



Robust Large Case High Voltage Multilayer Ceramic Chip Capacitors - VJ X7R and COG Series



Features:

X7R: • General purpose dielectric • Excellent aging characteristics • Ideal for decoupling and filtering • Surface mount, precious metal technology, wet build process

COG: • Ultra-stable dielectric • Low Dissipation Factor (DF) • Ideal for critical timing and tuning applications • Surface mount, precious metal technology, wet build process

Electrical Specifications:

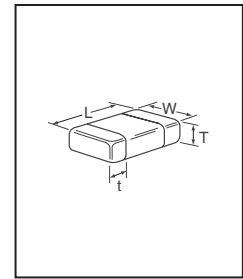
X7R: • Operating Temperature: -55°C – 125°C • Temperature Coefficient of Capacitance (TCC): ±15% from -55°C – 125°C, with 0 Vdc applied • Dissipation Factor (DF): ≤25V ratings: 3.5% maximum at 1.0V_{rms} and 1kHz, >25V ratings: 2.5% maximum at 1.0V_{rms} and 1 kHz

COG: • Operating Temperature: -55°C – 125°C • Temperature Coefficient of Capacitance (TCC): 0 ±30 ppm/°C from -55°C – 125°C • Dissipation Factor (DF): 0.1% maximum at 1.0V_{rms} and 1kHz for values >1000 pF, 0.1% maximum at 1.0V_{rms} and 1MHz for values ≤1000 pF

Applications:

X7R and COG: • High voltage • Decoupling • Filtering • Surge Suppression

Size Code	Dimensions - mm			
	L	W	T	t
1808	4.50 ±0.25	2.03 ±0.25	1.70	0.25 – 0.76
1812	4.50 ±0.25	3.20 ±0.20	2.18	0.25 – 0.76
1825	4.50 ±0.25	6.40 ±0.25	2.18	0.25 – 0.76
2220	5.59 ±0.20	5.08 ±0.25	2.18	0.25 – 0.76
2225	5.59 ±0.25	6.35 ±0.25	2.18	0.25 – 0.76



F

Size Code	Type	VV DC	Capacitance	Tolerance	Digi-Key Part No.	Cut Tape Pricing			Digi-Key Part No.	Tape and Reel		Vishay Part No.	
						1	10	100		Qty.	Pricing		
1808	X7R	200V	0.01µF	±10%	720-1122-1-ND	.50	4.17	26.13	720-1122-2-ND	2,000	99.53/M	VJ1808Y103KXCAT	
	X7R	1,000V	0.01µF	±10%	720-1123-1-ND	.87	7.33	49.76	720-1123-2-ND	2,500	207.32/M	VJ1808Y103KXGAT	
	X7R	200V	0.1µF	±10%	720-1129-1-ND	.64	5.38	33.72	720-1129-2-ND	2,000	128.48/M	VJ1808Y104KXCAT	
	X7R	500V	0.012µF	±10%	720-1137-1-ND	.69	5.89	40.00	720-1137-2-ND	3,000	166.67/M	VJ1808Y123KXCAT	
	X7R	500V	0.027µF	±10%	720-1155-1-ND	.69	5.89	40.00	720-1155-2-ND	2,500	166.67/M	VJ1808Y273KXCAT	
	X7R	200V	0.033µF	±10%	720-1158-1-ND	.53	4.41	27.65	—	—	—	VJ1808Y333KXCAT	
	COG (NPO)	200V	680pF	±5%	720-1171-1-ND	.78	6.48	40.63	—	—	—	VJ1808A681JXCAT	
	COG (NPO)	200V	1,000pF	±5%	720-1115-1-ND	.78	6.48	40.63	—	—	—	VJ1808A102JXCAT	
	COG (NPO)	500V	1,800pF	±5%	720-1143-1-ND	1.06	8.70	70.00	—	—	—	VJ1808A182JXCAT	
	COG (NPO)	1,000V	220pF	±5%	720-1146-1-ND	1.89	15.54	125.05	—	—	—	VJ1808A221JXCAT	
	COG (NPO)	1,000V	1,000pF	±5%	720-1116-1-ND	1.73	14.40	127.06	720-1116-2-ND	2,000	571.78/M	VJ1808A102JXGAT	
	1812	X7R	500V	0.01µF	±10%	720-1124-1-ND	.64	5.38	33.72	720-1124-2-ND	1,000	136.50	VJ1812Y103KXCAT
X7R		1,000V	0.01µF	±10%	720-1125-1-ND	.78	6.63	45.00	720-1125-2-ND	1,000	199.98	VJ1812Y103KXGAT	
X7R		500V	0.1µF	±10%	720-1130-1-ND	.83	7.09	48.15	720-1130-2-ND	1,000	213.99	VJ1812Y104KXCAT	
X7R		200V	0.12µF	±10%	720-1140-1-ND	.60	5.02	31.51	720-1140-2-ND	1,000	127.52	VJ1812Y124KXCAT	
X7R		1,000V	0.022µF	±10%	720-1149-1-ND	.93	7.82	57.43	720-1149-2-ND	1,000	258.02	VJ1812Y223KXGAT	
X7R		200V	0.22µF	±10%	720-1151-1-ND	.93	7.70	56.55	720-1151-2-ND	1,000	254.04	VJ1812Y224KXCAT	
X7R		200V	0.39µF	±10%	720-1162-1-ND	.88	7.39	54.29	720-1162-2-ND	1,000	243.93	VJ1812Y394KXCAT	
X7R		500V	0.068µF	±10%	720-1172-1-ND	.83	7.09	48.15	720-1172-2-ND	1,000	213.99	VJ1812Y683KXCAT	
COG (NPO)		200V	39pF	±5%	720-1161-1-ND	.68	5.71	38.78	720-1161-2-ND	1,000	172.36	VJ1812A390JXCAT	
COG (NPO)		200V	1,000pF	±5%	720-1117-1-ND	.74	6.15	38.55	720-1117-2-ND	1,000	156.03	VJ1812A102JXCAT	
COG (NPO)		200V	0.12µF	±5%	720-1138-1-ND	1.15	9.57	70.28	720-1138-2-ND	1,000	315.76	VJ1812A123JXCAT	
COG (NPO)		500V	100pF	±5%	720-1111-1-ND	.77	6.52	44.28	720-1111-2-ND	1,000	196.81	VJ1812A101JXCAT	
COG (NPO)		500V	4,700pF	±5%	720-1163-1-ND	1.10	9.00	72.43	720-1163-2-ND	1,000	329.24	VJ1812A472JXCAT	
COG (NPO)		1,000V	100pF	±5%	720-1112-1-ND	.88	7.31	53.70	720-1112-2-ND	1,000	241.24	VJ1812A101JXGAT	
COG (NPO)		1,000V	220pF	±5%	720-1147-1-ND	1.12	9.39	68.95	720-1147-2-ND	1,000	309.75	VJ1812A221JXGAT	
COG (NPO)		1,000V	1,000pF	±5%	720-1118-1-ND	1.12	9.39	68.95	720-1118-2-ND	1,000	309.75	VJ1812A102JXGAT	
1825		X7R	200V	0.015µF	±10%	720-1141-1-ND	.84	7.05	51.70	720-1141-2-ND	1,000	232.27	VJ1825Y153KXCAT
		X7R	200V	0.1µF	±10%	720-1131-1-ND	.82	6.96	47.23	720-1131-2-ND	1,000	209.90	VJ1825Y104KXCAT
	X7R	200V	0.22µF	±10%	720-1152-1-ND	.88	7.45	50.59	720-1152-2-ND	1,000	224.83	VJ1825Y224KXCAT	
	X7R	500V	0.047µF	±10%	720-1166-1-ND	1.07	8.78	70.66	720-1166-2-ND	1,000	321.19	VJ1825Y473KXCAT	
	X7R	500V	0.1µF	±10%	720-1132-1-ND	1.06	8.80	64.61	720-1132-2-ND	1,000	290.28	VJ1825Y104KXCAT	
	X7R	500V	0.18µF	±10%	720-1145-1-ND	1.24	10.14	81.65	720-1145-2-ND	1,000	371.13	VJ1825Y184KXCAT	
	X7R	1,000V	0.022µF	±10%	720-1150-1-ND	1.67	13.66	109.89	720-1150-2-ND	1,000	499.50	VJ1825Y223KXGAT	
	X7R	1,000V	0.033µF	±10%	720-1159-1-ND	1.67	13.66	109.89	720-1159-2-ND	1,000	499.50	VJ1825Y333KXGAT	
	X7R	1,000V	0.056µF	±10%	720-1170-1-ND	1.71	14.15	124.83	720-1170-2-ND	1,000	582.55	VJ1825Y563KXGAT	
	COG (NPO)	200V	1,000pF	±5%	720-1119-1-ND	1.07	8.89	65.24	720-1119-2-ND	1,000	293.10	VJ1825A102JXCAT	
	COG (NPO)	200V	4,700pF	±5%	720-1164-1-ND	1.06	8.67	69.81	720-1164-2-ND	1,000	317.35	VJ1825A472JXCAT	
	COG (NPO)	200V	0.18µF	±5%	720-1144-1-ND	1.58	12.96	104.30	720-1144-2-ND	1,000	474.10	VJ1825A183JXCAT	
	COG (NPO)	500V	100pF	±5%	720-1113-1-ND	1.35	11.08	89.17	720-1113-2-ND	1,000	405.33	VJ1825A101JXCAT	
	COG (NPO)	500V	1,000pF	±5%	720-1120-1-ND	1.35	11.08	89.17	720-1120-2-ND	1,000	405.33	VJ1825A102JXCAT	
	COG (NPO)	500V	0.01µF	±5%	720-1126-1-ND	1.60	13.17	105.96	720-1126-2-ND	1,000	481.66	VJ1825A103JXCAT	
	2220	X7R	200V	0.22µF	±10%	720-1153-1-ND	1.12	9.12	73.39	720-1153-2-ND	1,000	333.58	VJ2220Y224KXCAT
		X7R	200V	0.47µF	±10%	720-1168-1-ND	1.17	9.60	77.26	720-1168-2-ND	1,000	351.18	VJ2220Y474KXCAT
		X7R	500V	0.1µF	±10%	720-1133-1-ND	1.18	9.66	77.72	720-1133-2-ND	1,000	353.28	VJ2220Y104KXCAT
X7R		500V	0.15µF	±10%	720-1142-1-ND	1.23	10.09	81.24	720-1142-2-ND	1,000	369.27	VJ2220Y154KXCAT	
COG (NPO)		200V	0.01µF	±5%	720-1127-1-ND	1.24	10.16	81.78	720-1127-2-ND	1,000	371.75	VJ2220A103JXCAT	
COG (NPO)		500V	3,300pF	±5%	720-1156-1-ND	1.45	11.85	95.39	720-1156-2-ND	1,000	433.58	VJ2220A332JXCAT	
COG (NPO)		1,000V	3,300pF	±5%	720-1157-1-ND	1.84	15.28	134.82	720-1157-2-ND	1,000	629.16	VJ2220A332JXGAT	
2225		X7R	200V	0.47µF	±10%	720-1169-1-ND	1.16	9.67	71.00	720-1169-2-ND	1,000	318.97	VJ2225Y474KXCAT
	X7R	200V	1.0µF	±10%	720-1136-1-ND	1.41	11.60	93.37	720-1136-2-ND	1,000	424.41	VJ2225Y105KXCAT	
	X7R	500V	0.033µF	±10%	720-1160-1-ND	1.34	10.97	88.30	720-1160-2-ND	1,000	401.36	VJ2225Y333KXCAT	
	X7R	500V	0.1µF	±10%	720-1134-1-ND	1.18	9.66	77.72	720-1134-2-ND	1,000	353.28	VJ2225Y104KXCAT	
	X7R	500V	0.22µF	±10%	720-1154-1-ND	1.27	10.43	83.91	720-1154-2-ND	1,000	381.41	VJ2225Y224KXCAT	
	X7R	1,000V	0.047µF	±10%	720-1167-1-ND	1.71	14.15	124.83	720-1167-2-ND	1,000	582.55	VJ2225Y473KXGAT	
	X7R	1,000V	0.068µF	±10%	720-1173-1-ND	1.71	14.15	124.83	720-1173-2-ND	1,000	582.55	VJ2225Y683KXGAT	
	X7R	1,000V	0.1µF	±10%	720-1135-1-ND	1.83	15.02	120.85	720-1135-2-ND	1,000	549.32	VJ2225Y104KXCAT	
	COG (NPO)	200V	4,700pF	±5%	720-1165-1-ND	1.14	9.51	69.77	720-1165-2-ND	1,000	313.46	VJ2225A472JXCAT	
	COG (NPO)	200V	0.01µF	±5%	720-1128-1-ND	1.72	14.11	113.60	720-1128-2-ND	1,000	516.35	VJ2225A103JXCAT	
	COG (NPO)	500V	100pF	±5%	720-1114-1-ND	1.45	11.85	95.39	720-1114-2-ND	1,000	433.58	VJ2225A101JXCAT	
	COG (NPO)	500V	1,000pF	±5%	720-1121-1-ND	1.45	11.85	95.39	720-1121-2-ND	1,000	433.58	VJ2225A102JXCAT	
	COG (NPO)	500V	220pF	±5%	720-1148-1-ND	1.45	11.85	95.39	720-1148-2-ND	1,000	433.58	VJ2225A221JXCAT	
	COG (NPO)	500V	0.012µF	±5%	720-1139-1-ND	1.81	14.81	119.19	720-1139-2-ND	1,000	541.76	VJ2225A123JXCAT	

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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