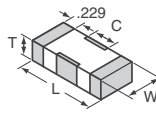


X2Y filter capacitors employ a unique, patented low inductance design featuring two balanced capacitors that are immune to temperature, voltage and aging performance differences. These components offer superior decoupling and EMI filtering performance.



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	5.29	31.22	90.05	709-1000-2-ND	4,000	86.40/M	500X14N5R6MV4T
		50	10pF			709-1001-1-ND	5.29	31.22	90.05	709-1001-2-ND	4,000	86.40/M	500X14N100MV4T
		50	22pF			709-1002-1-ND	5.29	31.22	90.05	709-1002-2-ND	4,000	86.40/M	500X14N220MV4T
		50	47pF			709-1003-1-ND	5.42	32.05	92.44	709-1003-2-ND	4,000	88.58/M	500X14N470MV4T
		50	100pF			709-1004-1-ND	5.60	33.08	95.44	709-1004-2-ND	4,000	91.48/M	500X14N101MV4T
	X7R	6.3	.1μF	±20%	0.660	709-1009-1-ND	7.89	46.62	134.46	709-1009-2-ND	4,000	129.23/M	6R3X14W104MV4T
		6.3	.22μF			709-1104-1-ND	7.40	43.71	126.06	709-1104-2-ND	4,000	121.25/M	6R3X14W224MV4T
		10	.1μF			709-1101-1-ND	7.89	46.62	134.46	709-1101-2-ND	4,000	129.23/M	100X14W104MV4T
		16	47,000pF			709-1088-1-ND	8.78	51.87	149.63	709-1088-2-ND	4,000	143.75/M	160X14W4711MV4T
		25	22,000pF			709-1087-1-ND	7.02	41.49	119.70	709-1087-2-ND	4,000	114.71/M	250X14W223MV4T
		50	470pF			709-1085-1-ND	5.09	30.09	86.78	709-1085-2-ND	4,000	83.49/M	500X14W4711MV4T
		50	1,000pF			709-1005-1-ND	5.10	30.10	86.84	709-1005-2-ND	4,000	83.49/M	500X14W102MV4T
1206	X7R	50	1,500pF	±20%	0.660	709-1006-1-ND	5.10	30.10	86.84	709-1006-2-ND	4,000	83.49/M	500X14W152MV4T
		50	2,200pF			709-1086-1-ND	5.45	32.15	92.75	709-1086-2-ND	4,000	89.30/M	500X14W222MV4T
		50	4,700pF			709-1007-1-ND	5.26	31.07	89.64	709-1007-2-ND	4,000	86.40/M	500X14W472MV4T
		50	10,000pF			709-1008-1-ND	6.28	37.11	107.05	709-1008-2-ND	4,000	103.10/M	500X14W103MV4T
		100	4,700pF			709-1105-1-ND	4.79	28.30	81.63	709-1105-2-ND	4,000	78.41/M	101X14W472MV4T
0805	X7R	10	.18μF	±20%	1.016	709-1106-1-ND	13.50	79.77	230.12	709-1106-2-ND	4,000	220.71/M	100X15W184MV4E
		50	1,000pF			709-1010-1-ND	9.88	58.41	168.48	709-1010-2-ND	4,000	161.90/M	500X15W102MV4E
		50	10,000pF			709-1011-1-ND	10.60	62.64	180.69	709-1011-2-ND	4,000	173.52/M	500X15W103MV4E
		50	47,000pF			709-1012-1-ND	22.19	131.11	378.20	709-1012-2-ND	4,000	363.00/M	500X15W473MV4E
1210	X7R	50	1000pF	±20%	1.270	709-1107-1-ND	13.18	77.91	224.76	709-1107-2-ND	3,000	215.63/M	500X18N102MV4E
		10	.47μF			709-1103-1-ND	14.55	85.97	247.98	709-1103-2-ND	3,000	238.13/M	100X18W474MV4E
		16	.22μF			709-1102-1-ND	12.14	71.75	206.97	709-1102-2-ND	3,000	198.93/M	160X18W224MV4E
1410	X7R	50	.1μF	±20%	1.778	709-1013-1-ND	22.19	131.11	378.20	709-1013-2-ND	3,000	363.00/M	500X18W104MV4E
		16	1.0μF			709-1108-1-ND	14.67	86.71	250.13	709-1108-2-ND	2,000	240.31/M	160X41W105MV4E
1812	X7R	50	.47μF	±20%	2.286	709-1017-1-ND	39.92	235.86	680.36	709-1017-2-ND	2,000	653.40/M	500X44W404MV4E
						709-1016-1-ND	46.96	277.48	800.42	709-1016-2-ND	1,000	768.11	500X43W474MV4E

F

MLCC Capacitors

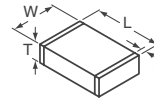
General Purpose, High Voltage and TANCERAM[®]

High Voltage Applications:

- Analog and Digital Modems
- Lighting Ballast Circuits
- Voltage Multipliers
- DC-DC Converters
- LAN/WAN Interface
- 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

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	1.01	5.95	17.16	709-1019-2-ND	4,000	16.70/M	501R15N101KV4T
		250	22,000pF	±10%		709-1018-1-ND†	1.41	8.31	23.96	709-1018-2-ND†	3,000	23.24/M	251R15W223KV4E
	X7R	500	1,000pF	±10%	1.27	709-1020-1-ND	1.04	6.13	17.70	709-1020-2-ND	3,000	16.70/M	501R15W102KV4E
		500	10,000pF	±10%		709-1021-1-ND	1.84	10.85	31.31	709-1021-2-ND	3,000	29.77/M	501R15W103KV4E
		500	100pF	±10%		709-1022-1-ND	1.23	7.27	20.97	709-1022-2-ND	3,000	20.33/M	501R18N101JV4E
1206	NP0	500	220pF	±5%	1.27	709-1023-1-ND	1.44	8.49	24.50	709-1023-2-ND	3,000	23.24/M	501R18N221JV4E
		500	470pF	±5%		709-1024-1-ND	1.84	10.85	31.31	709-1024-2-ND	3,000	29.77/M	501R18N471JV4E
	X7R	2,000	100pF	±5%		709-1033-1-ND	2.23	13.17	37.98	709-1033-2-ND	3,000	36.30/M	202R18N101JV4E
		2,000	220pF	±5%		709-1034-1-ND	2.32	13.69	39.48	709-1034-2-ND	3,000	37.76/M	202R18N221JV4E
		500	1,000pF	±10%	1.27	709-1025-1-ND	1.19	7.03	20.28	709-1025-2-ND	3,000	19.61/M	501R18W102KV4E
		500	4,700pF	±10%		709-1026-1-ND	2.24	13.21	38.12	709-1026-2-ND	3,000	36.30/M	501R18W472KV4E
		500	10,000pF	±10%		709-1027-1-ND	1.56	9.21	26.54	709-1027-2-ND	3,000	25.41/M	501R18W103KV4E
		500	22,000pF	±10%		709-1028-1-ND	2.24	13.21	38.12	709-1028-2-ND	2,000	36.30/M	501R18W223KV4E
		1,000	1,000pF	±10%		709-1029-1-ND	1.57	9.25	26.68	709-1029-2-ND	3,000	25.41/M	102R18W102KV4E
		1,000	4,700pF	±10%		709-1031-1-ND	2.42	14.35	41.38	709-1031-2-ND	3,000	39.93/M	102R18W472KV4E
2,000	470pF	±10%	1.27	709-1035-1-ND	1.61	9.53	27.50	709-1035-2-ND	3,000	26.14/M	202R18W471KV4E		
2,000	1,000pF	±10%		709-1036-1-ND	2.00	11.85	34.17	709-1036-2-ND	3,000	32.67/M	202R18W102KV4E		
1210	NP0	1,000	680pF	±10%	1.65	709-1038-1-ND	4.31	25.48	73.51	709-1038-2-ND	2,000	70.42/M	102S41N681KV4E
		500	47,000pF	±10%		709-1037-1-ND	6.96	41.15	118.70	709-1037-2-ND	2,000	113.98/M	501S41W473KV4E
	X7R	1,000	10,000pF	±10%		709-1039-1-ND	5.43	32.09	92.57	709-1039-2-ND	2,000	88.57/M	102S41W103KV4E
		2,000	1,000pF	±10%		709-1040-1-ND	3.73	22.04	63.57	709-1040-2-ND	2,000	60.99/M	202S41W102KV4E
		2,000	2,700pF	±10%		709-1041-1-ND	6.00	35.44	102.23	709-1041-2-ND	2,000	98.01/M	202S41W272KV4E
1808	NP0	2,000	470pF	±10%	2.03	709-1043-1-ND	12.53	74.04	213.58	709-1043-2-ND	2,000	204.73/M	202R29N471KV4E
		3,000	330pF	±10%		709-1044-1-ND	5.90	34.88	100.59	709-1044-2-ND	2,000	96.56/M	302R29N331KV4E
	X7R	2,000	150pF	±10%		709-1042-1-ND	3.53	20.86	60.17	709-1042-2-ND	2,000	58.08/M	202R29W151KV4E
		2,000	470pF	±10%		709-1045-1-ND	3.75	22.14	63.84	709-1045-2-ND	2,000	60.99/M	202R29W471KV4E
		2,000	1,000pF	±10%		709-1046-1-ND	3.99	23.60	68.06	709-1046-2-ND	2,000	65.34/M	202R29W102KV4E
3,000	1,000pF	±10%		709-1047-1-ND	5.18	30.58	88.21	709-1047-2-ND	2,000	84.94/M	302R29W102KV4E		
1812	X7R	500	.1μF	±10%	2.80	709-1049-1-ND	13.47	79.56	—	709-1049-2-ND	500	109.99	501S43W104KV4E
		500	22,000pF	±10%		709-1050-1-ND	7.96	47.00	—	709-1050-2-ND	1,000	129.95	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.

Free shipping on orders over £50! All prices are in British pound sterling and include duties.

1712 (UK091) uk.digikey.com — FREEPHONE: 0-800-587-0991 • 0-800-904-7786 — FREEFAX: 0-800-587-0992 • 0-800-904-7783

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	
1812	X7R	1,000	10,000pF	±10%	2.80	709-1057-1-ND	8.15	48.18	—	709-1057-2-ND	1,000	133.58	102S43W103KV4E
		2,000	470pF	±10%		709-1052-1-ND	7.49	44.26	127.69	709-1052-2-ND	1,000	122.69	202S43W471KV4E
		2,000	1,000pF	±10%		709-1053-1-ND	6.52	38.51	111.08	709-1053-2-ND	1,000	106.72	202S43W102KV4E
		2,000	3,300pF	±10%		709-1054-1-ND	8.12	48.00	138.44	709-1054-2-ND	1,000	132.86	202S43W332KV4E
		3,000	150pF	±10%		709-1051-1-ND	6.32	37.37	107.81	709-1051-2-ND	1,000	103.82	302S43W151KV4E
		3,000	1,000pF	±10%		709-1055-1-ND	6.85	40.49	116.80	709-1055-2-ND	1,000	111.80	302S43W102KV4E
		3,000	3,300pF	±10%	2.80	709-1056-1-ND	10.30	60.88	—	709-1056-2-ND	500	84.22	302S43W332KV4E
1825	X7R	250	1µF	±10%	3.55	709-1048-1-ND†	65.82	388.94	—	709-1048-2-ND†	500	538.69	251S49W105KV4E
2225	X7R	2,000	10,000pF	±10%	3.81	709-1058-1-ND	53.48	315.98	911.49	709-1058-2-ND	1,000	874.83	202S48W103KV4E
		1,000	.1µF	±10%		709-1059-1-ND	55.34	327.03	—	709-1059-2-ND	500	452.66	102S48W104KV4E
TANCERAM®													
0402	X5R	6.3	1µF	±10%	0.64	709-1060-1-ND	1.26	7.49	21.59	709-1060-2-ND	10,000	21.06/M	6R3R07X105KV4T
		6.3	.22µF	±10%		709-1139-1-ND▲	1.15	6.80	19.60	709-1139-2-ND▲	10,000	18.88/M	6R3R07X224KV4T
0603	X5R	10	.47µF	±10%	0.89	709-1061-1-ND	1.40	8.26	23.82	709-1061-2-ND	4,000	23.24/M	100R14X474KV4T
		10	1µF	±20%		709-1062-1-ND	1.12	6.61	19.06	709-1062-2-ND	4,000	18.15/M	100R14X105MV4T
0805	X5R	6.3	10µF	±10%	1.27	709-1065-1-ND	6.69	39.51	113.97	709-1065-2-ND	3,000	109.63/M	6R3R15X106KV4E
		6.3	22µF	±10%		709-1066-1-ND	8.39	49.55	142.93	709-1066-2-ND	3,000	137.22/M	6R3R15X226KV4E
		10	2.2µF	±10%		709-1063-1-ND	1.60	9.44	27.23	709-1063-2-ND	3,000	26.14/M	100R15X225KV4E
		10	4.7µF	±10%		709-1064-1-ND	4.37	25.82	74.46	709-1064-2-ND	3,000	71.15/M	100R15X475KV4E
1206	X7R	16	1µF	±10%	1.27	709-1068-1-ND	1.36	8.02	23.14	709-1068-2-ND	3,000	22.51/M	160R18W105KV4E
		16	2.2µF	±10%		709-1070-1-ND	2.32	13.69	39.48	709-1070-2-ND	3,000	37.76/M	160R18W225KV4E
		25	.33µF	±10%		709-1067-1-ND	1.36	8.02	23.14	709-1067-2-ND	3,000	22.51/M	250R18W334KV4E
	X5R	25	1µF	±10%	709-1069-1-ND	2.00	11.80	34.03	709-1069-2-ND	2,000	32.67/M	250R18W105KV4E	
		6.3	10µF	±10%	709-1074-1-ND	3.50	20.67	59.63	709-1074-2-ND	2,000	57.36/M	6R3R18X106KV4E	
		10	3.3µF	±10%	709-1071-1-ND	5.59	33.03	95.29	709-1071-2-ND	2,000	91.48/M	100R18X335KV4E	
1210	X5R	10	4.7µF	±10%	1.65	709-1072-1-ND	4.60	27.14	78.27	709-1072-2-ND	2,000	75.51/M	100R18X475KV4E
		16	4.7µF	±20%		709-1073-1-ND	3.72	21.95	63.30	709-1073-2-ND	2,000	60.99/M	160R18X475MV4E
		6.3	22µF	±20%		709-1078-1-ND	11.18	66.07	—	709-1078-2-ND	500	91.48	6R3S41X226MV4E
		6.3	100µF	±20%		709-1079-1-ND	38.33	226.51	653.40	709-1079-2-ND	2,000	627.27/M	6R3S41X107MV4E
Y5V	10	16	10µF	±10%	1.65	709-1076-1-ND	6.79	40.11	115.71	709-1076-2-ND	2,000	111.08/M	160S41X106KV4E
		25	4.7µF	±10%		709-1075-1-ND	5.75	33.98	98.01	709-1075-2-ND	2,000	94.38/M	250S41X475KV4E
		25	10µF	±10%		709-1077-1-ND	7.59	44.83	123.32	709-1077-2-ND	2,000	124.15/M	250S41X106KV4E
1812	X5R	6.3	100µF	±20%	2.80	709-1082-1-ND	4.39	25.95	74.87	709-1082-2-ND	2,000	71.88/M	100S41Y226ZV4E
		16	22µF	±20%		709-1084-1-ND	44.24	261.43	—	709-1084-2-ND	500	361.91	6R3S43X107MV4E
		16	22µF	±20%		709-1083-1-ND	18.37	108.54	—	709-1083-2-ND	500	150.28	160S43X226MV4E
Surface Mount MLCC's													
0402	NPO	25	150pF	±5%	0.64	709-1124-1-ND▲	.26	1.56	4.49	709-1124-2-ND▲	10,000	4.36/M	250R07N151JV4T
			220pF	±5%		709-1125-1-ND▲	.26	1.56	4.49	709-1125-2-ND▲	10,000	4.36/M	250R07N221JV4T
			1.0pF	±0.25pF		709-1112-1-ND▲	.37	2.17	6.27	709-1112-2-ND▲	10,000	5.81/M	500R07N1R0CV4T
			2.2pF	±0.25pF		709-1113-1-ND▲	.37	2.17	6.27	709-1113-2-ND▲	10,000	5.81/M	500R07N2R2CV4T
			3.3pF	±0.25pF		709-1114-1-ND▲	.37	2.17	6.27	709-1114-2-ND▲	10,000	5.81/M	500R07N3R3CV4T
			4.7pF	±0.25pF		709-1115-1-ND▲	.37	2.17	6.27	709-1115-2-ND▲	10,000	5.81/M	500R07N4R7CV4T
		50	6.8pF	±0.25pF	709-1116-1-ND▲	.37	2.17	6.27	709-1116-2-ND▲	10,000	5.81/M	500R07N6R8CV4T	
			10pF	±5%	709-1117-1-ND▲	.23	1.32	3.81	709-1117-2-ND▲	10,000	3.63/M	500R07N100JV4T	
			15pF	±5%	709-1118-1-ND▲	.23	1.32	3.81	709-1118-2-ND▲	10,000	3.63/M	500R07N150JV4T	
			22pF	±5%	709-1119-1-ND▲	.23	1.32	3.81	709-1119-2-ND▲	10,000	3.63/M	500R07N220JV4T	
			33pF	±5%	709-1120-1-ND▲	.23	1.32	3.81	709-1120-2-ND▲	10,000	3.63/M	500R07N330JV4T	
			47pF	±5%	709-1121-1-ND▲	.23	1.32	3.81	709-1121-2-ND▲	10,000	3.63/M	500R07N470JV4T	
	X5R	10	68pF	±5%	0.64	709-1122-1-ND▲	.23	1.32	3.81	709-1122-2-ND▲	10,000	3.63/M	500R07N680JV4T
			100pF	±5%		709-1123-1-ND▲	.26	1.56	4.49	709-1123-2-ND▲	10,000	4.36/M	500R07N101JV4T
			.1µF	±10%		709-1126-1-ND▲	.42	2.50	7.22	709-1126-2-ND▲	10,000	7.26/M	100R07X104KV4T
			.1µF	±10%		709-1129-1-ND▲	.42	2.50	7.22	709-1129-2-ND▲	10,000	7.26/M	160R07X104KV4T
			.1µF	+80/-20%		709-1130-1-ND▲	.44	2.60	7.49	709-1130-2-ND▲	10,000	7.26/M	160R07Y104ZV4T
			X7R	16		.01µF	±10%	0.64	709-1127-1-ND▲	.30	1.75	5.04	709-1127-2-ND▲
	22,000pF	±10%			709-1128-1-ND▲	.30	1.75		5.04	709-1128-2-ND▲	10,000	5.09/M	160R07W223KV4T
	1,000pF	±10%			709-1131-1-ND▲	.21	1.23		3.54	709-1131-2-ND▲	10,000	3.63/M	250R07W102KV4T
	0.01µF	±10%			709-1132-1-ND▲	.30	1.75		5.04	709-1132-2-ND▲	10,000	5.09/M	250R07W103KV4T
	1,000pF	±10%			709-1133-1-ND▲	.21	1.23		3.54	709-1133-2-ND▲	10,000	3.63/M	500R07W102KV4T
	.01µF	±10%			709-1134-1-ND▲	.30	1.75		5.04	709-1134-2-ND▲	10,000	5.09/M	500R07W103KV4T
	50	2,200pF		±10%	709-1135-1-ND▲	.21	1.23	3.54	709-1135-2-ND▲	10,000	3.63/M	500R07W222KV4T	
3,300pF		±10%		709-1136-1-ND▲	.21	1.23	3.54	709-1136-2-ND▲	10,000	3.63/M	500R07W332KV4T		
470pF		±10%		709-1137-1-ND▲	.21	1.23	3.54	709-1137-2-ND▲	10,000	3.63/M	500R07W471KV4T		
4,700pF		±10%		709-1138-1-ND▲	.30	1.75	5.04	709-1138-2-ND▲	10,000	5.09/M	500R07W472KV4T		
10pF		±5%		709-1140-1-ND‡	.28	1.66	4.76	709-1140-2-ND‡	4,000	4.36/M	500R14N100JV4T		
12pF		±5%		709-1141-1-ND‡	.28	1.66	4.76	709-1141-2-ND‡	4,000	4.36/M	500R14N120JV4T		
0603	NPO	50	15pF	±5%	0.89	709-1142-1-ND‡	.28	1.66	4.76	709-1142-2-ND‡	4,000	4.36/M	500R14N150JV4T
			22pF	±5%		709-1143-1-ND‡	.28	1.66	4.76	709-1143-2-ND‡	4,000	4.36/M	500R14N220JV4T
			33pF	±5%		709-1144-1-ND‡	.28	1.66	4.76	709-1144-2-ND‡	4,000	4.36/M	500R14N330JV4T
			47pF	±5%		709-1145-1-ND‡	.28	1.66	4.76	709-1145-2-ND‡	4,000	4.36/M	500R14N470JV4T
			68pF	±5%		709-1146-1-ND‡	.28	1.66	4.76	709-1146-2-ND‡	4,000	4.36/M	500R14N680JV4T
			100pF	±5%		709-1147-1-ND‡	.28	1.66	4.76	709-1147-2-ND‡	4,000	4.36/M	500R14N101JV4T
		X7R	220pF	±5%	709-1148-1-ND‡	.34	2.03	5.85	709-1148-2-ND‡	4,000	5.81/M	500R14N221JV4T	
			330pF	±5%	709-1149-1-ND‡	.34	2.03	5.85	709-1149-2-ND‡	4,000	5.81/M	500R14N331JV4T	
			470pF	±5%	709-1150-1-ND‡	.51	3.02	8.71	709-1150-2-ND‡	4,000	8.72/M	500R14N471JV4T	

† 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.

Free shipping on orders over £50! All prices are in British pound sterling and include duties.

uk.digikey.com — FREEPHONE: 0-800-587-0991 • 0-800-904-7786 — FREEFAX: 0-800-587-0992 • 0-800-904-7783

(UK091) 1713

F

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	X7R	16	100pF	±5%	0.89	709-1151-1-ND‡	1.09	6.42	18.51	709-1151-2-ND‡	4,000	17.43/M	500R14N102JV4T		
			.01µF	±10%		709-1152-1-ND‡	.30	1.79	5.18	709-1152-2-ND‡	4,000	5.09/M	160R14W103KV4T		
			.1µF	±10%		709-1153-1-ND‡	.99	5.85	16.88	709-1153-2-ND‡	4,000	15.98/M	160R14W104KV4T		
		25	.01µF	±10%	0.89	709-1154-1-ND‡	.30	1.79	5.18	709-1154-2-ND‡	4,000	5.09/M	250R14W103KV4T		
			.1µF	±10%		709-1155-1-ND‡	.99	5.85	16.88	709-1155-2-ND‡	4,000	15.98/M	250R14W104KV4T		
			.22µF	±10%		709-1156-1-ND‡	.28	1.66	4.76	709-1156-2-ND‡	4,000	4.36/M	250R14W224KV4T		
			.047µF	±10%		709-1157-1-ND‡	.30	1.79	5.18	709-1157-2-ND‡	4,000	5.09/M	250R14W473KV4T		
			1000pF	±10%		709-1159-1-ND‡	.28	1.66	4.76	709-1159-2-ND‡	4,000	4.36/M	500R14W102KV4T		
			.01µF	±10%		709-1160-1-ND‡	.30	1.79	5.18	709-1160-2-ND‡	4,000	5.09/M	500R14W103KV4T		
		50	.1µF	±10%	0.89	709-1161-1-ND‡	.99	5.85	16.88	709-1161-2-ND‡	4,000	15.98/M	500R14W104KV4T		
			2,200pF	±10%		709-1162-1-ND‡	.28	1.66	4.76	709-1162-2-ND‡	4,000	4.36/M	500R14W222KV4T		
			.022µF	±10%		709-1163-1-ND‡	.30	1.79	5.18	709-1163-2-ND‡	4,000	5.09/M	500R14W223KV4T		
			470pF	±10%		709-1164-1-ND‡	.28	1.66	4.76	709-1164-2-ND‡	4,000	4.36/M	500R14W471KV4T		
			.047µF	±10%		709-1165-1-ND‡	.30	1.79	5.18	709-1165-2-ND‡	4,000	5.09/M	500R14W473KV4T		
			3,300pF	±10%		709-1166-1-ND‡	.28	1.66	4.76	709-1166-2-ND‡	4,000	4.36/M	500R14W7332KV4T		
		0805	NP0	25	10pF	±5%	1.27	709-1168-1-ND§	.32	1.89	5.45	709-1168-2-ND§	4,000	5.09/M	500R15N100JV4T
					12pF	±5%		709-1169-1-ND§	.32	1.89	5.45	709-1169-2-ND§	4,000	5.09/M	500R15N120JV4T
					15pF	±5%		709-1170-1-ND§	.32	1.89	5.45	709-1170-2-ND§	4,000	5.09/M	500R15N150JV4T
18pF	±5%				709-1171-1-ND§	.32		1.89	5.45	709-1171-2-ND§	4,000	5.09/M	500R15N180JV4T		
22pF	±5%				709-1172-1-ND§	.32		1.89	5.45	709-1172-2-ND§	4,000	5.09/M	500R15N220JV4T		
27pF	±5%				709-1173-1-ND§	.30		1.79	5.18	709-1173-2-ND§	4,000	5.09/M	500R15N270KV4T		
33pF	±5%				709-1174-1-ND§	.32		1.89	5.45	709-1174-2-ND§	4,000	5.09/M	500R15N330JV4T		
47pF	±5%				709-1175-1-ND§	.32		1.89	5.45	709-1175-2-ND§	4,000	5.09/M	500R15N470JV4T		
100pF	±5%				709-1176-1-ND§	.32		1.89	5.45	709-1176-2-ND§	4,000	5.09/M	500R15N101JV4T		
220pF	±5%				709-1178-1-ND§	.40		2.36	6.81	709-1178-2-ND§	4,000	6.54/M	500R15N221JV4T		
470pF	±5%				709-1179-1-ND§	.49		2.93	8.44	709-1179-2-ND§	4,000	7.99/M	500R15N471JV4T		
1,000pF	±5%				709-1180-1-ND§	.94		5.57	16.07	709-1180-2-ND§	4,000	15.25/M	500R15N102JV4T		
100pF	±5%				709-1177-1-ND§	.67		3.96	11.43	709-1177-2-ND§	4,000	10.89/M	101R15N101JV4T		
100	1,000pF				±10%	1.27		709-1181-1-ND§	.69	4.06	11.71	709-1181-2-ND§	4,000	10.89/M	101R15W102KV4T
	.01µF				±10%			709-1182-1-ND§	.71	4.20	12.12	709-1182-2-ND§	4,000	11.62/M	101R15W103KV4T
	.1µF				±10%			709-1183-1-ND§	.49	2.88	8.31	709-1183-2-ND§	4,000	7.99/M	160R15W104KV4T
	.47µF				±10%			709-1184-1-ND§	2.42	14.35	41.38	709-1184-2-ND§	3,000	39.93/M	160R15W474KV4E
	.1µF				±10%			709-1185-1-ND§	.49	2.88	8.31	709-1185-2-ND§	4,000	7.99/M	250R15W104KV4T
	.22µF	±10%	709-1186-1-ND§	1.79	10.57		30.49	709-1186-2-ND§	4,000	29.04/M	250R15W224KV4T				
X7R	50	1,000pF	±10%	1.27	709-1187-1-ND§	.32	1.89	5.45	709-1187-2-ND§	4,000	5.09/M	500R15W102KV4T			
		.01µF	±10%		709-1188-1-ND§	.32	1.89	5.45	709-1188-2-ND§	4,000	5.09/M	500R15W103KV4T			
		.1µF	±10%		709-1189-1-ND§	.49	2.88	8.31	709-1189-2-ND§	4,000	7.99/M	500R15W104KV4T			
		.022µF	±10%		709-1190-1-ND§	.51	3.02	8.71	709-1190-2-ND§	4,000	8.72/M	500R15W223KV4T			
		.22µF	±10%		709-1191-1-ND§	2.40	14.16	40.84	709-1191-2-ND§	4,000	39.21/M	500R15W224KV4T			
		3,300pF	±10%		709-1192-1-ND§	.34	2.03	5.85	709-1192-2-ND§	4,000	5.81/M	500R15W332KV4T			
	50	.033µF	±10%	1.27	709-1193-1-ND§	.62	3.68	10.62	709-1193-2-ND§	4,000	10.17/M	500R15W333KV4T			
		4,700pF	±10%		709-1194-1-ND§	.34	2.03	5.85	709-1194-2-ND§	4,000	5.81/M	500R15W472KV4T			
		.047µF	±10%		709-1195-1-ND§	.70	4.15	11.98	709-1195-2-ND§	4,000	11.62/M	500R15W473KV4T			

F

Kits

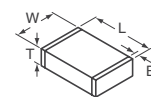
▲	709-1109-ND	MLC 0402 Series Capacitor Designer Kit	43.55
‡	709-1110-ND	MLC 0603 Series Capacitor Designer Kit	43.55
§	709-1111-ND	MLC 0805 Series Capacitor Designer Kit	43.55

Safety Certified Capacitors – Type SC

Johanson Dielectrics Type SC ceramic chip capacitors are designed for AC voltage surge and lightning protection in line-to-ground interface applications in computer network, modem, facsimile and other equipment. Johanson's safety capacitor offering includes four different case sizes and NP0 and X7R dielectric materials. These devices have barrier terminations and are surface mount ready.

Safety Rating Information:

- **X Capacitors:** Suitable for use in situations when failure of the capacitor would not lead to danger of electric shock
- **Y Capacitors:** Suitable for use in situations when failure of the capacitor could lead to danger of electric shock



Series	Physical Characteristics — Dimensions in mm			
	Safety Rating	L	W	B
1808	X2/Y3	4.57 ±0.25	2.03 ±0.25	0.51 ±0.25
	X1/Y2	4.80 ±0.25	2.03 ±0.25	0.30 ±0.13
2211	Y2	5.72 ±0.40	2.80 ±0.25	0.51 ±0.25
2220	X1/Y2	5.72 ±0.25	5.08 ±0.25	0.64 ±0.38

Size Code	Type	Impulse Voltage (V)	Safety Rating	WV AC	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	
1808	NP0	3,000	X2/Y3	250	10pF	±5%	2.16	709-1089-1-ND	4.63	27.37	78.95	709-1089-2-ND	2,000	75.51/M	302R29N100JV4E-****-SC
					150pF	±10%		709-1090-1-ND	5.43	32.08	92.54	709-1090-2-ND	2,000	88.57/M	302R29N151KV4E-****-SC
					470pF	±10%		709-1095-1-ND	7.38	43.60	125.78	709-1095-2-ND	2,000	120.52/M	302R29N471KV4E-****-SC
	X7R	3,000	X2/Y3	250	470pF	±10%	2.16	709-1091-1-ND	5.23	30.91	89.16	709-1091-2-ND	2,000	85.67/M	302R29W471KV4E-****-SC
					680pF	±10%		709-1093-1-ND	6.13	36.24	104.54	709-1093-2-ND	2,000	100.19/M	302R29W681KV4E-****-SC
					1,000pF	±10%		709-1094-1-ND	5.34	31.52	90.93	709-1094-2-ND	2,000	87.12/M	302R29W102KV4E-****-SC
X7R	5,000	X1/Y2	250	680pF	±10%	2.16	709-1092-1-ND	11.50	67.95	196.02	709-1092-2-ND	2,000	188.04/M	502R29W681KV4E-****-SC	
2211	X7R	5,000	Y2	250	680pF	±10%	2.16	709-1096-1-ND	9.31	55.02	158.73	709-1096-2-ND	2,000	152.46/M	502R30N330JV4E-****-SC
					1,000pF	±10%		709-1097-1-ND	10.15	59.98	173.01	709-1097-2-ND	2,000	166.26/M	502R30W681KV4E-****-SC
2220	X7R	5,000	X1/Y2	250	2,200pF	±10%	2.80	709-1098-1-ND	9.90	58.52	168.80	709-1098-2-ND	1,000	161.90	502R30W102KV4E-****-SC
					4,700pF	±10%		709-1099-1-ND	24.81	146.62	—	709-1099-2-ND	500	202.92	502S47W222KV4E-****-SC
								709-1100-1-ND	47.12	278.42	803.14	709-1100-2-ND	1,000	771.01	502S47W472KV4E-****-SC

Free shipping on orders over £50! All prices are in British pound sterling and include duties.

1714 (UK091) uk.digikey.com — FREEPHONE: 0-800-587-0991 • 0-800-904-7786 — FREEFAX: 0-800-587-0992 • 0-800-904-7783