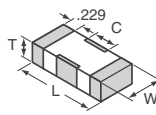




X2Y® Filter and Decoupling Capacitors



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.



Physical Characteristics — Dimensions in mm			
Series	L	W	C
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

Applications:

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

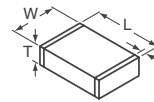
Size Code	Type	WV DC	Capacitance	Capacitance Tolerance	Dim. T (mm)	Digi-Key Part No.	Cut Tape Pricing			Digi-Key Part No.	Tape and Reel		Johanson Dielectrics Part No.		
							10	100	500		Qty.	Pricing			
0603	NP0	50	5.6pF	±20%	0.660	709-1000-1-ND	4.95	29.25	84.38	709-1000-2-ND	4,000	81.00/M	500X14N5R6MV4T		
		50	10pF			709-1001-1-ND	4.95	29.25	84.38	709-1001-2-ND	4,000	81.00/M	500X14N100MV4T		
		50	22pF			709-1002-1-ND	4.95	29.25	84.38	709-1002-2-ND	4,000	81.00/M	500X14N220MV4T		
		50	47pF			709-1003-1-ND	4.95	29.25	84.38	709-1003-2-ND	4,000	81.00/M	500X14N470MV4T		
		50	100pF			709-1004-1-ND	4.95	29.25	84.38	709-1004-2-ND	4,000	81.00/M	500X14N101MV4T		
	X7R	6.3	.1µF	±20%	0.660	709-1009-1-ND	7.39	43.68	126.00	709-1009-2-ND	4,000	120.96/M	6R3X14W104MV4T		
		6.3	.22µF			709-1104-1-ND	6.93	40.95	118.13	709-1104-2-ND	4,000	113.40/M	6R3X14W224MV4T		
		10	.1µF			709-1101-1-ND	7.39	43.68	126.00	709-1101-2-ND	4,000	120.96/M	100X14W104MV4T		
		16	47,000pF			709-1088-1-ND	8.23	48.61	140.21	709-1088-2-ND	4,000	134.61/M	160X14W471MV4T		
		25	22,000pF			709-1087-1-ND	6.58	38.88	112.16	709-1087-2-ND	4,000	107.68/M	250X14W223MV4T		
X7R	50	470pF	±20%	0.660	709-1085-1-ND	4.77	28.19	81.32	709-1085-2-ND	4,000	78.07/M	500X14W471MV4T			
	50	1,000pF			709-1005-1-ND	4.40	26.00	75.00	709-1005-2-ND	4,000	72.00/M	500X14W102MV4T			
	50	1,500pF			709-1006-1-ND	4.77	28.21	81.38	709-1006-2-ND	4,000	78.12/M	500X14W152MV4T			
	50	2,200pF			709-1086-1-ND	5.10	30.13	86.93	709-1086-2-ND	4,000	83.45/M	500X14W222MV4T			
	50	4,700pF			709-1007-1-ND	4.93	29.12	84.00	709-1007-2-ND	4,000	80.64/M	500X14W472MV4T			
0805	X7R	50	10,000pF	±20%	1.016	709-1008-1-ND	5.89	34.78	100.31	709-1008-2-ND	4,000	96.30/M	500X14W103MV4T		
		50	4,700pF			709-1105-1-ND	4.93	29.12	84.00	709-1105-2-ND	4,000	80.64/M	101X14W472MV4T		
		10	.18µF			709-1106-1-ND	12.65	74.75	215.63	709-1106-2-ND	4,000	207.00/M	100X15W184MV4E		
		50	1,000pF			709-1010-1-ND	9.26	54.73	157.88	709-1010-2-ND	4,000	151.56/M	500X15W102MV4T		
		50	10,000pF			709-1011-1-ND	6.05	35.75	103.13	709-1011-2-ND	4,000	99.00/M	500X15W103MV4E		
1206	X7R	50	47,000pF	±20%	1.778	709-1012-1-ND	20.79	122.85	354.38	709-1012-2-ND	4,000	340.20/M	500X15W473MV4E		
		50	1000pF			±20%	1.270	709-1107-1-ND	12.36	73.01	210.60	709-1107-2-ND	3,000	202.18/M	500X18N102MV4E
		10	.47µF			709-1103-1-ND	13.63	80.55	232.37	709-1103-2-ND	3,000	223.08/M	100X18W474MV4E		
		16	.22µF			709-1102-1-ND	11.38	67.23	193.93	709-1102-2-ND	3,000	186.18/M	160X18W224MV4E		
		50	.1µF			709-1013-1-ND	20.79	122.85	354.38	709-1013-2-ND	3,000	340.20/M	500X18W104MV4E		
1210	X7R	16	1.0µF	±20%	1.778	709-1108-1-ND	13.75	81.25	234.38	709-1108-2-ND	2,000	225.00/M	160X41W105MV4E		
1410	X7R	50	.40µF	±20%	1.778	709-1017-1-ND	27.50	162.50	468.75	709-1017-2-ND	2,000	450.00/M	500X44W404MV4E		
1812	X7R	50	.47µF	±20%	2.286	709-1016-1-ND	44.00	260.00	750.00	709-1016-2-ND	1,000	720.00	500X43W474MV4E		

F

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
 - Backlighting 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

Size Code	Type	WV DC	Capacitance	Capacitance Tolerance	Dim. T (mm)	Digi-Key Part No.	Cut Tape Pricing			Digi-Key Part No.	Tape and Reel		Johanson Dielectrics Part No.
							10	100	500		Qty.	Pricing	
High Voltage													
0805	NP0	500	100pF	±10%	1.27	709-1019-1-ND	1.39	8.19	23.63	709-1019-2-ND	4,000	22.68/M	501R15N101KV4T
		250	22,000pF	±10%	1.27	709-1018-1-ND†	1.94	11.44	33.00	709-1018-2-ND†	3,000	32.00/M	251R15W223KV4E
	X7R	500	1,000pF	±10%	1.27	709-1020-1-ND	1.43	8.45	24.38	709-1020-2-ND	3,000	23.00/M	501R15W102KV4E
		500	10,000pF	±10%	1.27	709-1021-1-ND	2.53	14.95	43.13	709-1021-2-ND	3,000	41.40/M	501R15W103KV4E
		500	100pF	±10%	1.27	709-1022-1-ND	2.49	14.69	42.38	709-1022-2-ND	3,000	40.68/M	501R18N101JV4E
1206	NP0	500	220pF	±5%	1.27	709-1023-1-ND	2.35	13.91	40.13	709-1023-2-ND	3,000	38.52/M	501R18N221JV4E
		500	470pF	±5%	1.27	709-1024-1-ND	2.53	14.95	43.13	709-1024-2-ND	3,000	41.00/M	501R18N471JV4E
		2,000	100pF	±5%	1.27	709-1033-1-ND	3.74	22.10	63.75	709-1033-2-ND	3,000	61.20/M	202R18N101JV4E
		2,000	220pF	±5%	1.27	709-1034-1-ND	3.19	18.85	54.38	709-1034-2-ND	3,000	52.20/M	202R18N221JV4E
		500	1,000pF	±10%	1.27	709-1025-1-ND	2.27	13.39	38.63	709-1025-2-ND	3,000	37.08/M	501R18W102KV4E
	X7R	500	4,700pF	±10%	1.27	709-1026-1-ND	3.08	18.20	52.50	—	—	—	501R18W472KV4E
		500	10,000pF	±10%	1.27	709-1027-1-ND	2.53	14.95	43.13	709-1027-2-ND	3,000	41.40/M	501R18W103KV4E
		500	22,000pF	±10%	1.27	709-1028-1-ND	3.08	18.20	52.50	709-1028-2-ND	2,000	50.40/M	501R18W223KV4E
		1,000	1,000pF	±10%	1.27	709-1029-1-ND	2.16	12.74	36.75	709-1029-2-ND	3,000	35.28/M	102R18W102KV4E
		1,000	4,700pF	±10%	1.27	709-1031-1-ND	3.34	19.76	57.00	709-1031-2-ND	3,000	54.72/M	102R18W472KV4E
1210	NP0	2,000	470pF	±10%	1.27	709-1035-1-ND	2.22	13.13	37.88	709-1035-2-ND	3,000	36.36/M	202R18W471KV4E
		2,000	1,000pF	±10%	1.27	709-1036-1-ND	2.76	16.32	47.06	709-1036-2-ND	3,000	45.18/M	202R18W102KV4E
		1,000	680pF	±10%	1.65	709-1038-1-ND	8.25	48.75	140.63	709-1038-2-ND	2,000	135.00/M	102S41N681KV4E
		500	47,000pF	±10%	1.65	709-1037-1-ND	9.59	56.68	163.50	709-1037-2-ND	2,000	156.96/M	501S41W473KV4E
		1,000	10,000pF	±10%	1.65	709-1039-1-ND	10.34	61.10	176.25	709-1039-2-ND	2,000	169.20/M	102S41W103KV4E
1808	X7R	2,000	1,000pF	±10%	2.03	709-1040-1-ND	5.14	30.36	87.56	709-1040-2-ND	2,000	84.06/M	202S41W102KV4E
		2,000	2,700pF	±10%	2.03	709-1041-1-ND	8.26	48.82	140.81	709-1041-2-ND	2,000	135.18/M	202S41W272KV4E
		2,000	470pF	±10%	2.03	709-1043-1-ND	17.26	101.99	294.19	709-1043-2-ND	2,000	282.42/M	202R29N471KV4E
		3,000	330pF	±10%	2.03	709-1044-1-ND	13.20	78.00	225.00	709-1044-2-ND	2,000	216.00/M	302R29N331KV4E
		2,000	150pF	±10%	2.03	709-1042-1-ND	4.86	28.73	82.88	709-1042-2-ND	2,000	79.56/M	202R29W151KV4E
1812	X7R	2,000	470pF	±10%	2.80	709-1045-1-ND	5.16	30.49	87.94	709-1045-2-ND	2,000	84.42/M	202R29W471KV4E
		2,000	1,000pF	±10%	2.80	709-1046-1-ND	5.50	32.50	93.75	709-1046-2-ND	2,000	90.00/M	202R29W102KV4E
		3,000	1,000pF	±10%	2.80	709-1047-1-ND	7.13	42.12	121.50	709-1047-2-ND	2,000	116.64/M	302R29W102KV4E
		500	.1µF	±10%	2.80	709-1049-1-ND	18.55	109.59	—	709-1049-2-ND	500	185.46	501S43W104KV4E
		500	22,000pF	±10%	2.80	709-1050-1-ND	10.96	64.74	—	709-1050-2-ND	1,000	179.28	501S43W223KV4E

† Tip and Ring Chip

(Continued)

Digi-Reel® Most SMT cutdown parts are available on a Digi-Reel®. For Digi-Reel part number, change 1-ND to 6-ND or CT-ND to DKR-ND. See Digi-Key® Services on page 2 for additional information.

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