

VISHAY / VITRAMON Surface Mount OMD Capacitors

VJ OMD SERIES: SMD CERAMIC CAPACITOR SOLUTIONS FOR BOARD FLEX SENSITIVE APPLICATIONS

Features:

- Efficient low-power consumption, ripple current capable to 1.2 arms at 100kHz
- High voltage breakdown compared to standard design
- Excellent reliability and thermal shock performance
- High frequency filtering for switching power
- Available with polymer termination for increase resistance to board flex cracking

Applications:

- Input filter capacitors
- Output filter capacitors
- Snubber capacitors reduce MOSFET voltage spikes
- Lighting ballasts
- Ideal for power supplies

Specifications:

- Temperature coefficient of capacitance (TCC): X7R Style- ±15% from -55°C with OVDC applied
- CoG (NPO) style- 0±30ppm/°C from -55°C to +125°C
- Operating temperature: -55°C to +125°C
- Voltage rating: 50VDC to 300VDC

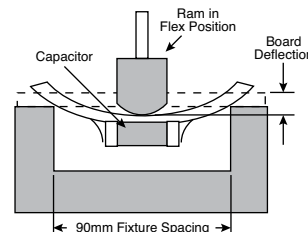
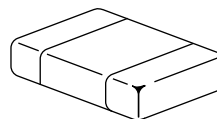
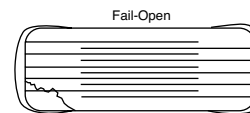
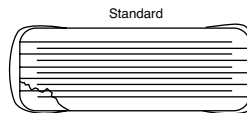


LEAD-FREE



RoHS Compliant

DIMENSIONS: in. (mm)						
Part Ordering Number	Length	Width	Max. Thickness (T)	Termination Pad		
				Min.	Max.	
VJ1206	0.126±0.008 (3.20±0.20)	0.063±0.008 (1.60±0.20)	0.067 (1.68)	0.010 (0.25)	0.028 (0.71)	
VJ1210	0.126±0.008 (3.20±0.20)	0.098±0.008 (2.50±0.20)	0.067 (1.68)	0.010 (0.25)	0.028 (0.71)	
VJ1812	0.177±0.010 (4.50±0.25)	0.126±0.008 (3.20±0.20)	0.086 (2.18)	0.010 (0.25)	0.030 (0.76)	
VJ1825	0.177±0.010 (4.50±0.25)	0.252±0.008 (6.40±0.20)	0.086 (2.18)	0.010 (0.25)	0.030 (0.76)	
VJ2220	0.220±0.010 (5.59±0.25)	0.200±0.008 (5.08±0.20)	0.086 (2.18)	0.010 (0.25)	0.030 (0.76)	
VJ2225	0.220±0.010 (5.59±0.25)	0.250±0.008 (6.35±0.20)	0.086 (2.18)	0.010 (0.25)	0.030 (0.76)	



A predominant failure mode in multilayer ceramic capacitors is cracking caused by board flexure that results in capacitance loss, leakage, and high current shorts. A short circuit condition can cause further failures of downstream components.

Extensive board flexure testing was performed on OMD-Capacitors soldered onto glass epoxy resin boards. The boards were then subjected to 8, flexure (see diagram above) and the Insulation Resistance (IR) of each capacitor was measured. IR remained >1000F in all cases because these designs do not allow cracks to bridge across opposing electrodes creating conductive pathways. Commercial grade product may experience a serious loss in IR and eventually short when tested under the same conditions.

Flexible Termination, SMD

Vishay

MOUSER STOCK NO.	Vishay Part No.	Cap Value	Voltage	Tolerance (%)	Price Each			Full Reel Quantity	Price Per Piece
					1	100	500		
Style 1206-Temperature Coef: X7R									
77-VJ1206Y102KXEAT4X	VJ1206Y102KXEAT4X	.001µF	500	10	.32	.28	.25	3000	.20
77-VJ1206Y102KXRAT4X	VJ1206Y102KXRAT4X	.001µF	1500	10	.44	.40	.35	2500	.28
77-VJ1206Y102MXFAT4X	VJ1206Y102MXFAT4X	.001µF	2000	20	.41	.27	.24	2500	.21
77-VJ1206Y103KBAAT4X	VJ1206Y103KBAAT4X	.01µF	50	10	.33	.212	.20	3000	.175
77-VJ1206Y103KXLAT4X	VJ1206Y103KXLAT4X	.01µF	630	10	.48	.31	.28	2500	.25
77-VJ1206Y104XAAT4X	VJ1206Y104XAAT4X	.1µF	50	5	.78	.712	.637	2500	.512
77-VJ1206Y104KBAAT4X	VJ1206Y104KBAAT4X	.1µF	50	10	.48	.31	.29	3000	.25
77-VJ1206Y104KXAAT4X	VJ1206Y104KXAAT4X	.1µF	50	10	.42	.40	.36	2500	.29
77-VJ1206Y183KBLAT4X	VJ1206Y183KBLAT4X	.018µF	630	10	.83	.794	.729	2500	.525
77-VJ1206Y272KXGAT4X	VJ1206Y272KXGAT4X	.0027µF	1000	10	.82	.787	.725	2500	.512
77-VJ1206Y471KXRAT4X	VJ1206Y471KXRAT4X	470pF	1500	10	.48	.46	.42	2500	.30
77-VJ1206Y472KXGAT4X	VJ1206Y472KXGAT4X	.0047µF	1000	10	.66	.63	.58	2500	.41
77-VJ1206Y561KXFAT4X	VJ1206Y561KXFAT4X	560pF	2000	10	.51	.49	.45	2500	.32
77-VJ1206Y681KXLAT4X	VJ1206Y681KXLAT4X	680pF	630	10	.41	.37	.33	2500	.26
Style 1210-Temperature Coef: X7R									
77-VJ1210Y102JXFAT4X	VJ1210Y102JXFAT4X	.001µF	2000	5	.74	.71	.65	2500	.46
77-VJ1210Y152MXFAT4X	VJ1210Y152MXFAT4X	.0015µF	2000	20	1.08	.70	.64	2500	.56
Style 1812-Temperature Coef: NPO/COG									
77-VJ1812A121KXGAT4X	VJ1812A121KXGAT4X	120pF	1000	10	1.10	1.05	.97	1000	.83
77-VJ1812A330JXGAT4X	VJ1812A330JXGAT4X	33pF	1000	5	2.73	2.59	2.39	1000	2.05
77-VJ1812A821JXGAT4X	VJ1812A821JXGAT4X	820pF	1000	5	3.75	3.56	3.28	1000	2.81
Style 1812-Temperature Coef: X7R									
77-VJ1812Y102KXFAT4X	VJ1812Y102KXFAT4X	.001µF	2000	10	2.12	2.01	1.85	1000	1.59
77-VJ1812Y103KXRAT4X	VJ1812Y103KXRAT4X	.01µF	1500	10	1.45	.93	.86	1000	.81
77-VJ1812Y103MXRAT4X	VJ1812Y103MXRAT4X	.01µF	1500	20	2.14	2.03	1.87	1000	1.60
77-VJ1812Y104KXEAT4X	VJ1812Y104KXEAT4X	.1µF	500	10	1.39	.90	.82	1000	.78
77-VJ1812Y104MXBAT4X	VJ1812Y104MXBAT4X	.1µF	100	20	1.22	.79	.72	1000	.68
77-VJ1812Y105KXBAT4X	VJ1812Y105KXBAT4X	1.0µF	100	10	3.97	2.75	2.44	1000	2.20
77-VJ1812Y105MBBAT4X	VJ1812Y105MBBAT4X	1.0µF	100	20	2.72	2.59	2.38	1000	2.04
77-VJ1812Y154KXEAT4X	VJ1812Y154KXEAT4X	.15µF	500	10	1.53	1.06	.94	1000	.85
77-VJ1812Y222KXFAT4X	VJ1812Y222KXFAT4X	.0022µF	2000	10	1.73	1.11	1.02	1000	.96
77-VJ1812Y334JXCAT4X	VJ1812Y334JXCAT4X	.33µF	200	5	2.38	1.53	1.41	1000	1.32
77-VJ1812Y392KXFAT4X	VJ1812Y392KXFAT4X	.0039µF	2000	10	2.12	2.01	1.85	1000	1.59
77-VJ1812Y471KXHAT4X	VJ1812Y471KXHAT4X	470pF	3000	10	2.55	2.42	2.23	1000	1.91
77-VJ1812Y472KXRAT4X	VJ1812Y472KXRAT4X	.0047µF	1500	10	1.66	1.35	1.30	1000	1.02
77-VJ1812Y474JFAAT4X	VJ1812Y474JFAAT4X	.47µF	50	5	3.31	3.14	2.90	1000	2.48
77-VJ1812Y474KXBAT4X	VJ1812Y474KXBAT4X	.47µF	100	10	1.61	1.53	1.41	1000	1.21
77-VJ1812Y822KXRAT4X	VJ1812Y822KXRAT4X	.0082µF	1500	10	2.21	2.10	1.94	1000	1.66
Style 1825-Temperature Coef: X7R									
77-VJ1825Y104KXEAT4X	VJ1825Y104KXEAT4X	.1µF	500	10	3.16	3.00	2.76	1000	2.37
Style 2220-Temperature Coef: NPO/COG									
77-VJ2220A392JXGAT4X	VJ2220A392JXGAT4X	.0039µF	1000	5	7.96	5.13	4.62	1000	4.44
Style 2220-Temperature Coef: X7R									
77-VJ2220Y224KXEAT4X	VJ2220Y224KXEAT4X	.22µF	500	10	5.08	4.83	4.45	1000	3.81
Style 2225-Temperature Coef: X7R									
77-VJ2225Y103KXFAT4X	VJ2225Y103KXFAT4X	.01µF	2000	10	4.69	3.02	2.77	1000	2.61
77-VJ2225Y223KXRAT4X	VJ2225Y223KXRAT4X	.023µF	1500	10	4.96	4.71	4.34	1000	3.72
77-VJ2225Y224MXEAT4X	VJ2225Y224MXEAT4X	.22µF	500	20	4.34	2.80	2.52	1000	2.42
77-VJ2225Y273KBFAT4X	VJ2225Y273KBFAT4X	.027µF	2000	10	8.80	8.36	7.70	1000	6.60
77-VJ2225Y334KXEAT4X	VJ2225Y334KXEAT4X	.33µF	500	10	5.33	3.69	3.28	1000	2.95
77-VJ2225Y473MXFAT4X	VJ2225Y473MXFAT4X	.047µF	2000	20	4.59	2.96	2.71	1000	2.56