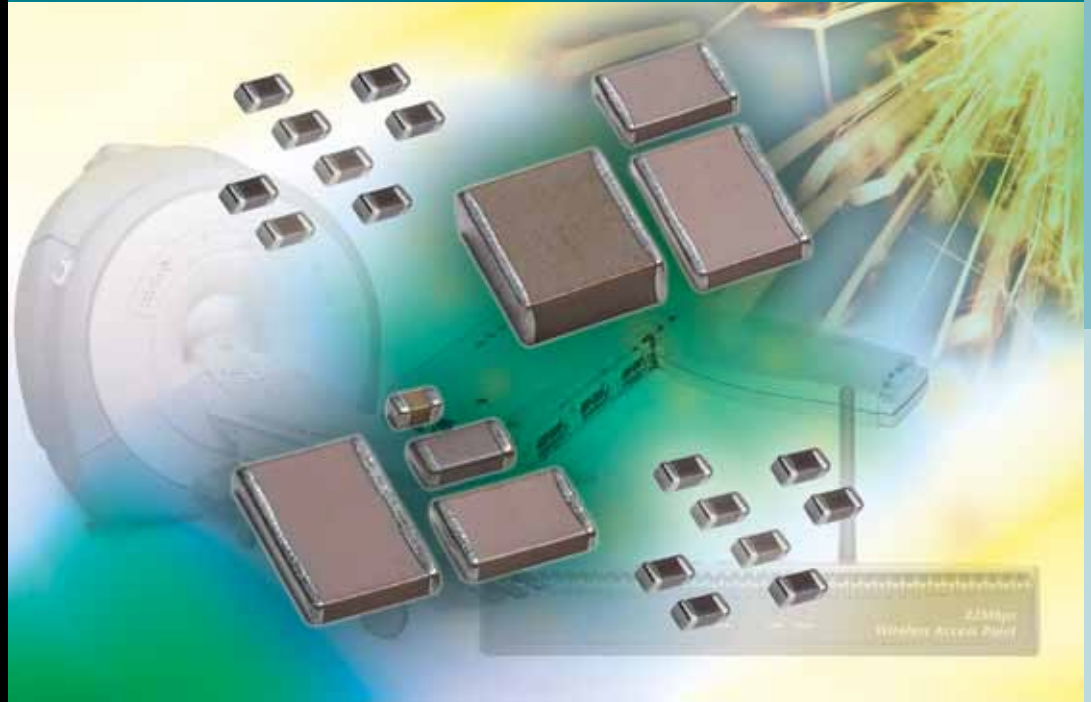




MULTILAYER CERAMIC CHIP CAPACITORS



Products:

- Basic Commodity (BME/NME Technology)
- Commercial (NME Technology)
- Automotive
- Board Flex Sensitive Including Polymer Termination
- Surface Arc-Over Prevention for High Voltage
- Non-Magnetic Series
- 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 (TRANZORB®, Automotive, ESD, Arrays)

FETs

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

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

MODULES

- Power Modules (contain power diodes, thyristors, MOSFETs, IGBTs)

PASSIVE COMPONENTS

RESISTIVE PRODUCTS

- 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

Multilayer Ceramic Chip Capacitors Selector Guide

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Multilayer Ceramic Chip Capacitors

Vishay

Series	Description	Case Size	TC and Dielectric	Voltage		Capacitance			
				[Min. V]	[Max. V]	[Min.]	[Max.]		
Capacitors - MLCC									
VJ HVArc Guard®	FEATURES <ul style="list-style-type: none"> • Surface-mount multilayer ceramic chip capacitors • Prevents surface arc-over in high-voltage applications • Higher capacitance and smaller case sizes • Voltage breakdown as much as twice that of competitors' products • Available with polymer terminations in X7R for increased resistance to board flex cracking • Wet build process • Reliable Noble Metal Electrode (NME) system • Worldwide patent technology APPLICATIONS <ul style="list-style-type: none"> • DC/DC converters (buck and boost) • Voltage multipliers for flyback converters • Power supplies 	0805	COG (NP0)	1000	1500	10 pF	430 pF		
		1206					1.5 nF		
		1210					2.7 nF		
		2220				470 pF	5.6 nF		
		2225					8.2 nF		
		0805	X7R	630	1000	100 pF	3.2 nF		
		1206		250			47 nF		
		1210					82 nF		
		1808					100 nF		
		1812					270 nF		
		VJ Non-Magnetic	FEATURES <ul style="list-style-type: none"> • Surface-mount multilayer ceramic chip capacitors • Manufactured with non-magnetic materials • Safety screened for magnetic properties • Wet build process • Reliable Noble Metal Electrode (NME) system APPLICATIONS <ul style="list-style-type: none"> • Magnetic Resonance Imaging (MRI) • Medical test and diagnostic equipment • Navigation and electronic test equipment • Audio amplifiers 	0402	COG (NP0)	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			12 nF		
1808				3000			10 pF	10 nF	
1812				1000			15 pF	22 nF	
1825								39 nF	
2220				100 pF			47 nF		
2225				120 pF			56 nF		
0402				X5R	6.3	16	27 nF	100 nF	
0603						6.3	120 nF	150 nF	
0402	X7R			6.3	100	100 pF	22 nF		
0603						270 pF	100 nF		
0805				10	200	390 pF	390 nF		
1206				16	500	680 pF	1.0 μF		
1210						1.0 nF	1.0 μF		
1808				25	3000	220 pF	270 nF		
1812						270 pF	1.0 μF		
1825					1000	10 nF	2.7 μF		
2220					3000	1.0 nF	2.2 μF		
2225					2000	5.6 nF	4.7 μF		
3640	500				15 nF	6.8 μF			

Multilayer Ceramic Chip Capacitors



Vishay

Series	Description	Case Size	TC and Dielectric	Voltage		Capacitance					
				[Min. V]	[Max. V]	[Min.]	[Max.]				
VJ 31/34 Automotive Series	FEATURES <ul style="list-style-type: none"> • Surface-mount multilayer ceramic chip capacitors • AEC-Q200 qualified with PPAP available • C0G (NP0) offers ultra stable dielectric and low power dissipation factor • X7R operating temperature up to + 150 °C, above + 125 °C with derating • X8R maintains capacitance at high temperature • AgPd terminations available for silver epoxy bonding • Polymer terminations in X7R/X5R/X8R available for increased resistance to board flex cracking • Wet build process • Reliable Noble Metal Electrode (NME) system APPLICATIONS <ul style="list-style-type: none"> • Timing and tuning circuits • Filtering and decoupling • Sensor and scanner applications • Power supplies 	0402	C0G (NP0)	25	100	1.0 pF	220 pF				
		0603		50	50		200	820 pF			
		0805					500	3.9 nF			
		1206					630	10 nF			
		1210					3000	100 pF	22 nF		
		1812						12 pF			
		0805	X5R			10	10	560 nF	1.0 μF		
		0402	X7R	16	16	100	120 pF	47 nF			
		0603				200	150 nF				
		0805				500	330 pF	470 nF			
		1206				630	220 pF	1.0 μF			
		1210					390 pF				
		1812					10 nF				
		0603					25		50	470 pF	33 nF
		0805				100 nF					
		1206				1.0 nF		220 nF			
		1210				10 nF		390 nF			
1206	C0G (NP0)	50	50	1500	10 pF	4.7 nF					
1210				2000		8.2 nF					
1808				3000		18 nF					
1812				1000	15 pF	33 nF					
1825					270 pF	39 nF					
2220					47 nF						
2225				X7R	16	16	630	470 pF	220 nF		
0805							2000	270 pF	680 nF		
1206								390 pF	1.0 μF		
1210								630	220 pF	18 nF	
1808							3000	50	100 pF	1.2 μF	
1812								100	2000	5.6 nF	1.5 μF
1825								50	3000	1.0 nF	1.8 μF
2220							100	2000	5.6 nF		
2225											



Multilayer Ceramic Chip Capacitors

Vishay

Series	Description	Case Size	TC and Dielectric	Voltage		Capacitance		
				[Min. V]	[Max. V]	[Min.]	[Max.]	
VJ Commercial Series	<p>FEATURES</p> <ul style="list-style-type: none"> • Surface-mount multilayer ceramic chip capacitors • COG (NP0) offers ultra stable dielectric and low dissipation • Polymer terminations available with X7R for board flex requirements • AgPd terminations available for silver epoxy bonding • Wet build process • Reliable Noble Metal Electrode (NME) system <p>APPLICATIONS</p> <ul style="list-style-type: none"> • Timing and tuning circuits • Filtering and decoupling • Sensor and scanner applications • Surge suppression • Power supplies 	0402	COG (NP0)	25	100	1.0 pF	220 pF	
		0603		50	200		820 pF	
		0805			500			3.9 nF
		1206			630		10 nF	
		1210			56 pF	22 nF		
		1808			1000	18 pF	10 nF	
		1812			39 pF	22 nF		
		1825		500	100 pF	39 nF		
		2220		1000	270 pF	47 nF		
		2225		56 nF				
		0805	X5R	10	10	560 nF	1.0 μF	
		0402	X7R	16	100	120 pF	47 nF	
		0603				200	150 nF	
		0805				250	330 pF	470 nF
		1206				630	1.0 μF	
		1210		390 pF	1.0 μF			
		1808		50	1000	470 pF	270 nF	
		1812		25		1.0 nF	1.0 μF	
		1825		10 nF		2.7 μF		
		2220		50	500	15 nF	2.2 μF	
		2225		25	1000	33 nF	4.7 μF	
		3640	25	500	27 nF	6.8 μF		
		VJ High Q Dielectric Commercial Series	<p>FEATURES</p> <ul style="list-style-type: none"> • Surface-mount multilayer ceramic chip capacitors • High Q at high frequencies • Low ESR and dissipation factor • AgPd terminations available for silver epoxy bonding • Wet build process • Reliable Noble Metal Electrode (NME) system <p>APPLICATIONS</p> <ul style="list-style-type: none"> • Timing and tuning circuits • Filtering and decoupling • Sensor applications 	0603	High-Q COG (NP0)	50	100	1.0 pF
0805	200			220 pF				

Multilayer Ceramic Chip Capacitors



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Series	Description	Case Size	TC and Dielectric	Voltage		Capacitance		
				[Min. V]	[Max. V]	[Min.]	[Max.]	
VJ High Temperature X8R Dielectric	FEATURES <ul style="list-style-type: none"> • Surface-mount multilayer ceramic chip capacitors • High operating temperature dielectric • Maintains capacitance at high temperature • AgPd terminations available for silver epoxy bonding • Wet build process • Reliable Noble Metal Electrode (NME) system APPLICATIONS <ul style="list-style-type: none"> • High-temperature modules 	0603	X8R	25	50	470 pF	33 nF	
		0805					100 nF	
		1206				1.0 nF	220 nF	
		1210				10 nF	390 nF	
VJ Hi Rel Series	FEATURES <ul style="list-style-type: none"> • Surface-mount multilayer ceramic chip capacitors • MIL-PRF 55681 qualified production line • Available with group A and C screening • Available with only group A screening • Available with only voltage conditioning • Available with tin-lead terminations (min. 4 % lead) • AgPd terminations available for silver epoxy bonding • Customized testing and certification available • Wet build process • Reliable Noble Metal Electrode (NME) system APPLICATIONS <ul style="list-style-type: none"> • System critical medical applications • Mission critical military and aerospace applications 	0402	C0G (NP0)	10	500	0.5 pF	180 pF	
		0603					200	1.8 nF
		0805					500	3.3 nF
		1206		16	600		10 nF	
		1210		25	500		12 nF	
		1808					22 pF	10 nF
		1812					47 pF	22 nF
		1825		100 pF	39 nF			
		2220			47 nF			
		2225			120 pF		56 nF	
		0402	X5R	6.3	16	27 nF	100 nF	
		0603				6.3	120 nF	150 nF
		0402				100	100 pF	22 nF
		0603	270 pF	100 nF				
		0805	X7R	10	200	390 pF	390 nF	
		1206				16	500	680 pF
		1210		1.0 nF	270 nF			
		1808		3.9 nF	1.0 μ F			
		1812		25	500	10 nF	2.7 μ F	
		1825					2.2 μ F	
		2220					4.7 μ F	
		2225					6.8 μ F	
		3640		15 nF	6.8 μ F			



Multilayer Ceramic Chip Capacitors

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Series	Description	Case Size	TC and Dielectric	Voltage		Capacitance		
				[Min. V]	[Max. V]	[Min.]	[Max.]	
MIL-PRF-55681 (CDR)	<p>FEATURES</p> <ul style="list-style-type: none"> • Surface-mount multilayer ceramic chip capacitors • Federal stock control number CAGE CODE SHV71 • MIL-PRF 55681 qualified products • High reliability tested per MIL-PRF 55681 • Available with tin-lead terminations (min. 4 % lead) • Available with lead (Pb)-free terminations • Available with AgPd terminations for silver epoxy bonding • Wet build process • Reliable Noble Metal Electrode (NME) system <p>APPLICATIONS</p> <ul style="list-style-type: none"> • Avionic systems • Sonar systems • Satellite systems • Missiles applications • Geographical information system • Global positioning systems 	CDR01 (0805)	BP	100	100	10 pF	180 pF	
			BX	50		120 pF	4.7 nF	
		CDR02 (1805)	BP	100		220 pF	270 pF	
			BX	50		3.9 nF	22 nF	
		CDR03(1808)	BP	100		330 pF	1.0 nF	
			BX	50		12 nF	68 nF	
		CDR04 (1812)	BP	100		1.2 nF	3.3 nF	
			BX	50		39 nF	180 nF	
		CDR06 (2225)	BX	50		50	390 nF	470 nF
		CDR31 (0805)	BP	50		100	1.0 pF	680 pF
			BX		470 pF		18 nF	
		CDR32 (1206)	BP		1.0 pF		2.2 nF	
			BX		4.7 nF		39 nF	
		CDR33 (1210)	BP		1.0 nF		3.3 nF	
			BX		15 nF		100 nF	
		CDR34 (1812)	BP		2.2 nF		10 nF	
			BX		27 nF		180 nF	
		CDR35 (1825)	BP		4.7 nF		22 nF	
BX	56 nF		470 nF					
DSCC 03029	<p>FEATURES</p> <ul style="list-style-type: none"> • Surface-mount multilayer ceramic chip capacitors • Made with a combination of design, materials, and tight process control to achieve very high field reliability • US defense supply center approved • Federal stock control number CAGE CODE SHV71 • Available with tin-lead terminations (min. 4 % lead) • Available with AgPd terminations for silver epoxy bonding • Excellent aging characteristic • Wet build process • Reliable Noble Metal Electrode (NME) system <p>APPLICATIONS</p> <ul style="list-style-type: none"> • Broadband wireless communication • Satellite communication • WiFi (802.11) and WiMax (802.16) • Subscriber based wireless devices • Microwave systems 	0402	BP	100	0.5 pF	180 pF		
			BR	16	50	100 pF	3.9 nF	
			BX					

Multilayer Ceramic Chip Capacitors



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Series	Description	Case Size	TC and Dielectric	Voltage		Capacitance	
				[Min. V]	[Max. V]	[Min.]	[Max.]
DSCC 03028	FEATURES <ul style="list-style-type: none"> • Surface-mount multilayer ceramic chip capacitors • Made with a combination of design, materials, and tight process control to achieve very high field reliability • US defense supply center approved • Federal stock control number CAGE CODE SHV71 • Available with tin-lead terminations (min. 4 % lead) • Available with AgPd terminations for silver epoxy bonding • Excellent aging characteristic • Wet build process • Reliable Noble Metal Electrode (NME) system APPLICATIONS <ul style="list-style-type: none"> • Broadband wireless communication • Satellite communication • WiFi (802.11) and WiMax (802.16) • Subscriber based wireless devices • Microwave systems 	0603	BP	16	100	0.5 pF	1.0 nF
			BR			100 pF	100 nF
			BX				
DSCC 05001 ⁽¹⁾	FEATURES <ul style="list-style-type: none"> • Surface-mount multilayer ceramic chip capacitor in qualification • Made with a combination of design, materials, and tight process control to achieve very high field reliability • US defense supply center approved • Federal stock control number CAGE CODE SHV71 • Available with tin-lead terminations (min. 4 % lead) • Available with AgPd terminations for silver epoxy bonding • Excellent aging characteristic • Wet build process • Reliable Noble Metal Electrode (NME) system APPLICATIONS <ul style="list-style-type: none"> • Broadband wireless communication • Satellite communication • WiFi (802.11) and WiMax (802.16) • Subscriber based wireless devices • Microwave systems 	0805	BP	50	250	1.0 pF	100 pF
DSCC 05002 ⁽¹⁾	FEATURES <ul style="list-style-type: none"> • Surface-mount multilayer ceramic chip capacitor in qualification • Made with a combination of design, materials, and tight process control to achieve very high field reliability • US defense supply center approved • Federal stock control number CAGE CODE SHV71 • Available with tin-lead terminations (min. 4 % lead) • Available with AgPd terminations for silver epoxy bonding • Excellent aging characteristic • Wet build process • Reliable Noble Metal Electrode (NME) system APPLICATIONS <ul style="list-style-type: none"> • Broadband wireless communication • Satellite communication • WiFi (802.11) and WiMax (802.16) • Subscriber based wireless devices • Microwave systems 	0603	BP	50	250	1.0 pF	100 pF

Note

⁽¹⁾ Contact MLCC@Vishay.com for availability



Series	Description	Case Size	TC and Dielectric	Voltage		Capacitance	
				[Min. V]	[Max. V]	[Min.]	[Max.]
DSCC 05003 ⁽¹⁾	FEATURES <ul style="list-style-type: none"> • Surface-mount multilayer ceramic chip capacitor in qualification • Made with a combination of design, materials, and tight process control to achieve very high field reliability • US defense supply center approved • Federal stock control number CAGE CODE SHV71 • Available with tin-lead terminations (min. 4 % lead) • Available with AgPd terminations for silver epoxy bonding • Excellent aging characteristic • Wet build process • Reliable Noble Metal Electrode (NME) system APPLICATIONS <ul style="list-style-type: none"> • Broadband wireless communication • Satellite communication • WiFi (802.11) and WiMax (802.16) • Subscriber based wireless devices • Microwave systems 	0402	BP	50	100	1.0 pF	27 pF
DSCC 05006	FEATURES <ul style="list-style-type: none"> • Surface-mount multilayer ceramic chip capacitor in qualification • Made with a combination of design, materials, and tight process control to achieve very high field reliability • US defense supply center approved • Federal stock control number CAGE CODE SHV71 • Available with tin-lead terminations (min. 4 % lead) • Available with AgPd terminations for silver epoxy bonding • Excellent aging characteristic • Wet build process • Reliable Noble Metal Electrode (NME) system APPLICATIONS <ul style="list-style-type: none"> • Broadband wireless communication • Satellite communication • WiFi (802.11) and WiMax (802.16) • Subscriber based wireless devices • Microwave systems 	0805	BP	10	200	0.5 pF	3.3 nF
			BR				
			BX				
DSCC 05007	FEATURES <ul style="list-style-type: none"> • Surface-mount multilayer ceramic chip capacitor in qualification • Made with a combination of design, materials, and tight process control to achieve very high field reliability • US defense supply center approved • Federal stock control number CAGE CODE SHV71 • Available with tin-lead terminations (min. 4 % lead) • Available with AgPd terminations for silver epoxy bonding • Excellent aging characteristic • Wet build process • Reliable Noble Metal Electrode (NME) system APPLICATIONS <ul style="list-style-type: none"> • Broadband wireless communication • Satellite communication • WiFi (802.11) and WiMax (802.16) • Subscriber based wireless devices • Microwave systems 	1206	BP	16	200	0.5 pF	6.8 nF
			BR				
			BX				

Note
⁽¹⁾ Contact MLCC@Vishay.com for availability

Multilayer Ceramic Chip Capacitors



Vishay

Series	Description	Case Size	TC and Dielectric	Voltage		Capacitance		
				[Min. V]	[Max. V]	[Min.]	[Max.]	
VJ...W1BC Basic Commodity	FEATURES <ul style="list-style-type: none"> Surface-mount multilayer ceramic chip capacitor Ultra stable dielectric COG(NP0) High capacitance per unit volume X5R/X7R/Y5V 100 % matte tin terminations Dry sheet technology process Base Metal Electrode system (BME) Noble Metal Electrode system (NME) for some COG (NP0) values in 0402 APPLICATIONS <ul style="list-style-type: none"> Consumer electronics Telecommunications Mobile applications Data processing 	0402	COG (NP0)	10	100	0.5 pF	470 pF	
		0603					3.3 nF	
		0805					12 nF	
		1206	1.5 pF	X5R	6.3	16	220 nF	39 nF
		0402	47 nF					1.0 μF
		0603	25			2.2 μF		
		0805	10			16	1.5 μF	10 μF
		1206						10 μF
		1210						10 μF
		0402	X7R	10	100	50	100 pF	100 nF
		0603						1.0 μF
		0805				2.2 μF		
		1206				150 pF	10 μF	
		1210				1.0 nF	10 μF	
		0402	Y5V	6.3	50	10 nF	10 nF	1.0 μF
		0603						2.2 μF
		0805			10			10 μF
1206	100	22 μF						
1210	6.3	100 μF						
VJ...W1BC High Q Basic Commodity	FEATURES <ul style="list-style-type: none"> Surface-mount multilayer ceramic chip Capacitor Ultra stable dielectric COG(NP0) High Q and low ESR at high frequency 100 % matte tin terminations Dry sheet technology process Base Metal Electrode system (BME) APPLICATIONS <ul style="list-style-type: none"> Mobile telecommunications WLAN applications RF modules Tuner 	0402	High Q COG (NP0)	16	50	0.5 pF	470 pF	
		0603					100	3.3 nF
VJ...W1BC Ultra High Q/Low ESR Basic Commodity	FEATURES <ul style="list-style-type: none"> Surface-mount multilayer ceramic chip capacitor Ultra stable dielectric COG(NP0) High Q and low ESR at high frequency 100 % matte tin terminations Dry sheet technology process Base Metal Electrode system (BME) APPLICATIONS <ul style="list-style-type: none"> Mobile telecommunications WLAN applications RF modules Tuner 	0201	High Q COG (NP0)	25	25	0.1 pF	18 pF	
		0402					50	22 pF
		0603				250	0.3 pF	47 pF
VJ0201...W1BC Ultra Small Series Basic Commodity	FEATURES <ul style="list-style-type: none"> Surface-mount multilayer ceramic chip capacitor Ultra small size High capacitance per unit volume 100 % matte tin terminations Dry sheet technology process Base Metal Electrode system (BME) Noble Metal Electrode system (NME) for COG (NP0) APPLICATIONS <ul style="list-style-type: none"> Microwave modules Portable equipment (mobile phone, PDA) RF modules 	0201	COG (NP0)	16	50	0.5 pF	100 pF	
			X5R				6.3	100 nF
			X7R				10	10 nF



Series	Description	Case Size	TC and Dielectric	Voltage		Capacitance	
				[Min. V]	[Max. V]	[Min.]	[Max.]
VJ06C4...W1BC MLCC Chip Array Basic Commodity	FEATURES • Surface-mount multilayer ceramic chip array • 4 capacitors per unit • 100 % matte tin terminations • Dry sheet technology process • Base Metal Electrode system (BME) APPLICATIONS • Bypass for digital and analog signal lines • Computer motherboards and peripherals	0612	COG (NP0)	50	50	10 pF	470 pF
			X7R	16		180 pF	100 nF
			Y5V	50		10 nF	

Part Numbering/Ordering Information

PART NUMBERING/ORDERING INFORMATION (7)								
VJ0805	Y	102	K	X	A	A	C	2L
CASE CODE	DIELECTRIC	CAPACITANCE NOMINAL CODE	TOLERANCE CODE (1)	TERMINATION	DC VOLTAGE RATING	MARKING OPTION (2)	PACKAGING	PROCESS CODE
0201	A = C0G (NP0)	Expressed in picofarad (pF). The first two digits are significant, the third is a multiplier. An "R" indicates a decimal point. Example: 0R3 = 0.3 pF 4R7 = 4.7 pF 102 = 1000 pF 473 = 47 000 pF	V = ± 0.05 pF B = ± 0.10 pF C = ± 0.25 pF D = ± 0.50 pF F = ± 1 % G = ± 2 % H = ± 3 % J = ± 5 % K = ± 10 % M = ± 20 % Z = -20 %/+80 %	X = Ni barrier 100 % tin plate matte finish F, E = AgPd (6) L = Ni barrier tin/lead plate min. 4 % lead B = Polymer 100 % tin plate matte finish N = Non-magnetic	S = 4 V	A = Unmarked M = Marking vendor ID + 2 character cap. code (size 0805/1206) B = Marking for automotive VJ...31 vendor ID + date code (size 0805/1206)	T = 7" reel/ plastic tape C = 7" reel/ paper tape O = 7" reel/ flamed paper tape used for AgPd termination 0402/0603/0805 E = 7" reel/ plastic tape only used automotive VJ...31/VJ...34 R = 11 1/4"/13" reel/plastic tape P = 11 1/4"/13" reel/paper tape I = 11 1/4"/13" reel/ flamed paper tape used for AgPd termination 0402/0603/0805 M = 11 1/4"/13" reel/plastic tape only used Automotive VJ...31/VJ...34	00, 54, 3L, 3P, A2 = Standard (3)(4) 31, 34 = Automotive 4X, 5H = Open mode 5Z = HV Arc Guard® 2L, 2M, 68, 5G = High-Rel. W1BC = Basic commodity
0402	Y = X7R							
0603	G = X5R							
06C4 (5)	H = X8R							
0805	Q = High Q							
1206	V = Y5V							
1210	L = Ultra High Q Low ESR							
1808								
1812								
1825								
2220								
2225								
3640								

Notes

- (1) C0G (NP0)/High Q: B, C, D < 10 pF; F, G, J, K 10 pF
Ultra High Q: V, B, C, D 5 pF; B, C, D > 5 pF < 10 pF; F, G, J 10 pF
X5R: K, M
X7R/X8R: J, K, M
Y5V: M, Z
For details, see individual datasheets
- (2) Marking is not available in process code W1BC.
Marking is not available for termination code "F" = AgPd termination
- (3) Phasing out of "3L" and "3P"
- (4) Phasing out of "A2" temporarily used to identify manufacturing plant
- (5) Chip array size 0612 including 4 capacitors
- (6) Termination code "E" for conductive epoxy assembly, contact mlcc@vishay.com for availability
- (7) For details of ratings, see individual datasheet



PART NUMBERING/ORDERING INFORMATION MILITARY PRODUCTS (1)								
CDR31	BX	103	A	K	Z	P	A	T
MILITARY STYLE	DIELECTRIC	CAPACITANCE	DC VOLTAGE RATING	TOLERANCE CODE	TERMINATION	FAILURE RATE	MARKING OPTION	PACKAGING
CDR01 CDR02 CDR03 CDR04 CDR06 CDR31 CDR32 CDR33 CDR34	BP BX	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	A = 50 V B = 100 V	C = ± 0.25 pF D = ± 0.50 pF F = ± 1 % J = ± 5 % K = ± 10 % M = ± 20 %	M = Silver palladium Y = Ni barrier 100 % tin plate matte finish W = Ni barrier 100 % tin plate matte finish Z = Ni barrier 100 % tin/lead plate min. 4 % U = Hot solder dipped min. 4 % lead	M = 1.0 % P = 0.1 % R = 0.01 % S = 0.001 % Consult factory for failure rate status	A = Unmarked	T = 7" reel/plastic tape J = 7" reel/(low qty.) C = 7" reel/paper tape R = 11 1/4"/13" reel/plastic tape P = 11 1/4"/13" reel/paper tape B = Bulk

PART NUMBERING/ORDERING INFORMATION DSCC PRODUCTS (1)							
03028-	BX	102	A	K	Z	C	J
DSCC STYLE	DIELECTRIC	CAPACITANCE	DC VOLTAGE RATING	TOLERANCE CODE	TERMINATION	GROUP TESTING	PACKAGING
03028- 03029- 05006- 05007-	BP BX BR	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	X = 10 V Y = 16 V Z = 25 V A = 50 V B = 100 V C = 200 V	C = ± 0.25 pF D = ± 0.50 pF F = ± 1 % G = ± 2 % J = ± 5 % K = ± 10 % M = ± 20 %	M = Silver palladium Z = Ni barrier tin/lead plate min. 4 % lead U = Hot solder dipped min. 4 % lead	C = Full group C L = 2000 h life test only M = 1000 h life test only H = Low voltage humidity test only - = Group A test only	T = 7" reel/plastic tape J = 7" reel/(low qty.) C = 7" reel/paper tape O = 7" reel/flamed paper tape R = 11 1/4"/13" reel/plastic tape P = 11 1/4"/13" reel/paper tape I = 11 1/4"/13" reel/flamed paper tape B = bulk

PART NUMBERING/ORDERING INFORMATION DSCC PRODUCTS (1)(2)						
05001-	4R7	A	C	Z	C	J
DSCC STYLE	CAPACITANCE	DC VOLTAGE RATING	TOLERANCE CODE	TERMINATION	GROUP TESTING	PACKAGING
05001- 05002- 05003-	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	A = 50 V B = 100 V C = 200 V K = 250 V	B = ± 0.10 pF C = ± 0.25 pF D = ± 0.50 pF F = ± 1 % G = ± 2 % J = ± 5 % K = ± 10 % M = ± 20 %	M = Silver palladium Z = Ni barrier tin/lead plate min. 4 % lead	C = Full group C L = 2000 h life test only M = 1000 h life test only H = Low voltage humidity test only - = Group A test only	T = 7" reel/plastic tape J = 7" reel/(low qty.) C = 7" reel/paper tape O = 7" reel/flamed paper tape R = 11 1/4"/13" reel/plastic tape P = 11 1/4"/13" reel/paper tape I = 11 1/4"/13" reel/flamed paper tape B = Bulk

Notes

- (1) For details of ratings, see individual datasheet
- (2) Contact mlcc@vishay.com for availability



Links and Promotional Information

PRODUCT SHEETS

COMMODITY APPLICATIONS:

VJ...W1BC NP0 Dielectric:	www.vishay.com/doc?49256
VJ...W1BC X5R Dielectric:	www.vishay.com/doc?49254
VJ...W1BC X7R Dielectric:	www.vishay.com/doc?49253
VJ...W1BC Y5V Dielectric:.....	www.vishay.com/doc?49255
VJ...W1BC High Q:.....	www.vishay.com/doc?49751
VJ...W1BC Ultra High Q/Low ESR:	www.vishay.com/doc?49022
VJ0201...W1BC:	www.vishay.com/doc?49706
VJ06C4...W1BC Chip Array:.....	www.vishay.com/doc?49714

HIGH-VOLTAGE APPLICATIONS:

HVArc Guard®:	www.vishay.com/doc?49667
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BOARDFLEX SENSITIVE APPLICATIONS:

VJ OMD Series:	www.vishay.com/doc?49614
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AUTOMOTIVE APPLICATIONS:

Automotive Instructional Guide:.....	www.vishay.com/doc?49794
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TECH NOTES

VISHAY BASIC COMMODITY SERIES:

Test procedures and requirements:.....	www.vishay.com/doc?28545
Soldering and footprint:.....	www.vishay.com/doc?45017

VISHAY VITRAMON:

HVArc Guard®:

Technical Information:	www.vishay.com/doc?45062
Low-Power Voltage Multiplier Application:	www.vishay.com/doc?45058
Passive Snubber Application:	www.vishay.com/doc?45059
Light Ballast Application:.....	www.vishay.com/doc?45060
End Terminations:.....	www.vishay.com/doc?45063
Soldering recommendations:	www.vishay.com/doc?45034
Soldering pad recommendations:	www.vishay.com/doc?45201

SPICE MODEL

Spice Model Program:.....	www.vishay.com/capacitors/mlcc-list/
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LEAD (PB)-FREE INFORMATION

How to get Lead (Pb)-free:	www.vishay.com/how/leadfree
Capacitor Lead (Pb)-free Matrix:	www.vishay.com/doc?49322



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