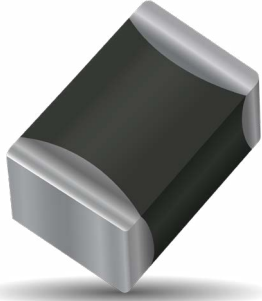


Low Clamp Automotive TransGuard®

Multilayer Varistors with Low Clamping to Working Voltage Ratio



GENERAL DESCRIPTION

KYOCERA 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, 16-30 Vdc working voltage, energy rating 0.1 - 1.6J, load dump energy 0.7 - 3J, peak current 50 - 500A and capacitance 275 - 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: 16-30 Vdc
- 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

VL
Varistor Low
Clamp

AS
Automotive
Series

0603
Case
Size
0603
0805
1206
1210

16
Working
Voltage
16 = 16Vdc
30 = 30Vdc

A
Energy
Rating
A = 0.1J
C = 0.3J
D = 0.4J
E = 0.5J
J = 1.6J

350
Clamping
Voltage
350 = 35V
570 = 57V

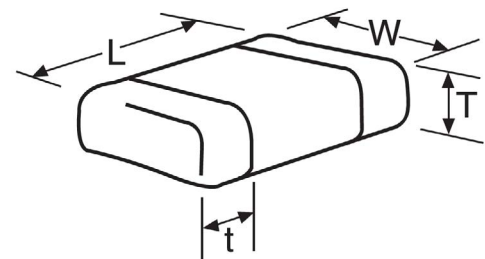
R
Package
D = 7" (1,000)
R = 7" (4,000)
T = 13" (10,000)

P
Termination
P = Ni/Sn plated

RoHS
COMPLIANT
MSL 1
Pb Free 260°C

DIMENSIONS

Size (EIA)	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.)



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Multilayer Varistors with Low Clamping to Working Voltage Ratio



ELECTRICAL CHARACTERISTICS

Part Number	V _w (DC)	V _w (AC)	V _B	V _C	V _{Ctyp}	I _{VC}	I _L	E _T	E _{LD}	I _P	Cap	V _{Jump}	P _{Diss. Max}
	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
VLAS080530D570	30	21	34+13%	57	50	1	15	0.4	0.6	125	275	29	0.008
VLAS060334B650	34	30	39+13%	65	60	1	10	0.2	0.25	50	90	29	0.004
VLAS080534C650	34	30	39+13%	65	60	1	10	0.3	1	80	275	29	0.006

V_w(DC) DC Working Voltage [V]

V_w(AC) AC Working Voltage [V]

V_B Breakdown Voltage [V @ 1mADC]

V_C Clamping Voltage [V @ I_{VC}]

V_{Ctyp} Typical Clamping Voltage [V @ I_{VC}]

I_{VC} Test Current for VC

I_L Maximum leakage current at the working voltage, 25°C [μA]

E_T Transient Energy Rating [J, 10x1000μS]

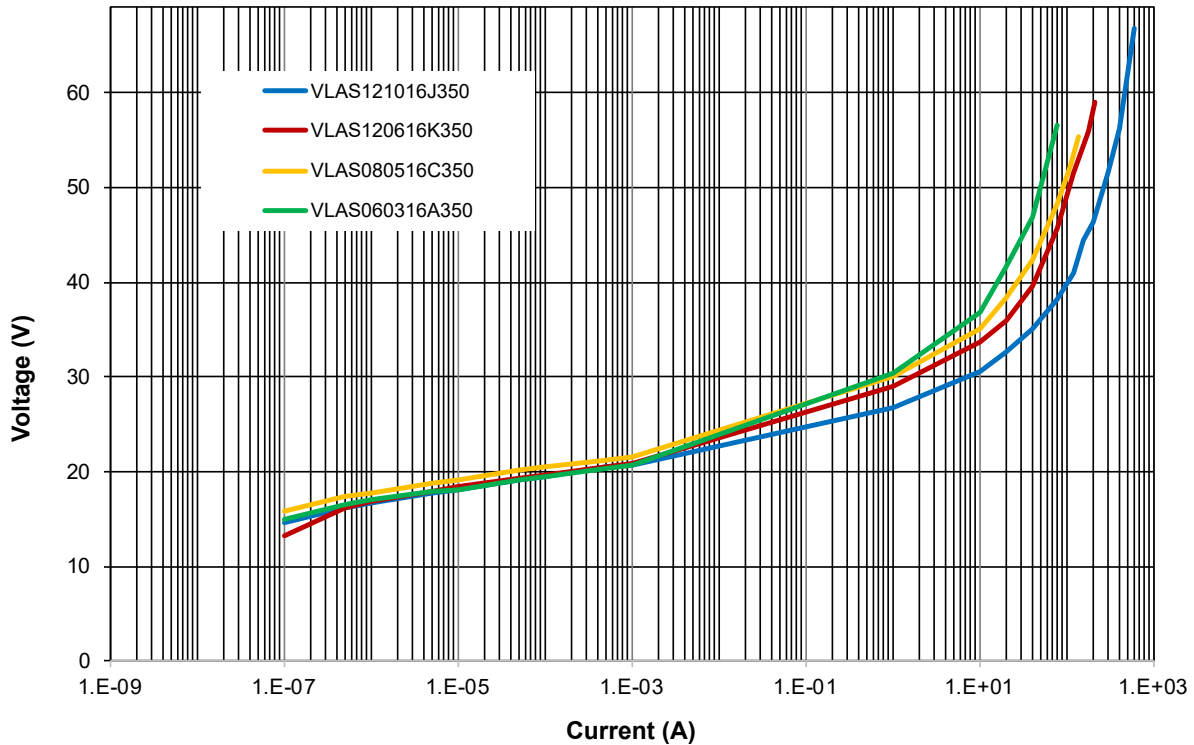
I_P Peak Current Rating [A, 8x20μS]

Cap Typical capacitance [pF] @ 1kHz and 0.5VRMS, 25°C

V_{Jump} Jump Start (V)

P_{Diss Max} Max Power Dissipation (W)

V-I CHARACTERISTICS



FORWARD TRANSMISSION CHARACTERISTICS (S21)

