

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			

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Kits

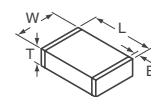
▲	709-1109-ND	MLC 0402 Series Capacitor Designer Kit	43.55
‡	709-1110-ND	MLC 0603 Series Capacitor Designer Kit	43.55
§	709-1111-ND	MLC 0805 Series Capacitor Designer Kit	43.55

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

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