

AV Series — Automotive SMD Varistors

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. 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.



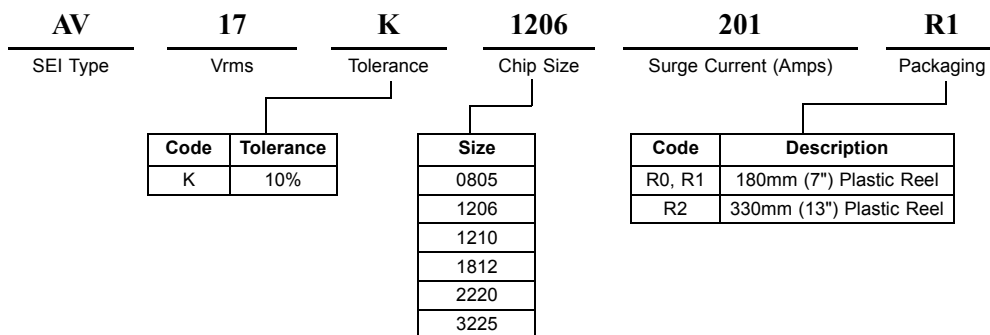
Features

- 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 0805, 1206, 1210, 1812, 2220, and 3225
- No plastic coating guarantees better flammability rating
- Dimensional and weight savings on PC board
- AgPd end terminations
- +125°C continuous operating temperature
- Ultra-low inductance, leadless chip guarantees the fastest response time to transient surges

General Technical Data

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

How to Order



Standard Packaging Options / Quantities

Series	Voltage Range (Vrms)	Chip Size									
		0805			1206			1210			
		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	14	1,000	3,500	15,000	1,000	2,500	15,000	1,000	2,500	15,000	
	17	1,000	3,500	14,000	1,000	2,500	14,000	1,000	2,500	14,000	
	20 – 35	N/A	N/A	N/A	1,000	2,500	10,000	1,000	2,500	9,000	
	Voltage Range (Vrms)	1812			2220			3225			
		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"
		14		1,000	6,000		1,000	4,000		1,000	2,500
		17		1,000	6,000		1,000	4,000		1,000	2,500
		20 – 35		1,000	4,000		1,000	4,000		1,000	1,500

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Device Ratings and Dimensions

Part Number	V _{RMS} (volts)	V _{DC} (volts)	V _N (volts)	V _{JUMP} (volts)	V _C (volts)	I _C (amps)	I _P (amps)	W _{MAX} (joules)	W _{LD} (joules)	P _{MAX} (watts)	C _{TYP} (nF)	L (mm)	W (mm)	t _{MAX} (mm)
12V Power Supply														
AV 14 K 0805 121	14	16	24	24.5	40	1.0	120	0.3	1.0	0.008	0.4	2.00 ± 0.20	1.25 ± 0.15	1.0
AV 17 K 0805 121	17	20	27	30	44	1.0	120	0.5	1.0	0.008	0.4	2.00 ± 0.20	1.25 ± 0.15	1.0
AV 14 K 1206 201	14	16	24	24.5	40	1.0	200	0.6	1.5	0.008	1.0	3.20 ± 0.30	1.60 ± 0.15	1.2
AV 17 K 1206 201	17	20	27	30	44	1.0	200	1.1	1.5	0.008	0.8	3.20 ± 0.30	1.60 ± 0.15	1.2
AV 14 K 1210 401	14	16	24	24.5	40	2.5	400	1.6	3.0	0.010	2.4	3.20 ± 0.30	2.50 ± 0.20	1.3
AV 17 K 1210 401	17	20	27	30	44	2.5	400	1.8	3.0	0.010	2.0	3.20 ± 0.30	2.50 ± 0.20	1.3
AV 14 K 1812 801	14	16	24	24.5	40	5.0	800	2.4	6.0	0.015	4.5	4.50 ± 0.35	3.20 ± 0.30	1.2
AV 17 K 1812 801	17	20	27	30	44	5.0	800	2.9	6.0	0.015	3.8	4.50 ± 0.35	3.20 ± 0.30	1.2
AV 14 K 2220 122	14	16	24	24.5	40	10.0	1,200	5.8	12.0	0.030	20.0	5.70 ± 0.40	5.00 ± 0.40	1.2
AV 17 K 2220 122	17	20	27	30	44	10.0	1,200	7.2	12.0	0.030	16.0	5.70 ± 0.40	5.00 ± 0.40	1.2
AV 14 K 3225 202	14	16	24	24.5	40	20.0	2,000	12.5	25.0	0.040	24.0	8.00 ± 0.50	6.30 ± 0.40	1.6
AV 17 K 3225 202	17	20	27	30	44	20.0	2,000	13.8	25.0	0.040	19.0	8.00 ± 0.50	6.30 ± 0.40	1.6
24V Power Supply														
AV 20 K 1206 201	20	26	33	30	54	1.0	200	1.6	1.5	0.008	0.8	3.20 ± 0.30	1.60 ± 0.15	1.2
AV 30 K 1206 201	30	34	47	50	77	1.0	100	2.0	1.5	0.008	0.5	3.20 ± 0.30	1.60 ± 0.15	1.2
AV 20 K 1210 401	20	26	33	30	54	2.5	400	1.9	3.0	0.010	1.7	3.20 ± 0.30	2.50 ± 0.20	1.3
AV 30 K 1210 401	30	34	47	50	77	2.5	250	2.3	3.0	0.010	1.1	3.20 ± 0.30	2.50 ± 0.20	1.3
AV 20 K 1812 801	20	26	33	30	54	5.0	800	3.0	6.0	0.015	3.3	4.50 ± 0.35	3.20 ± 0.30	1.2
AV 30 K 1812 801	30	34	47	50	77	5.0	500	3.8	6.0	0.015	2.2	4.50 ± 0.35	3.20 ± 0.30	1.2
AV 20 K 2220 122	20	26	33	30	54	10.0	1,200	8.0	12.0	0.030	14.0	5.70 ± 0.40	5.00 ± 0.40	1.2
AV 30 K 2220 122	30	34	47	50	77	10.0	1,200	12.0	12.0	0.030	13.0	5.70 ± 0.40	5.00 ± 0.40	1.2
AV 20 K 3225 202	20	26	33	30	54	20.0	2,000	15.0	25.0	0.040	17.0	8.00 ± 0.50	6.30 ± 0.40	1.6
AV 30 K 3225 202	30	34	47	50	77	20.0	2,000	17.0	25.0	0.040	10.0	8.00 ± 0.50	6.30 ± 0.40	1.6
42V Power Supply														
AV 35 K 1206 121	35	42	56	59	90	1.0	120	2.0	1.5	0.008	0.5	3.20 ± 0.30	1.60 ± 0.20	1.2
AV 35 K 1210 251	35	42	56	59	90	2.5	250	3.2	3.0	0.010	1.0	3.20 ± 0.30	2.50 ± 0.25	1.4
AV 35 K 1812 601	35	42	56	59	90	5.0	600	4.8	6.0	0.015	2.0	4.50 ± 0.35	3.20 ± 0.30	1.6
AV 35 K 2220 122	35	42	56	59	90	10.0	1,200	13.0	12.0	0.030	12.0	5.70 ± 0.40	5.00 ± 0.40	1.8
AV 35 K 3225 202	35	42	56	59	90	20.0	2,000	19.0	25.0	0.040	10.5	-	-	-