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### AntennaGuard/SPV

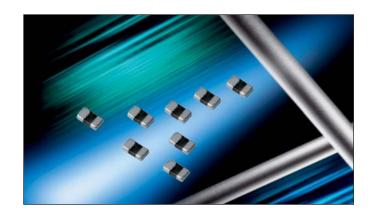


# **AVX Ultra-low Capacitance Multilayer Varistors ESD Protection for any Circuit Sensitive to Capacitance**

#### **GENERAL DESCRIPTION**

AVX offers ultra-low capacitance ESD protection in the Sub 1pF range for use in circuits that are sensitive to capacitance. The Sub pF Varistor (SPV) is available in 0.8pF and 0.4pF capacitance values in a compact 0402 low profile package. SPV devices provide excellent response time to ESD strikes to protect sensitive circuits from over voltage conditions.

The development of new information processing technologies call for ever increasing digital system speeds. Higher speeds necessitate the use of ultra-low capacitance values in order to minimize signal distortion.



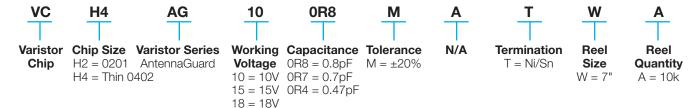
#### **FEATURES**

- High Reliability
- Capacitance <1pF</li>
- Bi-Directional protection
- Fastest response time to ESD strikes
- Multi-strike capability
- · Low insertion loss
- Low profile 0402 case size

#### **APPLICATIONS**

- Antennas
- Optics
- HDMI
- RF circuits
- FlexRay
- Portable devices
- Analog sensors
- Any circuit sensitive to capacitance

#### **HOW TO ORDER**



#### ANTENNAGUARD CATALOG PART NUMBERS/ELECTRICAL VALUES

AVX Part Number	V <sub>W</sub> (DC)	$V_{B}$	IL	Сар	Cap Tolerance	3db Freq (MHz)	Case Size
VCH4AG100R8MA	≤10	125	<10 nA	0.8	±20%	5800	LP 0402
VCH4AG150R8MA	≤15	125	<10 nA	0.8	±20%	5800	LP 0402
VCH4AG150R4MA	≤15	135	<100 nA	0.47	±20%	6700	LP 0402
VCH2AG180R7MA	≤18	135	<5µA	0.7	±20%	10800	0201

V<sub>w</sub>(DC) DC Working Voltage (V)

V<sub>B</sub> Typical Breakdown Voltage (V @ 1mA<sub>DC</sub>)

I<sub>L</sub> Typical leakage current at the working voltage

Cap Typical capacitance (pF) @ frequency specified and  $0.5V_{RMS}$ Freq Frequency at which capacitance is measured (M = 1MHz)

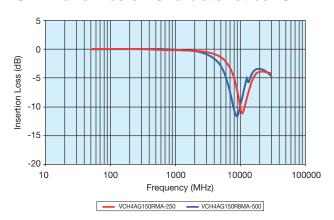


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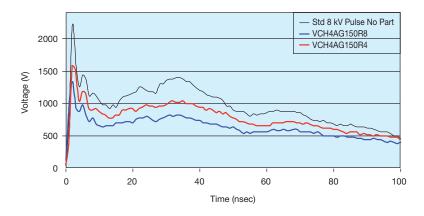
**S21 Transmission Characteristics -SPV** 

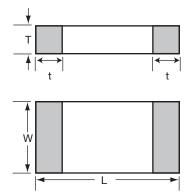


V/I Curve - SPV

200
150
50
1.0E-09
1.0E-06
1.0E-03
Current (A)

#### **ESD Wave Absorption Characteristics**





	mm (inches)
Size (EIA)	0402
Length (L)	1.00 ±0.10 (0.040 ± 0.004)
Width (W)	0.50 ±0.10 (0.020 ±0.004)
Max Thickness (T)	0.35 (0.014)
Terminal (t)	0.25±0.15 (0.010±0.006)