

# Radial Leaded High Temperature Automotive **AVX**

## 150°C Rated Radial Leaded TransGuard®



### GENERAL DESCRIPTION

AVX High Temperature Multi-Layer Varistors are designed for underhood applications. Products have been tested, qualified, and specified to 150°C. The Radial Leaded TransGuard is built for durability in harsh environments. The MLV advantage is EMI/RFI attenuation in the off state. This allows designers to combine the circuit protection and EMI/RFI attenuation function into a single highly reliable device.

### GENERAL CHARACTERISTICS

- Operating Temperatures: -55°C to +150°C
- Working Voltage: 14-48Vdc

### FEATURES

- Rated at 150°C
- AEC Q200 qualified
- ESD rated to 25kV (HBM ESD Level 6)
- EMI/RFI attenuation in off state
- Excellent current and energy handling

### APPLICATIONS

- Under hood
- Down Hole Drilling
- DC Motors
- Relays
- Inductive Loads
- High Temperature/Harsh environment and more

### HOW TO ORDER

VR15	AT	18	A	650	R	TR2
<b>AVX Style</b>	<b>Series</b>	<b>Voltage</b>	<b>Energy</b>	<b>Clamping Voltage</b>	<b>Leads</b>	<b>Packaging</b>
VR15 VR20	AT = 150°C Automotive	14 = 14V 18 = 18V 26 = 26V 48 = 48V	A = 0.1J D = 0.4J S = 2.0J	580 = 60V 650 = 67V 101 = 100V 151 = 150V	R = RoHS Compliant	Blank = Bulk TR1 = T&R Standard 1 TR2 = T&R Standard 2

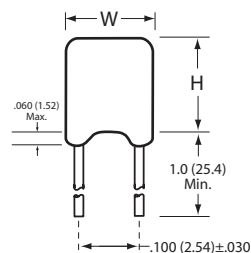


### ELECTRICAL CHARACTERISTICS

AVX Part Number	V <sub>WDC</sub>	V <sub>WAC</sub>	V <sub>B</sub>	V <sub>C</sub>	I <sub>VC</sub>	I <sub>L</sub>	ET	ELD	IP	Cap	Freq	V <sub>JUMP</sub>	P <sub>DISS</sub>
VR15AT14A580	14.0	10.0	34.5±10%	60	1	10	0.1	0.15	30	120	K	27.5	0.002
VR15AT18A650	18.0	13.0	41.0±10%	67	1	10	0.1	0.15	30	90	M	29	0.002
VR20AT26D101	26.0	18.0	62.0±10%	100	1	10	0.4	1.5	100	225	K	48	0.008
VR20AT48S151	48.0	34.0	100.0±10%	150	1	10	2.0	3.5	250	275	K	48	0.040

V <sub>W(DC)</sub>	DC Working Voltage [V]	E <sub>t</sub>	Transient Energy Rating [J, 10x1000µS]
V <sub>W(AC)</sub>	AC Working Voltage [V]	E <sub>LD</sub>	Load Dump Energy (x10) [J]
V <sub>B</sub>	Typical Breakdown Voltage [V @ 1mA <sub>DC</sub> ]	I <sub>p</sub>	Peak Current Rating [A, 8x20µS]
V <sub>C</sub>	Clamping Voltage [V @ I <sub>V</sub> ]	Cap	Typical capacitance [pF] @ frequency specified and 0.5V <sub>RMS</sub>
I <sub>VC</sub>	Test Current for V <sub>C</sub>	V <sub>JUMP</sub>	Jump Start (V)
I <sub>L</sub>	Maximum leakage current at the working voltage [µA]	P <sub>DISS</sub>	Power Dissipation (W)

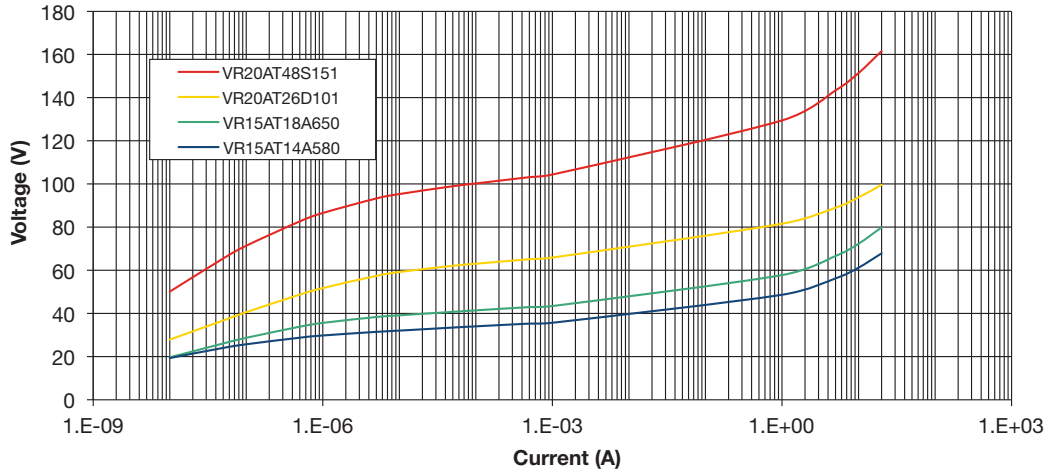
### PHYSICAL DIMENSIONS



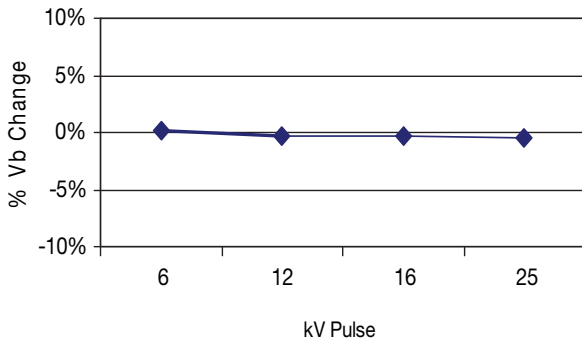
AVX Style	Width (W)	Height (H)	Thickness (T)	Lead Spacing	Lead Diameter
VR15	4.32 Max. (0.170)	3.81 Max. (0.150)	2.54 Max. (0.100)	2.54 (0.100)	0.508 (0.020)
VR20	5.59 Max (0.220)	5.08 Max (0.200)	3.175 Max (0.125)	2.54 (0.100)	0.508 (0.020)

### TYPICAL PERFORMANCE CURVES

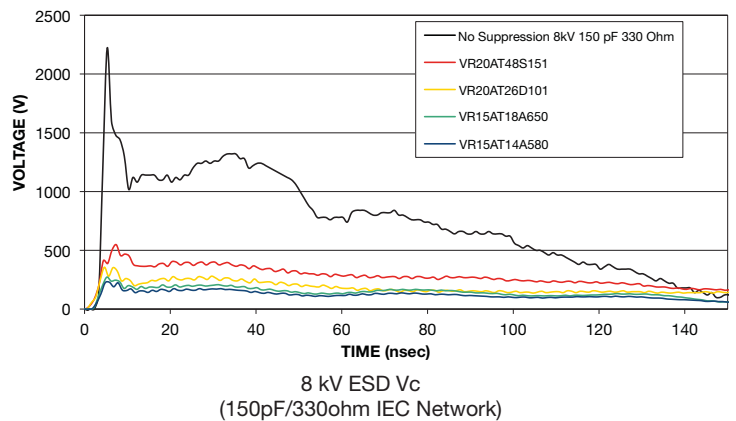
#### Typical Voltage Current Characteristics



#### AEC-Q200-002 ESD Characteristics



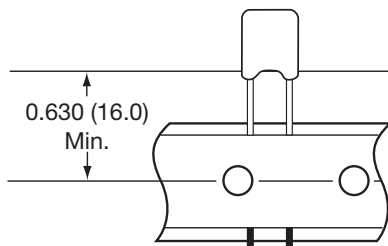
#### ESD Wave Absorption Characteristics



### TAPE & REEL PACKAGING OPTIONS

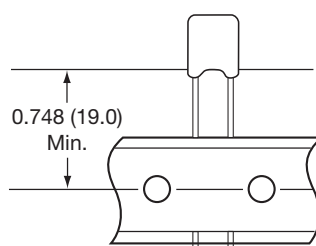
#### TR1

Tape & Reel Standard 1



#### TR2

Tape & Reel Standard 2



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