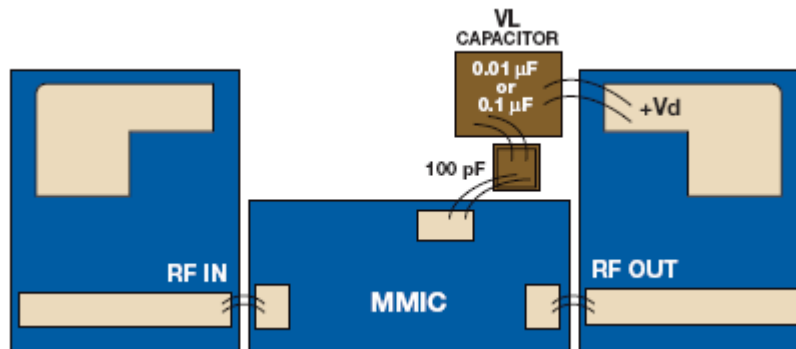


# "VL" Series Vertical Layer Capacitors

## Wire Bondable DC Decoupling Capacitors

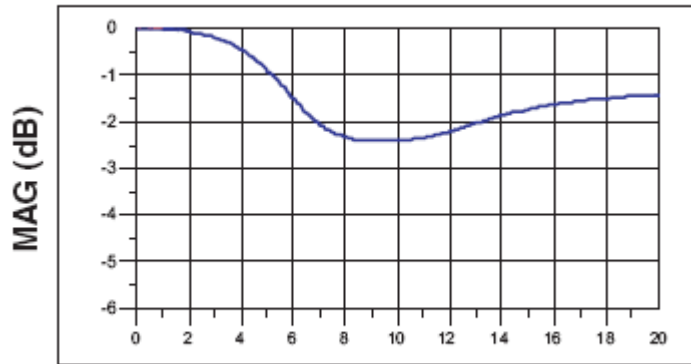
### Presidio Advantage



**PERFORMANCE:** MVL3030X103MGH5N-\* (Bond Wires Included)

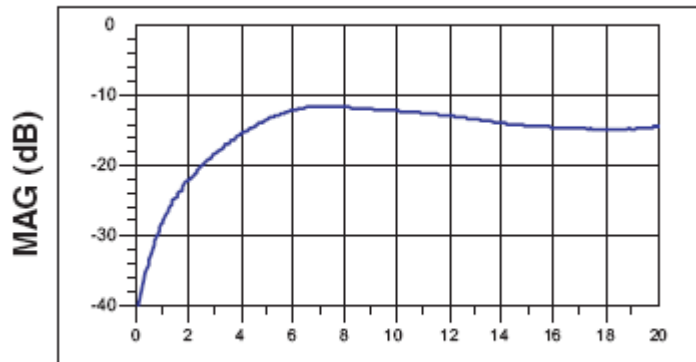
### Insertion Loss Data in Shunt

#### Average MAG S11



Freq. GHz

#### Average MAG S21



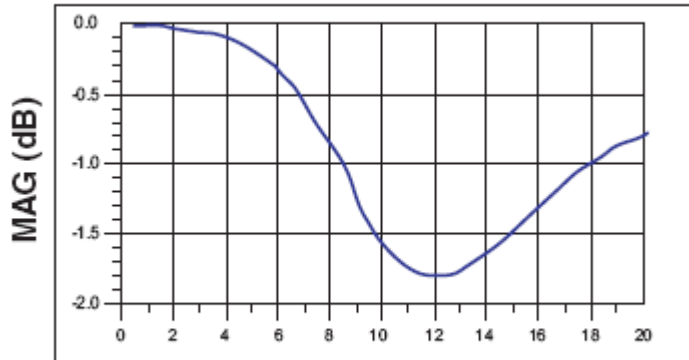
Freq. GHz



# "VL" Series Vertical Layer Capacitors

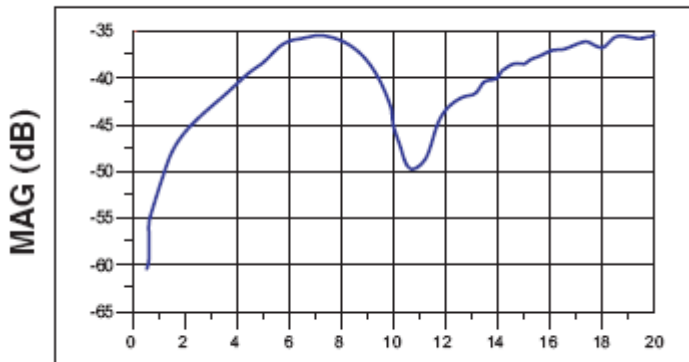
**PERFORMANCE:** MVL4080X104MGH5N-\* (Bond Wires Included)

Average MAG S11



Freq. GHz

Average MAG S21



Freq. GHz

**Environmental Parameters** Per Mil-C-49464/55681 (when specified)

	<b>Mil-Std-202</b>	<b>Conditions</b>
Immersion:	104	B
Moisture Resistance:	106	-
Resistance to Solder Heat:	210	C
Thermal Shock:	107	A
100 Hour Voltage Conditioning:	108	A
2000 Hour Life Test:	108	A
Low Voltage Humidity:	103	A

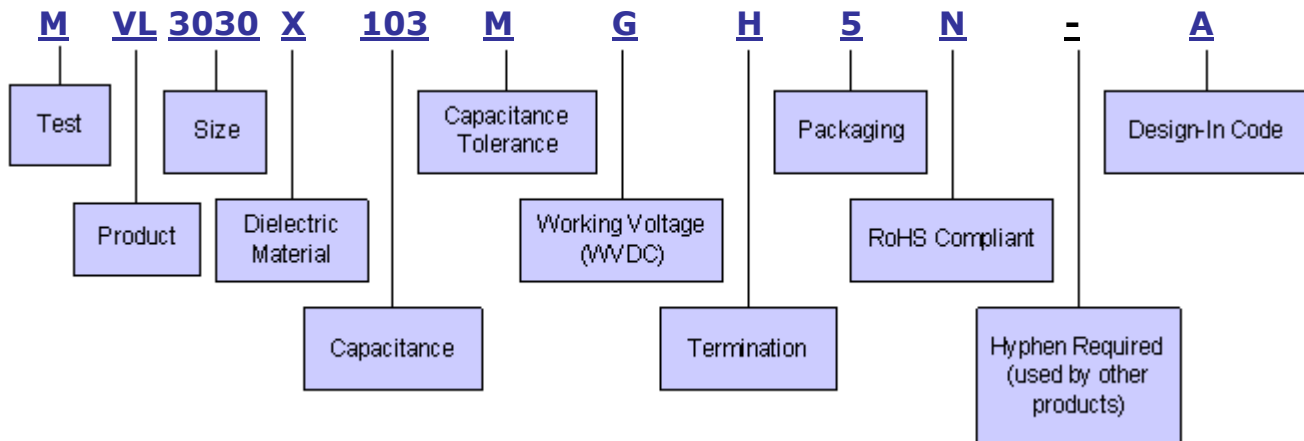


# "VL" Series Vertical Layer Capacitors

## Mechanical Parameters

Bond Strength:	Mil-Std-883, Method 2011
Shear Strength:	Mil-Std-883, Method 2019
Metallization Thickness:	Minimum 100 microinches (2.5 micrometers)

## Global Part Number Example (How To Order)



## Testing Codes

Presidio Components' quality system is ISO 9001 compliant and approved to Mil-I-45208 and Mil-Std-790

### Code Description

Code	Description
M	<b>Industrial Rating; FIT Calculation Using 85°C Continuous Operating Temperature</b> <b>Electrical:</b> 100% capacitance, AQL Level II 1% per ANSI/ASQ Z1.4 for insulation resistance (IR) and dielectric withstanding voltage (DWV) <b>Visual:</b> 100%, as per Mil-Std-883, Method 2032. Can be upgraded to Test Code H as per Mil-PRF-38534
H	Class H Element evaluation as per Mil-PRF-38534, Appendix C, Table C-III
K	<i>High Reliability Testing (industrial part numbers cannot be upgraded)</i> Class K Element evaluation as per Mil-PRF-38534, Appendix C, Table C-III
D	<b>Special Instructions or as per Customer Source Control Drawing</b>

## Product Codes

VL Vertical Layer Capacitor



# "VL" Series Vertical Layer Capacitors

## Popular Capacitance Values, Case Sizes and Part Numbers

### Industrial Rating

RoHS Compliant	Capacitance + Tolerance	Size	Temperature Coefficient	WVDC	Global Part Numbers
No	10,000 pF ± 20%	3030	± 15%	16	MVL3030X103MGH5N-*
Yes	10,000 pF ± 20%	3030	± 15%	16	MVL3030X103MGH5R-*
No	10,000 pF ± 20%	4040	± 15%	16	MVL4040X393MGH5N-*
Yes	100,000 pF -20%, +80%	3030	+22%, -82%	16	MVL3030Y104ZGH5R-*
No	100,000 pF ± 20%	3080	± 15%	16	MVL3080X104MGH5N-*

\* Insert [Design-In](#) code.

### Space/Military Class K Rating

RoHS Compliant	Capacitance + Tolerance	Size	Temperature Coefficient	WVDC	Global Part Numbers
No	10,000 pF ± 20%	4040	± 15%	25	KVL4040X103M1H5N-*
No	100,000 pF ± 20%	5080	± 15%	25	KVL5080X104M1H5N-*

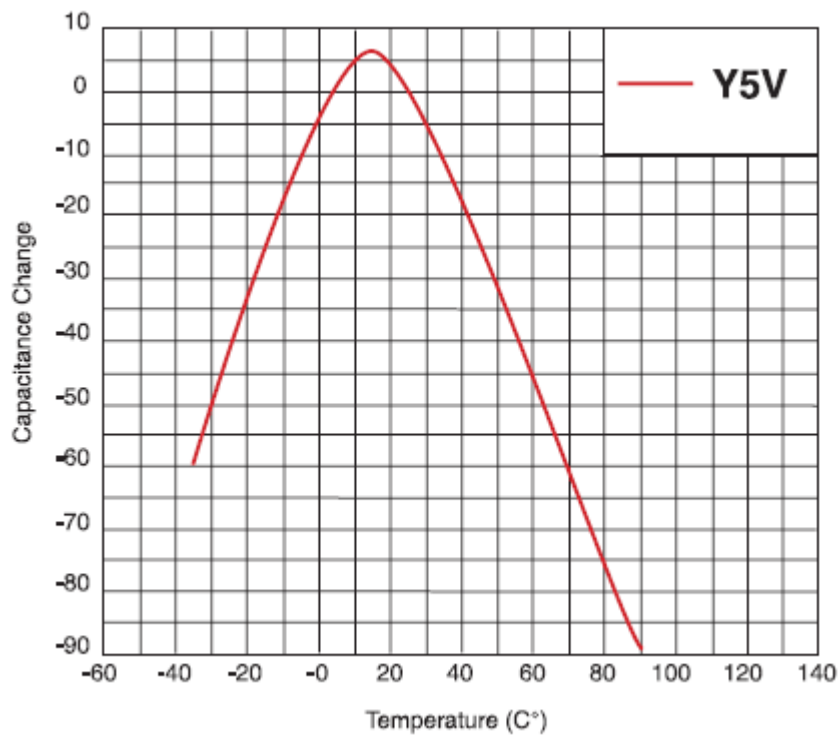
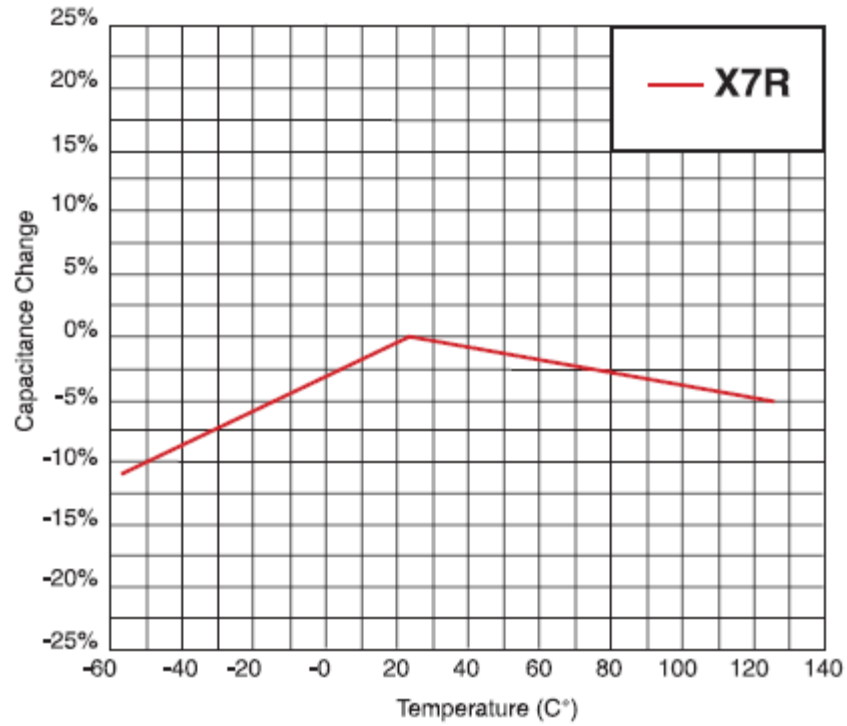
\* Insert [Design-In](#) code.

## Dielectric Material Code and Electrical Specifications

Material:	X7R	Y5V
Code:	X	Y
Dissipation Factor:	4.0% max.	12.5% max.
Insulation Resistance at 25°C:	> 10 <sup>5</sup> MΩ	> 10 <sup>5</sup> MΩ
Dielectric Withstanding Voltage:	2.5 times WVDC	2.5 times WVDC
Working Voltage (WVDC):	See capacitance table	16 VDC
Temperature Coefficient over Operating Temperature:	± 15%	+22%, -82%
Operating Temperature:	-55°C to +125°C	-30°C to +85°C
Aging Rate:	2.5% max. per decade/hour	5% per decade/hour
RoHS Compliant:		Yes



## "VL" Series Vertical Layer Capacitors



# "VL" Series Vertical Layer Capacitors

## 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

## Capacitance (Industrial Rating)

Dielectric Material	Temperature Coefficient	D.W. VDC	Working VDC	Cap. Value (pF)	Size				
					2020	3030	4040	3080	4080
X7R	± 15%	250	100	Max.	390	1,500	-	-	-
		125	50	Max.	1,000	4,300	10,000	15,000	30,000
		62.5	25	Max.	2,700	7,500	-	-	-
		40	16	Max.	5,100	10,000	39,000	100,000	100,000

## Capacitance Tolerance Codes

Code	Tolerance
M	± 20%
Z	-20% / +80%

## Working Voltage (WVDC)

Code	WVDC
G	16
1	25
2	50
3	100

## Termination Codes

Code	Description
H	99.95% Au For conductive epoxy.
K	99.95% Au Top / Pd/Ag Bottom For conductive epoxy or solder.

## Packaging Code

Code	Description
5	Waffle Pack (standard)

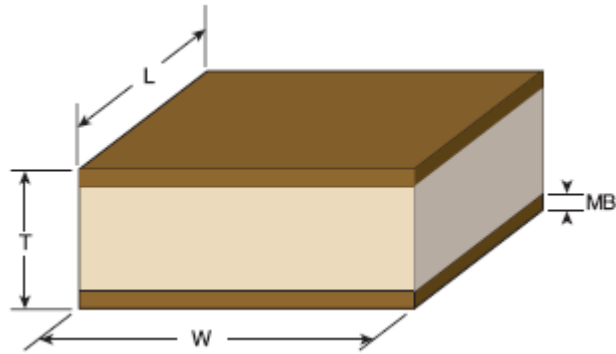
## RoHS Compliance Codes

Code	Compliant
N	No
R	Yes



# "VL" Series Vertical Layer Capacitors

## Dimensions



### Inches

Size	L	W	T max.	MB max.
2020	0.020 ± 0.003	0.020 ± 0.003	0.015	0.003
3030	0.030 ± 0.003	0.030 ± 0.003	0.022	0.005
4040	0.040 ± 0.005	0.040 ± 0.005	0.025	0.005
3080	0.030 ± 0.003	0.080 ± 0.005	0.025	0.005
4080	0.040 ± 0.004	0.083 ± 0.004	0.025	0.005
5080	0.050 ± 0.005	0.083 ± 0.004	0.025	0.005

### Millimeters (for reference only)

Size	L	W	T max.	MB max.
2020	0.508 ± 0.076	0.508 ± 0.076	0.381	0.076
3030	0.762 ± 0.076	0.762 ± 0.076	0.559	0.127
4040	1.016 ± 0.127	1.016 ± 0.127	0.635	0.127
3080	0.762 ± 0.076	2.032 ± 0.127	0.635	0.127
4080	1.016 ± 0.102	2.108 ± 0.102	0.635	0.127
5080	1.270 ± 0.127	2.108 ± 0.102	0.635	0.127