

WIRE BONDABLE VERTICAL ELECTRODE CAPACITORS

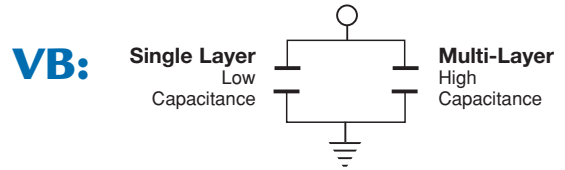
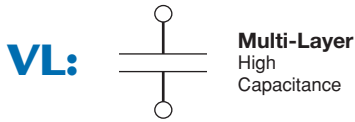
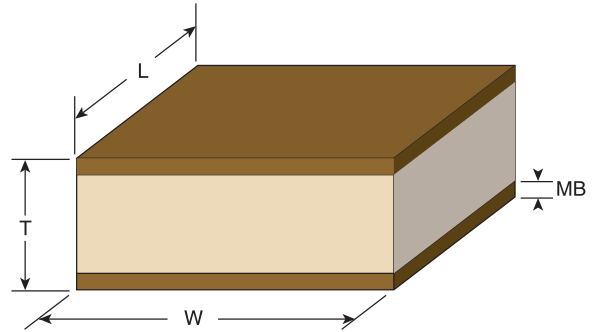
PRESIDIO ADVANTAGE

VL SERIES

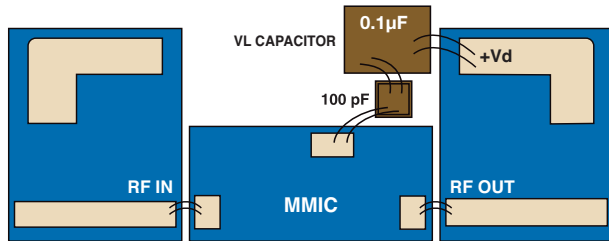
- Wire Bondable Bypass Capacitors for MMIC's

VB SERIES

- Wire Bondable Integrated Broadband Bypass Capacitors for MMIC's up to Millimeter Frequencies
- Low Profile

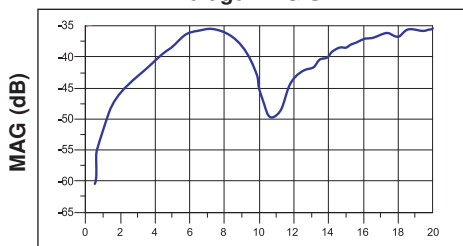


VL SERIES

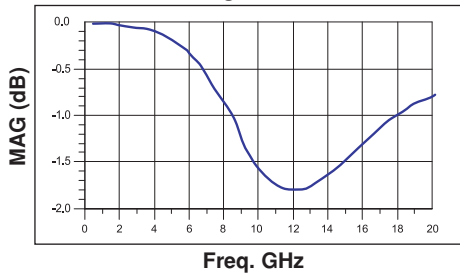


MVL4080X104MGH5C-_* (Bond Wires Included)

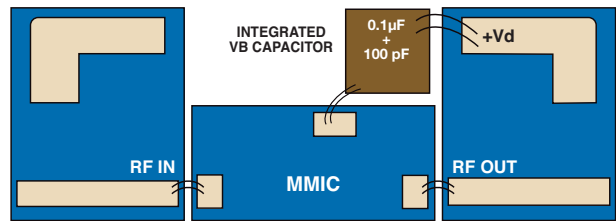
Data in Shunt
Average MAG S21



Average MAG S11

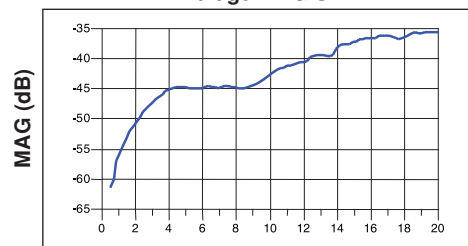


VB SERIES

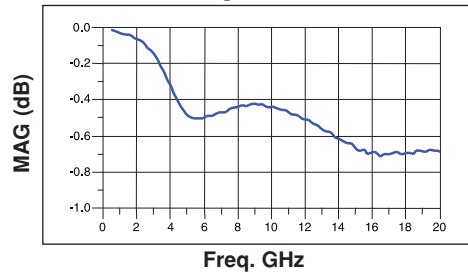


MVB4080X104ZGH5C3_* (Bond Wires Included)

Data in Shunt
Average MAG S21



Average MAG S11



GLOBAL PART NUMBER EXAMPLE (How to Order)

M	VB	3030	X	103	M	G	H	5	C	1	*
Test Code	VB = Vertical Broadband VL = Vertical Layer	Size (Pg. 9)	Dielectric	Capacitance	Capacitance Tolerance	Voltage	Termination	Packaging	RoHS Compliant	VB – Special Code VL – Hyphen Required	Design-In Code (See Page 14)

Test Codes, Dielectric Codes and Specifications

				FIT* 85° C	FIT* 100° C	Commercial Space	Similar -55681	Similar -123	Mil-PRF-38534 Rev. L Class H	Class K	Cust. Spec.
TEST CODES:				M	N	J	C	S	H	K	D
Upgradable to Codes:				H, C	H, C, S, K						
ELECTRICAL SPECIFICATIONS	X7R Dielectric Code X	Y5V Dielectric Code Y	Testing Method	Test Samples		Test Samples	Test Samples		Test Samples		
Temperature Coefficient Limits	± 20%	+ 22%, -82%	Presidio Specification								
Temperature Coefficient Limit Cycle	-55° to +125° C	-30° to +85° C	Presidio Specification								
Capacitance	1 kHz, 1.0 V AC RMS	1 kHz, 1.0 V AC RMS	MIL-STD-202 Meth. 305	100%	100%	100%	100%	100%	10	100%	
Dissipation Factor, maximum	5% max.	19% max.	Presidio Specification	100%	100%	100%	100%	100%	10	100%	
Dielectric Withstanding Voltage (DWV)	250% of WVDC	250% of WVDC	MIL-STD-202 Meth. 301	1% AQL	1% AQL	100%	100%	100%	10	100%	
Insulation Resistance @ +25° C at WVDC	1000 MΩ - μF	50 MΩ - μF	MIL-STD-202 Meth. 302	1% AQL	1% AQL	100%	100%	100%	10	100%	
Insulation Resistance @ +125° C at WVDC	100 MΩ - μF	Not Applicable	MIL-STD-202 Meth. 302				1% AQL	100%		100%	
Aging Effects	2.5% typ./decade hr.	5% typ./decade hr.	Presidio Specification								
VISUAL & MECHANICAL SPECIFICATIONS											
Visual, Workmanship			Presidio Specification	100%	100%	100%	100%	100%	22	100%	
Element Electrical			Measure & Record						10	25/80/125	
Wire Bond Evaluation	3 grams, 0.001" dia. Au wire		STD-883 Method 2011						10	10	
Shear Strength, minimum	Size dependent	Size dependent	STD-883 Method 2019						10	10	
Physical Dimensions	See Page 9	See Page 9	Presidio Specification						20	20	
Prohibited Material Inspection			MIL-STD-1580								5
Acoustic Imaging			ECIA EIA-469								100%
Metalization, minimum	100 μin (2.5 μm)	100 μin (2.5 μm)	Presidio Specification								
ENVIRONMENTAL TESTS, LEVEL I (TEST CODE C)											
Voltage Conditioning	100 Hours	100 Hours	MIL-STD-202 Meth. 108, A						100%		
ENVIRONMENTAL TESTS, LEVEL II (TEST CODE S)											
Thermal Shock & Voltage Conditioning	20 cycles/168 hr. min.	Not Applicable	MIL-STD-202 Meth. 107						100%		100%
Destructive Physical Analysis Report		Not Applicable	EIA-469 +MIL-PRF-123						Included		Included
Temperature Coeff. of Capacitance, 0 Volt	± 20%	Not Applicable	Presidio Specification						12		
Life Test	1000 Hours Each Lot	Not Applicable	MIL-STD-202 Meth. 108						25 min.		25/80/125
Humidity, Steady State, Low Voltage	240 hours min.	Not Applicable	MIL-STD-202 Meth. 103, A						12		12
RoHS Compliant, Yes or No	Specify	Not Applicable									

Screening similar to EEE-INST-002 Level 3 minimum. Data not reported.

*FIT (Failure In Time) per billion hours. Calculations are based on assumed continuous operating temperatures 85° C and 100° C

-3dB CUT OFF FREQUENCY	
pF	kHz
330,000	< 10
180,000	10
100,000	16
68,000	25
47,000	35
43,000	40
30,000	55
22,000	75
20,000	80
15,000	105
10,000	160
8,200	195
4,700	340

Capacitance Codes

First Two Digits = Significant figures of capacitance in picofarads

Third Digit = Additional number of zeros

Example: 100 = 10 pF
102 = 1,000 pF
104 = 100,000 pF

Working Voltage (See Page 9)

Code	WVDC	Code	WVDC
3	100	G	16
2	50	F	12
1	25	E	10
		C	6.3

Termination

VL/VB	Description
H	99.8% Au Top and Bottom Suitable for Conductive Epoxy
U	100% Au Top and Bottom Oxide Free Surface Suitable for Conductive Epoxy
K	99.8% Au Top, PdAg Bottom Conductive Epoxy or Solder

100 Microinches minimum thickness on both sides

Capacitance Tolerance

Code	Tol.
M	± 20%
Z	-20%, +80% for all Y5V dielectric

Packaging

5 = Waffle Pack (standard)
F = Grip Ring, 6.0" diameter standard

RoHS

Code	Compliant
N	No
R	Legacy, ended 2012
C	Yes, started January 2013

Special Code

VB Series: Single Layer Capacitance Value:
1 = 100 pF
3 = 1800 pF

VL Series: Hyphen Required



SELECTION TABLE: VERTICAL ELECTRODE CAPACITORS — WIRE BONDABLE

Size Code	L inch (mm)	W inch (mm)	T Max. inch (mm)	MB Max. inch (mm)	Working Voltage (WVDC) Max.	Capacitance (pF)	INDUSTRIAL & MILITARY Test Code M				SPACE TEST CODES	Performance Curves	S2P Files ^(a) VB ^(b)
							X7R (pF)	Y5V (pF)	VB SERIES PART NUMBER	VL SERIES PART NUMBER	X7R (pF)		
2020	0.020 (0.508) ± 0.003 (0.076)	0.020 (0.508) ± 0.003 (0.076)	0.015 (0.381)	0.003 (0.076)	100	Max:	390			MVL2020X391M3 *5C-*			
					50	Max:	1,000			MVL2020X102M2 *5C-*	1,000		
					25	Max:	2,700			MVL2020X272M1 *5C-*			
					16	Max:	5,100			MVL2020X512MG *5C-*			
					10	Max:	10,000			MVL2020X103ME *5C-*			
					6.3	Max:				LVB2020X103MC *5C1*			
2040	0.020 (0.508) ± 0.003 (0.076)	0.040 (1.016) ± 0.004 (0.102)	0.017 (0.432)	0.005 (0.127)	100	Max:	1,000		MVB2040X102M3 *5C1*	MVL2040X102M3 *5C-*	1,000		
					50	Max:	2,200		MVB2040X222M2 *5C1*	MVL2040X222M2 *5C-*			
					25	Max:	5,100		MVB2040X512M1 *5C1*	MVL2040X512M1 *5C-*			
					16	Max:	10,000		MVB2040X103MG *5C1*	MVL2040X103MG *5C-*			
					10	Max:	22,000		MVB2040X223ME *5C1*	MVL2040X223ME *5C-*			
2741	0.027 (0.686) ± 0.004 (0.102)	0.041 (1.041) ± 0.004 (0.102)	.033 (0.838)	0.005 (0.127)	16	Max:	100,000		MVB2741X104MG *5C1*	MVL2741X104MG *5C-*			
3030	0.030 (0.762) ± 0.003 (0.076)	0.030 (0.762) ± 0.003 (0.076)	0.022 (0.559)	0.005 (0.127)	100	Max:	4,700		MVB3030X472M3 *5C1*	MVL3030X472M3 *5C-*			
					50	Max:	10,000		MVB3030X103M2 *5C1*	MVL3030X103M2 *5C-*	6,800		
					25	Max:	15,000		MVB3030X153M1 *5C1*	MVL3030X153M1 *5C-*			
					16	Max:	22,000		MVB3030X223MG *5C1*	MVL3030X223MG *5C-*	10,000	PDF	WEB
					16	Max:		100,000		MVL3030Y104ZG *5C-*			
					10	Max:	43,000		MVB3030X433ME *5C1*	MVL3030X433ME *5C-*			
3060	0.030 (0.762) ± 0.003 (0.076)	0.060 (1.524) ± 0.004 (0.102)	0.017 (0.432)	0.005 (0.127)	100	Max:	8,200		MVB3060X822M3 *5C1*	MVL3060X822M3 *5C-*			
					50	Max:	20,000		MVB3060X203M2 *5C1*	MVL3060X203M2 *5C-*			
					25	Max:	30,000		MVB3060X303M1 *5C1*	MVL3060X303M1 *5C-*			
					16	Max:	47,000		MVB3060X473MG *5C1*	MVL3060X473MG *5C-*			
					10	Max:	100,000		MVB3060X104ME *5C1*	MVL3060X104ME *5C-*	100,000 (VL)		
4040	0.040 (1.016) ± 0.004 (0.102)	0.040 (1.016) ± 0.004 (0.102)	0.025 (0.635)	0.005 (0.127)	100	Max:	8,200		MVB4040X822M3 *5C1*	MVL4040X822M3 *5C-*			
					50	Max:	20,000		MVB4040X203M2 *5C1*	MVL4040X203M2 *5C-*	10,000		
					25	Max:	30,000		MVB4040X303M1 *5C1*	MVL4040X303M1 *5C-*			
					16	Max:	47,000		MVB4040X473MG *5C1*	MVL4040X473MG *5C-*	47,000 (VL)		
					10	Max:	100,000		MVB4040X104ME *5C1*	MVL4040X104ME *5C-*			
3080	0.030 (0.762) ± 0.003 (0.076)	0.080 (2.032) ± 0.004 (0.102)	0.025 (0.635)	0.005 (0.127)	50	Max:	15,000			MVL3080X153M2 *5C-*			
					16	Max:	100,000			MVL3080X104MG *5C-*			
4080	0.042 (1.067) ± 0.004 (0.102)	0.083 (2.108) ± 0.004 (0.102)	VB 0.017 (0.432) VL 0.025 (0.635)	0.005 (0.127)	100	Max:	15,000		MVB4080X153M3 *5C1*	MVL4080X153M3 *5C-*			
					50	Max:	30,000		MVB4080X303M2 *5C1*	MVL4080X303M2 *5C-*	10,000 (VL)		
					25	Max:	68,000		MVB4080X683M1 *5C1*	MVL4080X683M1 *5C-*			
					16	Max:	100,000		MVB4080X104MG *5C3*	MVL4080X104MG *5C-*		PDF	WEB
5080	0.050 (1.270) ± 0.004 (0.102)	0.083 (2.108) ± 0.004 (0.102)	0.025 (0.635)	0.005 (0.127)	100	Max:	30,000		MVB5080X303M3 *5C1*	MVL5080X303M3 *5C-*			
					50	Max:	100,000		MVB5080X104M2 *5C1*	MVL5080X104M2 *5C-*	68,000 (VL) 47,000 (VB)		
					25	Max:	100,000		MVB5080X104M1 *5C1*	MVL5080X104M1 *5C-*	100,000 (VL)		
					16	Max:	180,000		MVB5080X184MG *5C1*	MVL5080X184MG *5C-*			
					12	Max:			NVB5080X104MF *5N3*		100,000		
					10	Max:	220,000		MVB5080X224ME *5C1*	MVL5080X224ME *5C-*			

* Insert codes for termination (Page 8) and design-in location (Page 14)



A WORD TO THE DESIGN ENGINEER

After the design work is done, outsourcing manufacturing on a global basis is a management option. At Presidio Components, we are striving for complete customer satisfaction which includes “after” service for all of our products.

We added a “Design In” locator code for quick traceability, if needed. Please select your location from the list below and add the appropriate code at the end of the part number.

If you need assistance give us a call at **(858) 578-9390** or email us at **info@presidiocomponents.com**.

UNITED STATES

USA	Code	USA	Code
Alabama	G	Nebraska	P
Alaska	P	Nevada, North	B
Arizona	D	Nevada, South	C
Arkansas	P	New Hampshire	L
California, North	B	New Jersey	J
California, South	C	New Mexico	D
Colorado	E	New York, Metro	J
Connecticut	L	New York, Upstate	K
Delaware	I	North Carolina	G
District of Columbia	H	North Dakota	O
Florida	G	Ohio	M
Georgia	G	Oklahoma	P
Hawaii	P	Oregon	A
Idaho	A	Pennsylvania	I
Illinois	N	Rhode Island	L
Indiana	M	South Carolina	G
Iowa	O	South Dakota	O
Kansas	P	Tennessee	G
Kentucky	M	Texas	F
Louisiana	P	Utah	E
Maine	L	Vermont	L
Maryland	H	Virginia	H
Massachusetts	L	Washington	A
Michigan	N	West Virginia	P
Minnesota	O	Wisconsin, East	N
Mississippi	G	Wisconsin, West	O
Missouri	N	Wyoming	E
Montana	A		

OUTSIDE THE UNITED STATES

Americas	Code	Europe	Code
Canada	R	Austria	3
Mexico	R	Belgium	1
Caribbean	R	Denmark	5
Central America	R	Finland	5
South America	R	France	2
		Germany	3
		Ireland	6
		Italy	4
		Luxembourg	1
		Netherlands	1
		Norway	5
		Sweden	5
		Switzerland	3
		United Kingdom	6
		Other European Countries	7
		Other	
		India	2
		Israel	8
		Rest of World	9

