20%	1.270	709-1342-1-ND	14.81 87.53	3,000 242.39/M	101X18W104MV4E
1210 Series — X7R Type							
16	1.0pF	±20%	1.778	709-1108-1-ND	15.43 91.18	2,000 252.49/M	160X41W105MV4E
100	.22pF	±20%	1.778	709-1014-1-ND	35.92 212.26	2,000 587.79/M	101X41W224MV4E
100	.33pF	±20%	1.778	709-1343-1-ND	30.86 182.35	2,000 504.97/M	101X41W334MV4E
500	10,000pF	±20%	1.778	709-1324-1-ND	30.00 177.25	2,000 490.84/M	501X41W103MV4E
1410 Series — X7R Type							
50	.40pF	±20%	1.778	709-1017-1-ND	30.86 182.35	2,000 504.97/M	500X44W404MV4E
100	.40pF	±20%	1.778	709-1244-1-ND	41.97 248.00	2,000 686.76/M	101X44W404MV4E
100	.40pF	±20%	1.778	709-1245-1-ND	41.97 248.00	2,000 686.76/M	101X44W404MV4E
500	.015pF	±20%	1.778	709-1326-1-ND	33.33 196.94	2,000 545.37/M	501X44W153MF4E
1812 Series — X7R Type							
50	.47pF	±20%	2.286	709-1016-1-ND	49.38 291.76	1,000 807.96	500X43W474MV4E
100	.47pF	±20%	2.286	709-1242-1-ND	49.38 291.76	1,000 807.96	101X43W474MF4E
100	.47pF	±20%	2.286	709-1243-1-ND	49.38 291.76	1,000 807.96	101X43W474MF4E
500	.039pF	±20%	2.29	709-1328-1-ND	42.09 248.73	1,000 688.78	501X43W393MF4E

NEW! † For Tape and Reel part number, change -1-ND to -2-ND.

- Kits**
- ▲ 709-1196-ND (S-X07CBK) X2Y 0402 Series Cellular Filter Kit\$89.75
 - ‡ 709-1197-ND (S-X14CBK) X2Y 0603 Series Cellular Buzzer Kill Filter Kit\$89.75
 - § 709-1344-ND (S-X14-PBP) NEW! X2Y 0603 Series Power Bypass Kit\$89.75
 - ◊ 709-1345-ND (S-X15-EMI) NEW! X2Y 0805 Series EMI Filter Kit\$89.75
 - Δ 709-1346-ND (S-X2Y-MTR) NEW! X2Y JDI DC Motor Filter Kit\$89.75

MLCC Capacitors General Purpose, High Voltage and TANCERAM®

- High Voltage Applications:**
- Analog and Digital Modems • Lighting Ballast Circuits • Voltage Multipliers • DC-DC Converters • LAN/WAN Interface • Back-lighting Inverters
- TANCERAM Applications:**
- Switching Power Supply Smoothing (Input/Output) • DC/DC Converter Smoothing (Input/Output) • Backlighting Inverters • General Digital Circuits



Physical Characteristics — Dimensions in mm			
Series	L	W	B
0402	1.02 ±.10	0.51 ±.10	0.20 ±.10
0603	1.60 ±.20	0.81 ±.20	0.25 ±.13
0805	2.03 ±.25	1.27 ±.25	0.51 ±.25
1206	3.17 ±.25	1.57 ±.25	0.51 ±.25
1210	3.18 ±.25	2.41 ±.25	0.51 ±.25
1808	4.57 ±.25	2.03 ±.25	0.51 ±.25
1812	4.57 ±.25	3.17 ±.25	0.64 ±.38
1825	4.57 ±.25	6.35 ±.25	0.64 ±.38
2225	5.72 ±.25	6.48 ±.38	0.64 ±.38

WV DC	Cap.	Cap. Tol.	Dim. T (mm)	Digi-Key Part No.	Cut Tape Pricing 10 100	Tape and Reel Qty. Pricing	Johanson Dielectrics Part No.
High Voltage							
0805 Series — NPO Type							
500	100pF	±5%	1.40	709-1271-1-ND	1.56 9.19	4,000 25.45/M	501R15N101JV4T
500	100pF	±10%	1.27	709-1019-1-ND	1.56 9.19	4,000 25.45/M	501R15N101KV4T
1,000	47pF	±10%	1.40	709-1287-1-ND	5.07 29.98	3,000 83.02/M	102R15N470KV4E
0805 Series — X7R Type							
250	22,000pF	±10%	1.27	709-1018-1-ND	2.18 12.84	3,000 35.55/M	251R15W223KV4E
500	1,000pF	±10%	1.27	709-1020-1-ND	1.60 9.48	3,000 26.26/M	501R15W102KV4E
500	10,000pF	±10%	1.27	709-1021-1-ND	2.84 16.78	3,000 46.46/M	501R15W103KV4E
1,000	1,000pF						