

**Description:**

Almost all electronic systems in internal-combustion powered vehicles, e.g., anti-lock brakes, direct ignition, airbag control, wiper motors, etc. are susceptible to damage from destructive voltage transients.

AV varistors are TVS chips that have suppression characteristics enabling protection from -55°C to +125°C (+150°C for AVY). These multilayer varistors offer excellent transient energy absorption in a small package due to improved internal energy distribution. AV series parts require significantly smaller space and pad area than silicon TVS diodes, offering greater circuit board layout flexibility for designer.



**Features:**

- AC operating voltage range (Vrms) from 14V to 35V
- DC operating voltage (Vdc) from 16V to 42V
- Power supply voltages (Vdc) 12V, 24V and 42V
- Broad range of current and energy handling capabilities
- 6 model sizes available: 1206, 1210, 1812, 2220 and 3225
- No plastic coating guarantees better flammability rating
- Dimensional and weight savings on PC board
- AgPd end terminations
- Ultra-low inductance, leadless chip guarantees the fastest response time to transient surges

General Technical Data		
Operating Temperature Range - AV	-55°C to +125°C	In accordance to CECC 42 000
Operating Temperature Range - AVY	-55°C to +150°C	
Storage Temperature Range	-55°C to +150°C	
Threshold Voltage Temperature Coefficient	<-0.05% / °C	
Response Time	< 2ns	

Standard Packaging Options / Quantities										
Series	Voltage Range (Vrms)	Chip Size								
		1206			1210			1812		
		R0	R1	R2	R0	R1	R2	R0	R1	R2
		180mm	180mm	330mm	180mm	180mm	330mm	180mm	180mm	330mm
		7"	7"	13"	7"	7"	13"	7"	7"	13"
AV, AVY	14	1,000	2,500	15,000	1,000	2,500	15,000		1,000	6,000
	17	1,000	2,500	14,000	1,000	2,500	14,000		1,000	6,000
	20 - 35	1,000	2,500	10,000	1,000	2,500	9,000		1,000	4,000

Series	Voltage Range (Vrms)	Chip Size					
		2220			3225		
		R0	R1	R2	R0	R1	R2
		180mm	180mm	330mm	180mm	180mm	330mm
		7"	7"	13"	7"	7"	13"
AV, AVY	14		1,000	4,000		1,000	2,500
	17		1,000	4,000		1,000	2,500
	20 - 35		1,000	4,000		1,000	1,500

**How to Order**

SEI Type		Vrms	Tolerance		Chip Size	Surge Current (Amps)	Packaging	
<b>AV</b>		<b>17</b>	<b>K</b>		<b>1206</b>	<b>201</b>	<b>R1</b>	
<b>Type</b>	<b>Description</b>		<b>Code</b>	<b>Tolerance</b>	<b>Size</b>		<b>SEI Types</b>	<b>Pkg Qty</b>
AV	Standard		K	10%	1206		R0, R1	180mm (7") Plastic Reel
AVY	High Temp				1210		R2	330mm (13") Plastic Reel
					1812			
					2220			
					3225			

**Device Ratings and Dimensions**

12V Power Supply														
Part Number	V <sub>RMS</sub>	V <sub>DC</sub>	V <sub>N</sub>	V <sub>JUMP</sub>	V <sub>C</sub>	I <sub>C</sub>	I <sub>P</sub>	W <sub>MAX</sub>	W <sub>LD</sub>	P <sub>MAX</sub>	C <sub>TYP</sub>	L	W	t <sub>MAX</sub>
	(volts)	(volts)	(volts)	(volts)	(volts)	(amps)	(amps)	(joules)	(joules)	(watts)	(nF)	(mm)	(mm)	(mm)
AV 14 K 0805 121	14	16	24	24.5	40	1	120	0.3	1	0.01	0.4	2 ± 0.2	1.25 ± 0.15	1
AV 17 K 0805 121	17	20	27	30	44	1	120	0.5	1	0.01	0.37	2 ± 0.2	1.25 ± 0.15	1
AV 14 K 1206 201	14	16	24	24.5	40	1	200	0.6	1.5	0.008	1	3.2 ± 0.3	1.6 ± 0.15	1.2
AV 17 K 1206 201	17	20	27	30	44	1	200	1.1	1.5	0.008	0.81	3.2 ± 0.3	1.6 ± 0.15	1.2
AV 14 K 1210 401	14	16	24	24.5	40	2.5	400	1.6	3	0.01	2.35	3.2 ± 0.3	2.5 ± 0.2	1.3
AV 17 K 1210 401	17	20	27	30	44	2.5	400	1.8	3	0.01	2	3.2 ± 0.3	2.5 ± 0.2	1.3
AV 14 K 1812 801	14	16	24	24.5	40	5	800	2.4	6	0.015	4.5	4.5 ± 0.35	3.2 ± 0.3	1.2
AV 17 K 1812 801	17	20	27	30	44	5	800	2.9	6	0.015	3.8	4.5 ± 0.35	3.2 ± 0.3	1.2
AV 14 K 2220 122	14	16	24	24.5	40	10	1200	5.8	12	0.03	10	5.7 ± 0.4	5 ± 0.4	1.2
AV 14 K 2220 202	14	16	24	24.5	40	10	2000	6	25	0.03	12	5.7 ± 0.4	5 ± 0.4	1.2
AV 17 K 2220 202	17	20	27	30	44	10	2000	7.2	25	0.03	8	5.7 ± 0.4	5 ± 0.4	1.2
AV 14 K 3225 202	14	16	24	24.5	40	10	2000	12.5	50	0.04	8.3	8 ± 0.5	6.3 ± 0.4	1.6
AV 17 K 3225 202	17	20	27	30	44	10	2000	13.8	50	0.04	6.6	8 ± 0.5	6.3 ± 0.4	1.6
24V Power Supply														
Part Number	V <sub>RMS</sub>	V <sub>DC</sub>	V <sub>N</sub>	V <sub>JUMP</sub>	V <sub>C</sub>	I <sub>C</sub>	I <sub>P</sub>	W <sub>MAX</sub>	W <sub>LD</sub>	P <sub>MAX</sub>	C <sub>TYP</sub>	L	W	t <sub>MAX</sub>
	(volts)	(volts)	(volts)	(volts)	(volts)	(amps)	(amps)	(joules)	(joules)	(watts)	(nF)	(mm)	(mm)	(mm)
AV 20 K 1206 201	20	26	33	30	54	1	200	1.6	1.5	0.008	0.78	3.2 ± 0.3	1.6 ± 0.15	1.2
AV 30 K 1206 201	30	34	47	50	77	1	200	2	1.5	0.008	0.53	3.2 ± 0.3	1.6 ± 0.15	1.2
AV 20 K 1210 401	20	26	33	30	54	2.5	400	1.9	3	0.01	1.65	3.2 ± 0.3	2.5 ± 0.2	1.3
AV 30 K 1210 401	30	34	47	50	77	2.5	400	2.3	3	0.01	1.1	3.2 ± 0.3	2.5 ± 0.2	1.3
AV 20 K 1812 801	20	26	33	30	54	5	800	3	6	0.015	3.3	4.5 ± 0.35	3.2 ± 0.3	1.2
AV 30 K 1812 801	30	34	47	50	77	5	800	3.8	6	0.015	2.2	4.5 ± 0.35	3.2 ± 0.3	1.2
AV 30 K 2220 122	30	34	47	50	77	10	1200	12	12	0.03	6.5	5.7 ± 0.4	5 ± 0.4	1.2
AV 20 K 2220 202	20	26	33	30	54	10	2000	8	25	0.03	7	5.7 ± 0.4	5 ± 0.4	1.2
AV 30 K 2220 202	30	34	47	50	77	10	2000	12	25	0.03	4.4	5.7 ± 0.4	5 ± 0.4	1.2
AV 20 K 3225 202	20	26	33	30	54	10	2000	15	50	0.04	5.5	8 ± 0.5	6.3 ± 0.4	1.6
AV 30 K 3225 202	30	34	47	50	77	10	2000	17	50	0.04	3.3	8 ± 0.5	6.3 ± 0.4	1.6
42V Power Supply														
Part Number	V <sub>RMS</sub>	V <sub>DC</sub>	V <sub>N</sub>	V <sub>JUMP</sub>	V <sub>C</sub>	I <sub>C</sub>	I <sub>P</sub>	W <sub>MAX</sub>	W <sub>LD</sub>	P <sub>MAX</sub>	C <sub>TYP</sub>	L	W	t <sub>MAX</sub>
	(volts)	(volts)	(volts)	(volts)	(volts)	(amps)	(amps)	(joules)	(joules)	(watts)	(nF)	(mm)	(mm)	(mm)
AV 35 K 1206 121	35	42	56	59	90	1	120	0.6	1.5	0.008	0.4	3.2 ± 0.3	1.6 ± 0.2	1.2
AV 35 K 1210 251	35	42	56	59	90	3	250	2.2	3	0.01	0.95	3.2 ± 0.3	2.5 ± 0.25	1.4
AV 35 K 1812 601	35	42	56	59	90	5	600	4.2	6	0.015	1.5	4.5 ± 0.35	3.2 ± 0.3	1.6
AV 35 K 2220 102	35	42	56	59	90	10	1000	7.6	12	0.02	3	5.7 ± 0.4	5 ± 0.4	1.8