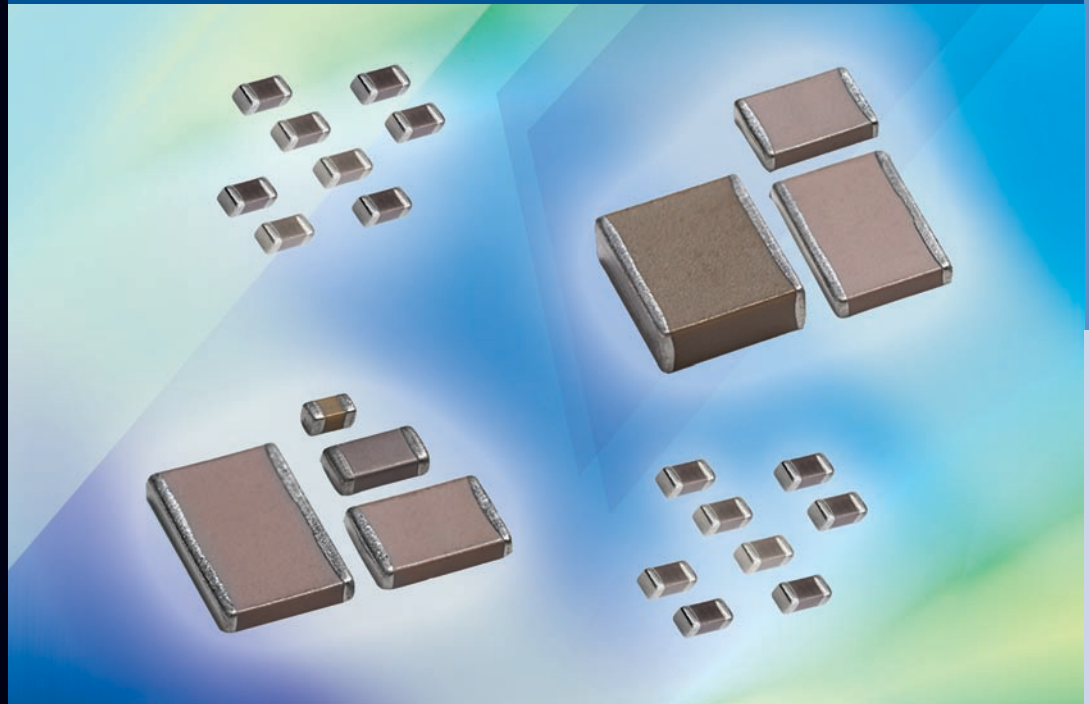




VISHAY INTERTECHNOLOGY, INC.



MULTILAYER CERAMIC CHIP CAPACITORS

Applications:

Basic Commodity (BME/NME Technology)

Commercial (NME Technology)

Automotive

Boardflex Sensitive Including Polymer Termination

Surface Arc-Over Prevention in High Voltage

High Reliability, Medical and Military/Aerospace

SEMICONDUCTORS

RECTIFIERS

- Schottky (single, dual)
- Standard, Fast, and Ultra-Fast Recovery (single, dual)
- Bridge
- Superrectifier®
- Sinterglass Avalanche Diodes

HIGH-POWER DIODES AND THYRISTORS

- High-Power Fast-Recovery Diodes
- Phase-Control Thyristors
- Fast Thyristors

SMALL-SIGNAL DIODES

- Schottky and Switching (single, dual)
- Tuner/Capacitance (single, dual)
- Bandswitching
- PIN

ZENER AND SUPPRESSOR DIODES

- Zener (single, dual)
- TVS (TRANSZORB®, Automotive, ESD, Arrays)

FETs

- Low-Voltage TrenchFET® Power MOSFETs
- High-Voltage TrenchFET® Power MOSFETs
- High-Voltage Planar MOSFETs
- JFETs

RF TRANSISTORS

- Bipolar Transistors (AF and RF)
- Dual Gate MOSFETs
- MOSMICs®

OPTOELECTRONICS

- IR Emitters and Detectors, and IR Receiver Modules
- Optocouplers and Solid-State Relays
- Optical Sensors
- LEDs and 7-Segment Displays
- Infrared Data Transceiver Modules
- Custom Products

ICs

- Power ICs
- Analog Switches
- RF Transceivers and Receiver Modules
- ICs for Optoelectronics

MODULES AND ASSEMBLIES

- Automotive Modules and Assemblies
- Power Modules (contain power diodes, thyristors, MOSFETs, IGBTs)
- DC/DC Converters

PASSIVE COMPONENTS

RESISTIVE PRODUCTS

- Foil Resistors
- Film Resistors
 - Metal Film Resistors
 - Thin Film Resistors
 - Thick Film Resistors
 - Metal Oxide Film Resistors
 - Carbon Film Resistors
- Wirewound Resistors
- Power Metal Strip® Resistors
- Chip Fuses
- Variable Resistors
 - Cermet Variable Resistors
 - Wirewound Variable Resistors
 - Conductive Plastic Variable Resistors
- Networks/Arrays
- Non-Linear Resistors
 - NTC Thermistors
 - PTC Thermistors
 - Varistors

MAGNETICS

- Inductors
- Transformers

CAPACITORS

- Tantalum Capacitors
 - Molded Chip Tantalum Capacitors
 - Coated Chip Tantalum Capacitors
 - Solid Through-Hole Tantalum Capacitors
 - Wet Tantalum Capacitors
- Ceramic Capacitors
 - Multilayer Chip Capacitors
 - Disc Capacitors
- Film Capacitors
- Power Capacitors
- Heavy-Current Capacitors
- Aluminum Capacitors
- Silicon RF Capacitors

STRAIN GAGE TRANSDUCERS AND STRESS ANALYSIS SYSTEMS

- PhotoStress®
- Strain Gages
- Load Cells
- Force Transducers
- Instruments
- Weighing Systems
- Specialized Strain Gage Systems

Multilayer Ceramic Chip Capacitors Selector Guide

Vishay

Vishay Intertechnology, Inc.

63 Lancaster Avenue

Malvern, PA 19355-2143

United States

www.vishay.com

NOTICE Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies. Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right. The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.

Multilayer Ceramic Chip Capacitors



Vishay

Series	Description	Case Size	T.C. and Dielectric	Voltage		Capacitance	
				(Min V)	(Max V)	(Min)	(Max)
Surface-Mount Multilayer Ceramic Chip Capacitors							
VJ HVArc Guard® COG (NPO)	FEATURES <ul style="list-style-type: none"> Higher capacitances and smaller case sizes Prevents Surface Arc-over as compared to standard high voltage MLCCs Voltage breakdowns are twice that of some competitor products Excellent reliability and high voltage performance APPLICATIONS <ul style="list-style-type: none"> DC-to-DC converters (Buck and Boost) Voltage multipliers for flyback converters Lighting ballast circuits Power supplies 	0805	COG (NPO)	1000	1500	10 pF	390 pF
		1206					1500 pF
		1210					2700 pF
		2220				470 pF	5600 pF
		2225					8200 pF
VJ HVArc Guard® X7R	FEATURES <ul style="list-style-type: none"> Higher capacitances and smaller case sizes Prevents Surface Arc-over as compared to standard high voltage MLCCs Voltage breakdowns are twice that of some competitor products Excellent reliability and high voltage performance Also available with polymer terminations for increase resistance to board flex cracking. APPLICATIONS <ul style="list-style-type: none"> DC-to-DC converters (Buck and Boost) Voltage multipliers for flyback converters Lighting ballast circuits Power Supplies 	0805	X7R	630	1000	100 pF	3300 pF
		1206					0.047 µF
		1210		250		0.082 µF	
		1808				0.10 µF	
		1812				0.27 µF	
DSCC 03028	FEATURES <ul style="list-style-type: none"> US defense supply center approved Federal stock control number, CAGE CODE 95275 Small case size (0603) Stable BP, BR and BX dielectrics Excellent aging characteristics Lead (Pb)-free applied for "M" termination code Tin/Lead "Z" termination code is available Made with a combination of design, materials and tight process control to achieve very high field reliability 	0603	BP	16	100	0.5 pF	1 nF
			BR				100 pF
			BX				
DSCC 03029	FEATURES <ul style="list-style-type: none"> US defense supply center approved Federal stock control number, CAGE CODE 95275. Small case size (0402) Stable BP, BR and BX dielectrics Excellent aging characteristics Lead (Pb)-free applied for "M" termination code Tin/Lead "Z" termination code is available Made with a combination of design, materials and tight process control to achieve very high field reliability 	0402	BP	16	100	0.5 pF	180 pF
			BR		50	100 pF	3.9 nF
			BX				



Series	Description	Case Size	T.C. and Dielectric	Voltage		Capacitance	
				(Min V)	(Max V)	(Min)	(Max)
Surface-Mount Multilayer Ceramic Chip Capacitors							
DSCC 05001	FEATURES <ul style="list-style-type: none"> • US defense supply center approved • Federal stock control number CAGE CODE 95275 • Case size 0805 • High frequency • Dissipation Factor (DF) 0.05 % • Excellent aging characteristics • Stable BP dielectric • Made with a combination of design, materials and tight process controls to achieve very high field reliability • Tin/Lead ("Z" termination code) available 	0805	BP	50	250	1.0 PF	100 PF
DSCC 05002	FEATURES <ul style="list-style-type: none"> • US defense supply center approved • Federal stock control number CAGE CODE 95275 • Case size 0603 • High frequency • Dissipation Factor (DF) 0.05 % • Excellent aging characteristics • Stable BP dielectric • Made with a combination of design, materials and tight process controls to achieve very high field reliability • Tin/Lead ("Z" termination code) available 	0603	BP	50	250	1.0 pF	100 pF
DSCC 05003	FEATURES <ul style="list-style-type: none"> • US defense supply center approved • Federal stock control number CAGE CODE 95275 • Case size 0402 • High frequency • Dissipation Factor (DF) 0.05 % • Excellent aging characteristics • Stable BP dielectric • Made with a combination of design, materials and tight process controls to achieve very high field reliability • Tin/Lead ("Z" termination code) available 	0402	BP	50	100	1.0 pF	27 pF
DSCC 05006	FEATURES <ul style="list-style-type: none"> • US defense supply center approved • Federal stock control number CAGE CODE 95275 • Case size 0805 • Excellent aging characteristics • Stable BP, BR and BX dielectrics • Made with a combination of design, materials and tight process control to achieve very high field reliability • Tin/Lead ("Z" and "U" termination codes) available 	0805	BP	10	100	0.5 pF	3.3 nF
			BR			150 pF	0.10 μF
			BX			150 pF	0.10 μF

Multilayer Ceramic Chip Capacitors



Vishay

Series	Description	Case Size	T.C. and Dielectric	Voltage		Capacitance	
				(Min V)	(Max V)	(Min)	(Max)
Surface-Mount Multilayer Ceramic Chip Capacitors							
DSCC 05007	FEATURES <ul style="list-style-type: none"> • US defense supply center approved • Federal stock control number CAGE CODE 95275 • Case size 1206 • Excellent aging characteristics • Stable BP, BR and BX dielectrics • Made with a combination of design, materials and tight process control to achieve very high field reliability • Tin/Lead (“Z” and “U” termination codes) available 	1206	BP	16	200	0.5 pF	6.8 nF
			BR			100	1 nF
			BX				
MIL-PRF-55681 (CDR)	FEATURES <ul style="list-style-type: none"> • Military qualified products • Federal stock control number CAGE CODE 95275 • High reliability tested per MIL-PRF-55681 • Tin/Lead “Z” and “U” termination codes available • Lead (Pb)-free applied for “Y” and “M” termination code 	CDR01 (0805)	BP	50	100	100 pF	180 pF
			BX			220 pF	4700 pF
		CDR02 (1805)	BP			270 pF	
			BX			3900 pF	22 nF
		CDR03 (1808)	BP			330 pF	1000 pF
			BX			12 nF	68 nF
		CDR04 (1812)	BP			1200 pF	3300 pF
			BX			39 nF	0.18 μF
		CDR06 (2225)	BX			0.39 μF	0.47 μF
		CDR31 (0805)	BP			1 pF	680 pF
			BX			470 pF	18 nF
		CDR32 (1206)	BP			1 pF	2200 pF
			BX			4700 pF	39 nF
		CDR33 (1210)	BP			1000 pF	3300 pF
			BX			15 nF	0.10 μF
		CDR34 (1812)	BP			2200 pF	10 nF
			BX			27 nF	0.18 μF
		CDR35 (1825)	BP			4700 pF	0.22 μF
BX	0.56 μF		0.47 μF				



Series	Description	Case Size	T.C. and Dielectric	Voltage		Capacitance				
				(Min V)	(Max V)	(Min)	(Max)			
Surface-Mount Multilayer Ceramic Chip Capacitors										
VJ High Rel COG (NPO)	FEATURES <ul style="list-style-type: none"> Surface-mount, precious metal technology, wet build process Made with a combination of design, materials and tight process control to achieve very high field reliability Periodic testing to MIL-PRF-55681 guidelines to maintain a high level of quality Available with group A and C screening, process code "2L" Available with group A screening only, process code "68" Available with Voltage Conditioning only, process code "5G" Customized certification available on request to meet your quality requirements Available with tin-lead barrier terminations order code "L" 100% voltage conditioned APPLICATIONS <ul style="list-style-type: none"> Implantable medical devices System critical capacitor applications in non-implantable medical devices Mission critical military, aerospace and space applications 	0402	COG (NPO)	10	100	0.5 pF	180 pF			
		0603			200		1.8 nF			
		0805			500		3.3 nF			
		1206		16	600	10 nF				
		1210		25	500	10 pF	12 nF			
		1808				22 pF	10 nF			
		1812				47 pF	18 nF			
		1825				100 pF	39 nF			
		2220					47 nF			
		2225				120 pF	56 nF			
		VJ High Rel X7R/X5R		FEATURES <ul style="list-style-type: none"> Surface-mount, precious metal technology, wet build process Made with a combination of design, materials and tight process control to achieve very high field reliability Periodic testing to MIL-PRF-55681 guidelines to maintain a high level of quality (life at elevated ambient temperature X5R at +85 °C) Available with group A and C screening, process code "2L" Available with group A screening only, process code "68" Available with Voltage Conditioning only, process code "5G" Customized certification available on request to meet your quality requirements Available with tin-lead barrier terminations order code "L" 100% voltage conditioned APPLICATIONS <ul style="list-style-type: none"> Implantable medical devices System critical capacitor applications in non-implantable medical devices Mission critical military, aerospace and space applications 	0402	X5R / X7R	6.3	100	100 pF	0.1 μF
					0603	X5R / X7R			270 pF	0.15 μF
0805	X7R		10		200	390 pF	0.39 μF			
1206	X7R		500		16	680 pF	1 μF			
1210						1 nF				
1808					1 nF	0.27 μF				
1812					3.9 nF	1 μF				
1825					25	10 nF	2.7 μF			
2220							1.8 μF			
2225	27 nF		4.7 μF							
3640			6.8 μF							



Series	Description	Case Size	T.C. and Dielectric	Voltage		Capacitance			
				(Min V)	(Max V)	(Min)	(Max)		
Surface-Mount Multilayer Ceramic Chip Capacitors									
VJ31/VJ34 Automotive	FEATURES <ul style="list-style-type: none"> NPO: ± 30 ppm/$^{\circ}\text{C}$ from -55 $^{\circ}\text{C}$ to $+125$ $^{\circ}\text{C}$ AECQ200/TS 16949 qualified Operating temperature: -55 $^{\circ}\text{C}$ to $+150$ $^{\circ}\text{C}$, above $+125$ $^{\circ}\text{C}$ with derating Low Dissipation Factor (DF) Ideal for critical timing and tuning applications Ideal for snubber and surge suppression applications Protective surface coating of high voltage capacitors maybe required to prevent surface arcing Surface mount, precious metal technology, wet build process <p>* For 1812 - 1000 V / 3000 V, please contact MLCC@Vishay.com</p>	0402	COG (NPO)	50	25	100	1 pF	220 pF	
		0603			200	1 pF	680 pF		
		0805			500	1 pF	3.9 nF		
		1206			630	1 pF	10 nF		
		1210				100 pF	22 nF		
		1812			3000	12 pF	120 pF		
	FEATURES <ul style="list-style-type: none"> X8R: ± 15 % from -55 $^{\circ}\text{C}$ to $+150$ $^{\circ}\text{C}$, with 0 Vdc applied AECQ200/TS 16949 qualified High operating temperature dielectric up to $+150$ $^{\circ}\text{C}$ without derating Ideal for decoupling and filtering Ideal for extreme environments such as "under the hood" applications Surface mount, precious metal technology, wet build process 	0603	X8R	25	50		680 pF	33 nF	
		0805					470 pF	100 nF	
		1206					2.2 nF	220 nF	
		1210					10 nF	390 nF	
	FEATURES <ul style="list-style-type: none"> X7R: ± 15 % from -55 $^{\circ}\text{C}$ to $+125$ $^{\circ}\text{C}$, 0 Vdc applied X5R: ± 15 % from -55 $^{\circ}\text{C}$ to $+85$ $^{\circ}\text{C}$, 0 Vdc applied AECQ200/TS 16949 qualified Operating temperature: -55 $^{\circ}\text{C}$ to $+150$ $^{\circ}\text{C}$, above $+125$ $^{\circ}\text{C}$ with derating Excellent aging characteristics Ideal for decoupling and filtering Ideal for surge suppression and high voltage applications Wide range of case sizes, voltage ratings and capacitance values Protective surface coating of high voltage capacitors maybe required to prevent surface arcing Surface mount, precious metal technology, wet build process <p>* For 1812 - 1000 V, please contact MLCC@Vishay.com</p>	0402	X7R		16	100	120 pF	33 nF	
		0603			16	150 nF			
		0805	X5R / X7R	10	200	330 pF	630	120 pF	1 μF
		1206	X7R	16	390 pF	1 μF			
		1210		16	10 nF	1 μF			
1812		50		1000	10 nF	1 μF			



Series	Description	Case Size	T.C. and Dielectric	Voltage		Capacitance					
				(Min V)	(Max V)	(Min)	(Max)				
Surface-Mount Multilayer Ceramic Chip Capacitors											
VJ BX Dielectric	FEATURES <ul style="list-style-type: none"> Designed for excellent T/VCC Temperature voltage coefficient (T/VCC) does not exceed -25 % at rated voltage Excellent aging characteristics Surface mount, precious metal technology, wet build process 	0402	BX	25	50	100 pF	3.9 nF				
		0603				390 pF	15 nF				
		0805			100		0.1 μF				
		1206				1 nF	0.33 μF				
		1210				10 nF	0.56 μF				
		1808					0.27 μF				
		1812				22 nF	0.47 μF				
		1825				33 nF	1 μF				
		2220						0.1 μF			
		2225				50	56 nF	2.7 μF			
VJ COG (NP0)	FEATURES <ul style="list-style-type: none"> COG is an ultra-stable dielectric offering a Temperature Coefficient of Capacitance (TCC) of 0 ± 30 ppm/°C Low Dissipation Factor (DF) Ideal for critical timing and tuning applications Ideal for snubber and surge suppression applications Protective surface coating of high voltage capacitors maybe required to prevent surface arcing Surface mount, precious metal technology, wet build process 	0402	COG (NP0)	50	25	100	220 pF				
		0603				200	1 pF	680 pF			
		0805			500			3.9 nF			
		1206				630	10 nF				
		1210			1000		10 pF	12 nF			
		1808				1000	10 nF				
		1812			500		68 pF	22 nF			
		1825				1000	100 pF	39 nF			
		2220			1000		2.2 nF	33 nF			
		2225			500	100 pF	56 nF				
		VJ X7R Dielectric			FEATURES <ul style="list-style-type: none"> General purpose dielectric Excellent aging characteristics Ideal for decoupling and filtering Ideal for surge suppression and high voltage applications Wide range of case sizes, voltage ratings and capacitance values Protective surface coating of high voltage capacitors maybe required to prevent surface arcing Surface mount, precious metal technology, wet build process 	0402	X7R	16	100	120 pF	47 nF
						0603				200	330 pF
0805	10		1 μF								
1206				16		630		680 pF			
1210	50		390 pF								
1808			1000	470 pF		270 nF					
1812	25			1.0 nF		1 μF					
1825			50	15 nF		2.7 μF					
2220	500			1.8 μF							
2225			1000	33 nF		4.7 μF					
3640	25			500		27 nF		6.5 μF			
VJ High Q Dielectric	FEATURES <ul style="list-style-type: none"> COG is an ultra-stable dielectric offering a Temperature Coefficient of Capacitance (TCC) of 0 ± 30 ppm/°C over the entire temperature range Low Dissipation Factor (DF) Surface mount, precious metal technology, wet build process APPLICATIONS <ul style="list-style-type: none"> Ideal for critical timing applications Ideal for tuning applications 	0603	High Q	50	100	1 pF	100 pF				
		0805					200	220 pF			

Multilayer Ceramic Chip Capacitors



Vishay

Series	Description	Case Size	T.C. and Dielectric	Voltage		Capacitance		
				(Min V)	(Max V)	(Min)	(Max)	
Surface-Mount Multilayer Ceramic Chip Capacitors								
VJ High Temperature X8R Dielectric	FEATURES <ul style="list-style-type: none"> Surface mount, precious metal technology, wet build process High operating temperature dielectric, up to +150 °C Maintain capacity at high temperature for frequency stability APPLICATIONS <ul style="list-style-type: none"> Deep hole drilling electronics Ideal for extreme environments such as “under the hood” applications in automotive 	0603	X8R	25	50	680 pF	18 nF	
		0805				470 pF	68 nF	
		1206				2.2 nF	0.22 µF	
		1210				10 nF	0.39 µF	
VJ OMD - COG (NP0)	FEATURES <ul style="list-style-type: none"> Surface mountable. Precious metal technology, wet build process OMD-Cap (Open Mode Design) reduce the risk of shorts or low IR because of board flex cracks High frequency filtering for switching power supplies Available with 100 % voltage condition, process code “5H” is available for 630 V and lower (*) Available with polymer termination for increase resistance to board flex cracking Protective surface coating high voltage capacitors maybe required to prevent surface arcing APPLICATIONS <ul style="list-style-type: none"> Input filter capacitors Output filter capacitors Snubber capacitors reduce MOSFET voltage spikes Lighting ballasts 	1206	COG (NP0)	50	1500	10 pF	4.7 nF	
		1210					8.2 nF	
		1808				18 nF		
		1812			3000	33 pF	33 nF	
		1825						
		2220				1000	270 pF	39 nF
		2225						
VJ OMD - X7R	FEATURES <ul style="list-style-type: none"> Surface mountable, precious metal technology, wet build process. OMD-Cap (Open Mode Design) reduce the risk of short or low IR because of board flex cracks Efficient low-power consumption, ripple current capable to 1.2 Arms at 100 kHz High voltage breakdown compared to standard design Available with 100 % voltage condition, process code “5H” (is available for 630 V and lower (*) Excellent reliability and thermal shock performance Available with polymer termination for increase resistance to board flex cracking Protective surface coating of high voltage capacitors maybe required to prevent surface arcing APPLICATIONS <ul style="list-style-type: none"> Ideal for Power Supplies 	0805	X7R	16	630	470 pF	0.22 µF	
		1206					2000	270 pF
		1210				390 pF		1 µF
		1808		3000	220 pF	18 nF		
		1812			50	100 pF	1.2 µF	
		1825		100	1000	10 nF	1.5 µF	
		2220		50	3000	1 nF	1.8 µF	
		2225						100



Series	Description	Case Size	T.C. and Dielectric	Voltage		Capacitance	
				(Min V)	(Max V)	(Min)	(Max)
Surface-Mount Multilayer Ceramic Chip Capacitors							
VJ RuGGed Chip	FEATURES <ul style="list-style-type: none"> Rugged, surface-mountable, multilayer ceramic capacitors, made with Advanced X7R dielectric Efficient low-power consumption, ripple current capable to 1.2 Arms at 100 kHz High voltage breakdown compared to standard design Excellent reliability and thermal shock performance Surface mount, precious metal technology, wet build process APPLICATIONS <ul style="list-style-type: none"> Ideal for power supplies input/output filters 	1206	X7R	50	630	5.6 nF	220 nF
		1210				10 nF	1.0 μF
		1812				1 nF	1.2 μF
		1825		100	500	0.1 μF	1.5 μF
		2220					
		2225				630	1.8 μF
VJ Tip-N-Ring	FEATURES <ul style="list-style-type: none"> Replaces high voltage, leaded, film capacitors Rated for telecommunications voltages Saves board space and weight Surface mountable, precious metal technology, wet build process Wide band operation, excellent high frequency filtering APPLICATIONS <ul style="list-style-type: none"> Ideal for telephone line (Tip 'N Ring®) filtering Voice over Internet (VOI) cards 	1812	X7R	250	250	0.1 μF	0.47 μF
		1825				0.15 μF	1 μF
		2225				33 nF	
VJ X7R, VTOP (Low Profile)	FEATURES <ul style="list-style-type: none"> Ideal for "low headroom" (i.e under IC) applications. VTOP product available in 0.022" [0.56 mm] and 0.026" [0.66 mm] maximum thickness. Surface mount, precious metal technology, wet build process 	0603	X7R	25	50	470 pF	27 nF
		0805					0.1 μF
		1206				1 nF	0.18 μF
		1210				10 nF	0.27 μF
VJ0508/ VJ0612	FEATURES <ul style="list-style-type: none"> Surface mount, precious metal technology, wet build process Low inductance, typically half the inductance of standard product Reduces AC noise in multi-chip modules (MCM) Low profile, robust device for easy mounting 	0508	X7R	10	25	220 pF	0.1 μF
		0612		16	50	8.2 nF	0.33 μF

Multilayer Ceramic Chip Capacitors



Vishay

Series	Description	Case Size	T.C. and Dielectric	Voltage		Capacitance	
				(Min V)	(Max V)	(Min)	(Max)
Surface-Mount Multilayer Ceramic Chip Capacitors							
VJ...W1BC	FEATURES <ul style="list-style-type: none"> Commercial Grade Ultra stable class 1 dielectric Four standard sizes High capacitance per unit volume Supplied in tape on reel For high frequency applications Ni-barrier with 100 % tin terminations Dry sheet manufacturing technology APPLICATIONS <ul style="list-style-type: none"> Consumer electronics Telecommunications Data processing 	0402	COG (NP0)	10	50	0.5 pF	470 pF
		0603			3.3 nF		
		0805			100	12 nF	
		1206			1.5 pF	39 nF	
VJ...W1BC X5R Dielectric	FEATURES <ul style="list-style-type: none"> Commercial Grade Class 2 dielectric Four standard sizes High capacitance per unit volume Supplied in tape and reel Ni-barrier with 100 % tin terminations Dry sheet technology process APPLICATIONS <ul style="list-style-type: none"> Consumer electronics Telecommunications Mobile application Data processing 	0402	X5R	10	16	47 nF	0.1 μF
		0603		6.3	25	0.27 μF	1 μF
		0805				2.2 μF	4.7 μF
		1206		10 μF			
VJ...W1BC X7R Dielectric	FEATURES <ul style="list-style-type: none"> Commercial Grade Stable class 2 dielectric Four standard sizes High capacitance per unit volume Supplied in tape on reel For high frequency applications Ni-barrier with 100 % tin terminations APPLICATIONS <ul style="list-style-type: none"> Consumer electronics Telecommunications Data processing 	0402	X7R	10	50	100 pF	0.1 μF
		0603			1 μF		
		0805			100	4.7 μF	
		1206			4.7 μF		

(*) Contact mlcc.specials@vishay.com for higher voltages.



Series	Description	Case Size	T.C. and Dielectric	Voltage		Capacitance	
				(Min V)	(Max V)	(Min)	(Max)
Surface-Mount Multilayer Ceramic Chip Capacitors							
VJ...W1BC Y5V Dielectric	FEATURES <ul style="list-style-type: none"> Commercial Grade Class 3 dielectric Four standard sizes High capacitance per unit volume Supplied in tape on reel For high frequency applications Ni-barrier with 100 % tin terminations Dry sheet technology process APPLICATIONS <ul style="list-style-type: none"> Consumer electronics Telecommunications Data processing Mobile applications 	0402	Y5V	6.3	50	10 nF	1 μ F
		0603					2.2 μ F
		0805					10 μ F
		1206					22 μ F
VJ...W1BC High Q	FEATURES <ul style="list-style-type: none"> Commercial Grade Ultra stable class 1 dielectric High Q and low ESR at high frequency Four standard sizes High capacitance per unit volume Supplied in tape on reel For high frequency applications Ni-barrier with 100 % tin terminations Dry sheet manufacturing technology APPLICATIONS <ul style="list-style-type: none"> Mobile telecommunication WLAN RF modules Tuner 	0402	High Q	16	50	0.5 pF	470 pF
		0603					25
VJ0201... W1BC COG (NP0), X5R, X7R, Y5V	FEATURES <ul style="list-style-type: none"> Commercial Grade High Capacitance in unit size High precision dimensional tolerances Suitably used in high-accuracy automatic mounting machine Dry sheet manufacturing technology APPLICATIONS <ul style="list-style-type: none"> Miniature microwave module Portable equipment - Mobile phone, PDA High frequency circuits 	0612	COG (NP0)	50	50	10 pF	470 pF
			X7R	16		180 pF	0.1 μ F
			Y5V	50		100 nF	
VJ06C4... W1BC Array	FEATURES <ul style="list-style-type: none"> Commercial Grade High density mounting due to mounting space saving Mounting cost saving Increased throughput Dry sheet manufacturing technology APPLICATIONS <ul style="list-style-type: none"> For use as a bypass for digital and analog signal line noise Computer motherboards and peripherals The common electronic circuits 	0612	COG (NP0)	50	50	10 pF	470 pF
			X7R	16		180 pF	0.1 μ F
			Y5V	50		100 nF	

Multilayer Ceramic Chip Capacitors



Vishay

VJ0805	Y	102	K	X	A	A	C	31
Case Code	Dielectric	Capacitance Nominal Code	Tolerance Code	Termination	DC Voltage Rating	Marking Option	Packaging	Process Code
0201	A = COG (NPO)	Expressed in picofarad (pF). The first two digits are significant, the third is a multiplier. An "R" indicates a decimal point. Example: 4R7 = 4.7 pF 102 = 1000 pF 473 = 47000 pF	B = ± 0.10 pF C = ± 0.25 pF D = ± 0.50 pF F = $\pm 1\%$ G = $\pm 2\%$ J = $\pm 5\%$ K = $\pm 10\%$ M = $\pm 20\%$ Z = - 20%/+ 80% Note : NPO(COG): B,C,D < 10pF F,G,J,K ≥ 10 pF X7R: J,K,M Y5V: Z, M	X = Ni barrier 100% tin plate matte finish F = AgPd L = Ni barrier tin/lead plate min 4% lead B = Polymer 100% tin plate matte finish	S = 4V	A = unmarked M = marked Vendor ID + 2 character cap code B = marking for Automotiv VJ...31 Vendor ID + Date Code NOTE : Marking suffix: - only size 0805 and 1206 - is not available in process code W1BC	T = 7" reel / plastic tape C = 7" reel / paper tape O = 7" reel / flamed paper tape used for AgPd termination E = 7" reel / plastic tape only used Automotive VJ...31/ VJ...34 R = 11¼" / 13" reel / plastic tape P = 11¼" / 13" reel / paper tape I = 11¼" / 13" reel / flamed paper tape used for AgPd termination M = 11¼" / 13" reel / plastic tape only used Automotive VJ...31/ VJ...34	00, 54, 3L, 3P = Standard 31, 34 = Automotive 4X, 5H = Open Mode 5Z = HV ArcGuard® 3E = Rugged Chip 3T = Tip N' Ring 2L, 68, 5G = High Rel W1BC = Basic Commodity
0402	Y = X7R							
0508	G = X5R							
0603	X = BX							
0612	H = X8R							
0805	Q = High Q							
1206	V = Y5V							
1210								
1808								
1812								
1825								
2220								
2225								
3640								



Links and Promotional Information

PRODUCT SHEETS

COMMODITY APPLICATIONS:

VJ....W1BC NP0 Dielectric:	http://www.vishay.com/docs/49256/vmn-pt90.pdf
VJ....W1BC X5R Dielectric:	http://www.vishay.com/docs/49254/vmn-pt9090.pdf
VJ....W1BC X7R Dielectric:	http://www.vishay.com/docs/49253/vmn-pt90.pdf
VJ....W1BC Y5V Dielectric:	http://www.vishay.com/docs/49255/vmn-pt90.pdf
VJ....W1BC High Q:	http://www.vishay.com/docs/49751/49751.pdf
VJ0201....W1BC:	http://www.vishay.com/docs/49706/49706.pdf
VJ06C4....W1BC Chip Array:	http://www.vishay.com/docs/49714/49714.pdf

HIGH VOLTAGE APPLICATIONS:

HVArc Guard®:	http://www.vishay.com/docs/49667/vmn-pt0069.pdf
---------------	---

BOARDFLEX SENSITIVE APPLICATIONS:

VJ OMD Series:	http://www.vishay.com/docs/49614/vmn-pt00.pdf
----------------	---

TECH NOTES

HVArc Guard®:

Technical Information:	http://www.vishay.com/docs/45062/tn0031.pdf
Low-Power Voltage Multiplier Application:	http://www.vishay.com/docs/45058/hvarc.pdf
Passive Snubber Application:	http://www.vishay.com/docs/45059/anhvarc.pdf
Light Ballast Application:	http://www.vishay.com/docs/45060/anpreven.pdf

VISHAY VITRAMON END TERMINATION:

<http://www.vishay.com/docs/49599/TN0029.pdf>

SPICE MODEL

Spice Model Program:	http://www.vishay.com/capacitors/mlcc-list/
----------------------	---

LEAD (PB)-FREE INFORMATION

How to get Lead (Pb)-free:	http://www.vishay.com/how/leadfree
Capacitor Lead (Pb)-free Matrix:	http://www.vishay.com/docs/49322/capacito.xls

SEMICONDUCTORS:

Rectifiers • High-Power Diodes and Thyristors • Small-Signal Diodes • Zener and Suppressor Diodes • FETs • RF Transistors • Optoelectronics • ICs • Modules and Assemblies

PASSIVE COMPONENTS:

Resistive Products • Magnetics • Capacitors • Strain Gage Transducers and Stress Analysis Systems



One of the World's Largest Manufacturers of
Discrete Semiconductors and Passive Components

WORLDWIDE SALES CONTACTS

THE AMERICAS

UNITED STATES

VISHAY AMERICAS
ONE GREENWICH PLACE
SHELTON, CT 06484
UNITED STATES
PH: +1-402-563-6866
FAX: +1-402-563-6296

ASIA

SINGAPORE

VISHAY INTERTECHNOLOGY ASIA PTE LTD.
25 TAMPINES STREET 92
KEPPEL BUILDING #02-00
SINGAPORE 528877
PH: +65-6788-6668
FAX: +65-6788-0988

P.R. CHINA

VISHAY TRADING (SHANGHAI) CO., LTD.
15D, SUN TONG INFOPORT PLAZA
55 HUAI HAI WEST ROAD
SHANGHAI 200030
P.R. CHINA
PH: +86-21-5258 5000
FAX: +86-21-5258 7979

JAPAN

VISHAY JAPAN CO., LTD.
MG IKENOHATA BLDG. 4F
1-2-18, IKENOHATA
TAITO-KU
TOKYO 110-0008
JAPAN
PH: +81-3-5832-6210
FAX: +81-3-5832-6260

EUROPE

GERMANY

VISHAY ELECTRONIC GMBH
GEHEIMRAT-ROSENTHAL-STR. 100
95100 SELB
GERMANY
PH: +49-9287-71-0
FAX: +49-9287-70435

FRANCE

VISHAY S.A.
199, BLVD DE LA MADELEINE
06003 NICE, CEDEX 1
FRANCE
PH: +33-4-9337-2920
FAX: +33-4-9337-2997

UNITED KINGDOM

VISHAY LTD.
PALLION INDUSTRIAL ESTATE
SUNDERLAND SR4 6SU
UNITED KINGDOM
PH: +44-191-514-4155
FAX: +44-191-567-8262

