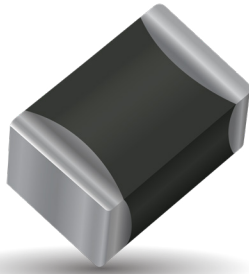


# Low Clamp Automotive TransGuard®



## Multilayer Varistors with Low Clamping to Working Voltage Ratio



### GENERAL DESCRIPTION

AVX Low Clamping Automotive TransGuard® Multilayer Varistors are designed for applications where lower clamping to working voltage ratio is required. Parts are suitable for automotive, industrial and general applications. Parts are AEC-Q200 qualified.

They offer bi-directional ESD overvoltage protection as well as EMI/RFI attenuation in a single SMT package. This allows designers the ability to combine the circuit protection and EMI/RFI attenuation function into a single highly reliable device.

Compared to standard varistors, low clamp varistors exhibit lower breakdown and clamping to working voltage ratio and provide enhanced protection for components with higher sensitivity to overvoltage.

Available in 0603 to 1210 case size, 16 Vdc working voltage, energy rating 0.1 - 1.6J, load dump energy 0.7 – 3J, peak current 50 – 500A and capacitance 400 – 5000pF. Operating temperature range is -55°C to +125°C. Parts offer excellent lead free solderability thanks to Ni Barrier/100% Sn termination.

### GENERAL CHARACTERISTICS

- Operating Temp.: -55 to +125°C
- Working Voltage: 16Vdc
- Case Size: 0603 - 1210

### FEATURES & BENEFITS

- AEC-Q200 Qualified
- Low Clamping to Working Voltage ratio
- EMI/RFI attenuation

### APPLICATIONS

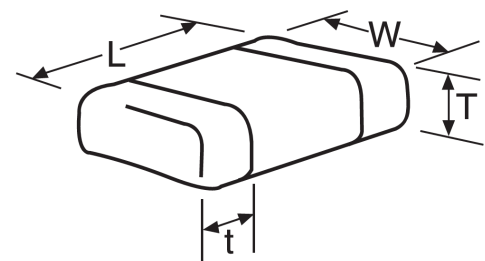
- Infotainment
- ECU
- Displays
- Microcontrollers
- Low  $V_c$  to  $V_w$  ratio requirements

### HOW TO ORDER

<b>VL</b> ┆ Varistor Low Clamp	<b>AS</b> ┆ Automotive Series	<b>0603</b> ┆ Case Size 0603 0805 1206 1210	<b>16</b> ┆ Working Voltage 16 = 16Vdc	<b>A</b> ┆ Energy Rating A = 0.1J C = 0.3J E = 0.5J J = 1.6J	<b>350</b> ┆ Clamping Voltage 350 = 35V	<b>R</b> ┆ Package D = 7" (1,000) R = 7" (4,000) T = 13" (10,000)	<b>P</b> ┆ Termination P = Ni/Sn plated	 RoHS COMPLIANT MSL 1 Pb Free 260°C
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### DIMENSIONS

Size (EIA)	mm (inches)			
	Length (L)	Width (W)	Max Thickness (T)	Land Length (t)
0603	1.60±0.15 (0.063±0.006)	0.80±0.15 (0.031±0.006)	0.90 (0.035)	0.35±0.15 (0.014±0.006)
0805	2.01±0.20 (0.079±0.008)	1.25±0.20 (0.049±0.008)	1.02 (0.040)	0.71 max. (0.028 max.)
1206	3.20±0.20 (0.126±0.008)	1.60±0.20 (0.063±0.008)	1.02 (0.040)	0.94 max. (0.037 max.)
1210	3.20±0.20 (0.126±0.008)	2.49±0.20 (0.098±0.008)	1.70 (0.067)	1.14 max. (0.045 max.)



### ELECTRICAL CHARACTERISTICS

AVX PM	V <sub>w</sub> (DC)	V <sub>w</sub> (AC)	V <sub>B</sub>	V <sub>C</sub>	V <sub>C</sub> Typ	I <sub>VC</sub>	I <sub>L</sub>	E <sub>T</sub>	E <sub>LD</sub>	I <sub>P</sub>	Cap	V <sub>Jump</sub>	P <sub>Diss. Max</sub>
	Vdc	Vac	V	V	V	A	μA	J	J	A	pF	V	W
VLAS060316A350	16	11	19.5+12%	35	30	1	10	0.1	-	50	400	20	0.003
VLAS080516C350	16	11	19.5+12%	35	30	1	10	0.3	0.7	120	900	20	0.006
VLAS120616E350	16	11	19.5+12%	35	30	1	10	0.5	1.3	200	1400	20	0.010
VLAS121016J350	16	11	19.5+12%	35	30	2.5	10	1.6	3	500	5000	20	0.030

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

V<sub>w</sub>(AC) AC Working Voltage [V]

V<sub>B</sub> Breakdown Voltage [V @ 1mADC]

V<sub>C</sub> Clamping Voltage [V @ I<sub>VC</sub>]

V<sub>C</sub>Typ Typical Clamping Voltage [V @ I<sub>VC</sub>]

I<sub>VC</sub> Test Current for VC

I<sub>L</sub> Maximum leakage current at the working voltage [μA]

E<sub>T</sub> Transient Energy Rating [J, 10x1000μS]

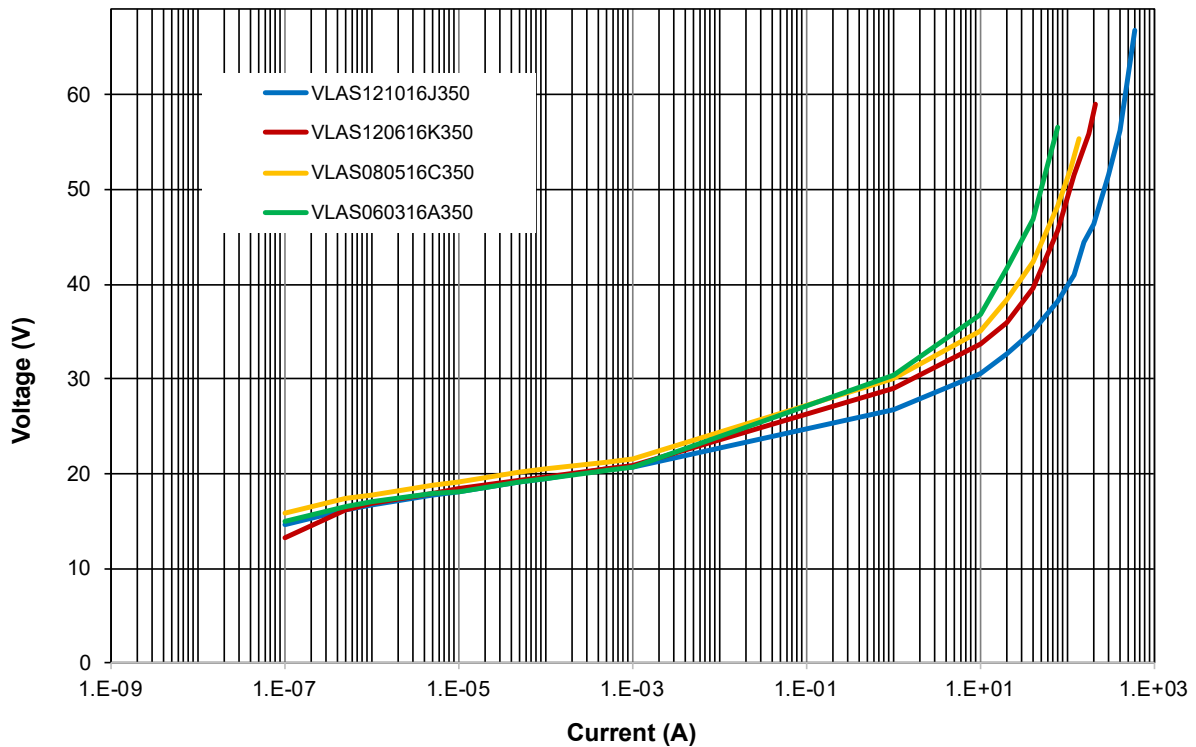
I<sub>P</sub> Peak Current Rating [A, 8x20μS]

Cap Typical capacitance [pF] @ 1kHz and 0.5VRMS

V<sub>Jump</sub> Jump Start (V)

P<sub>Diss Max</sub> Max Power Dissipation (W)

### V-I CHARACTERISTICS



### FORWARD TRANSMISSION CHARACTERISTICS (S21)

