



# AUTOMOTIVE MULTILAYER VARISTORS

## AV Series & AV HT Series

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

### Absolute Maximum Ratings

Continuous	Units	Value
Steady State Applied Voltage		
DC Voltage Range (Vdc)	V	16 to 56
AC Voltage Range (Vrms)	V	14 to 40
<b>Transient</b>	J	1 to 25*
Load Dump Energy (WLD)	V	24.5 to 65
Jump Start Capability (5 minutes), (V <sub>jump</sub> )	A	120 to 2000
Peak Single Pulse Surge Current, 8/20 $\mu$ s Waveform (I <sub>max</sub> )	J	0.3 to 30
Single Pulse Surge Energy, 10/1000 $\mu$ s Waveform (W <sub>max</sub> )	$^{\circ}$ C	<b>-55 to +125</b>
<b>Operating Ambient Temperature - AV Series</b>	$^{\circ}$ C	<b>-55 to +150</b>
<b>Operating Ambient Temperature - AV HT Series</b>	% / $^{\circ}$ C	<b>&lt; +0.05</b>
<b>Threshold Voltage Temperature Coefficient</b>	ns	<b>&lt; 2</b>
<b>Response Time</b>		

\* Types for Maximum Load Dump Energy (WLD) of 50 J are available upon request.

Type	V <sub>rms</sub>	V <sub>dc</sub>	V <sub>n</sub> 1mA	V <sub>jump</sub> 5 min	V <sub>c</sub>	I <sub>c</sub> 8/20 $\mu$ s	I <sub>max</sub> 8/20 $\mu$ s	W <sub>max</sub> 10/1000 $\mu$ s	WLD 10 x	P max	C <sub>typ</sub> @1kHz
	V	V	V	V	V	A	A	J	J	W	nF
1 AV 14 K 0805 121 Ni	14	16	24	24.5	40	1	120	0.3	1	0.008	0.44
2 AV 14 K 1206 201 Ni	14	16	24	24.5	40	1	200	0.6	1.5	0.008	1.00
3 AV 14 K 2220 122 Ni	14	16	24	24.5	40	10	1200	5.8	12	0.030	10.00
4 AV 30 K 1206 201 Ni-HT	30	34	47	50	77	1	200	2.0	1.5	0.008	0.53
5 AV 20 K 1210 401 Ni-HT	20	26	22	30	54	2.5	400	1.9	3	0.010	1.65
6 AV 30 K 1812 801 Ni-HT	30	34	47	50	77	5	800	3.8	6	0.015	2.20



# AUTOMOTIVE DUAL FUNCTION COMPONENT

## OV Series & MV Series

### Absolute Maximum Ratings

Continuous	Units	Value
Steady State Applied Voltage		
DC Voltage Range (Vdc)	V	16 to 56
AC Voltage Range (Vrms)	V	14 to 40
<b>Transient</b>		
Load Dump Energy (WLD)	J	1.5 to 12
Jump Start Capability (5 minutes), (Vjump)	V	24 to 65
Non-Repetitive Surge Current, 8/20 $\mu$ s Waveform (Imax)	A	200 to 1200
Non-Repetitive Surge Energy, 10/1000 $\mu$ s Waveform (Wmax)	J	0.7 to 10.5
<b>Capacitance Range</b>	nF	470 to 4700 *
<b>Capacitor Temperature Characteristics</b>		<b>X7R</b>
<b>Operating Ambient Temperature</b>	<b>C</b>	<b>-40 to +125</b>
<b>Threshold Voltage Temperature Coefficient</b>	<b>%/C</b>	<b>&lt; +0.05</b>
<b>Insulation Resistance</b>	<b>G<math>\Omega</math></b>	<b>&gt; 1</b>
<b>Insulation Voltage Capability</b>	<b>kV</b>	<b>&gt; 1.25</b>
<b>Response Time</b>	<b>ns</b>	<b>&lt; 25</b>

\* Other capacitance values upon request.

Type	V <sub>rms</sub>	V <sub>dc</sub>	V <sub>n</sub> 1mA	V <sub>jump</sub> 5 min	V <sub>c</sub>	I <sub>c</sub> 8/20 $\mu$ s	W <sub>max</sub> 10/1000 $\mu$ s	WLD 10 x	P max	I <sub>max</sub> 8/20 $\mu$ s	C @1kHz	D max	h/A max
	V	V	V	V	V	A	A	J	W	A	$\mu$ F	mm	mm
1 <b>MV 20 K 474 MX 201</b>	20	26	33	36	54	1	0.7	1.5	0.008	200	0.47	6.0	7.5
2 <b>MV 14 K 105 MX 501</b>	14	18	22	24.5	38	1	0.9	3	0.010	500	1.00	6.0	9
3 <b>OV 30 K 474 MX 801</b>	30	38	47	50	77	5	4.5	6	0.015	800	0.47	7.5	9
4 <b>OV 14 K 105 MX 122</b>	14	16	24	24.5	40	10	5.8	12	0.030	1200	1.00	8.0	12

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2.

3.

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## AVAILABLE PRODUCT SERIES

OV, MV, AV, ZV, C3V

- ▶ Surge protection & broad-band frequency noise suppression (dual component, C3V)
- ▶ Broad-band EMI filter suppressors complying with international standards
- ▶ Extended temperature ranges
- ▶ SMD and through-hole versions
- ▶ Standards: AEC - Q200, RoHs 2 - 2011 / 65 / EC, REACH, GADSL, CISPR
- ▶ Featured products: Dual component, C3V, 150 °C varistor
- ▶ Excellent transient energy distribution (AV varistors)

## APPLICATION MATRIX

	LIGHT SYSTEM	WIPER MOTOR	SUN ROOF	SIDE GLASS	COOLING MOTOR	ESP SYSTEM	ABS SYSTEM	MIRROR ADJUSTMENT	SEAT ADJUSTMENT MOTOR	ELECTRICAL VACUUM PUMP	POWER CLOUSTER	DOOR LOCKING MOTOR
AV	X				X	X	X		X	X	X	X
ZV	X				X	X	X			X	X	X
OV		X	X	X				X	X			
MV		X	X	X				X	X			

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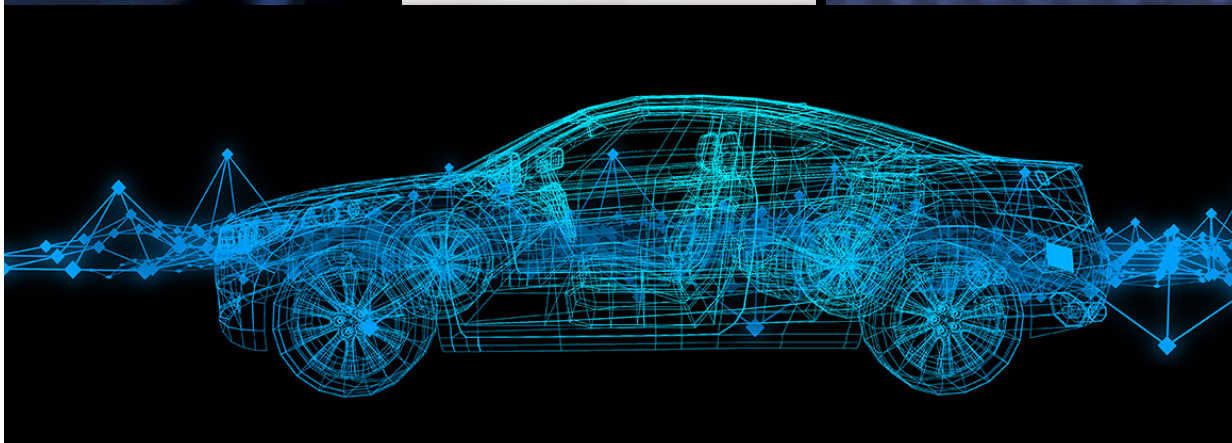
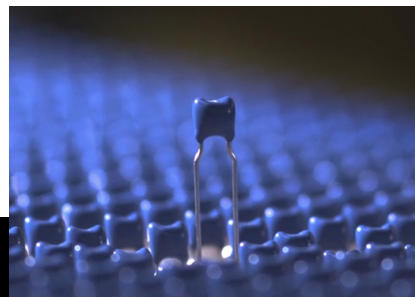
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QUALITY FIRST

**AUTOMOTIVE SERIES**

Sample Kit

AUTOMOTIVE SERIES



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