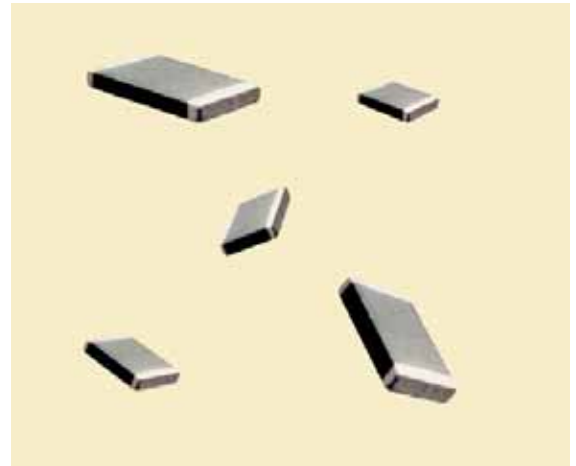


AUTOMOTIVE VARICONS® AV SERIES

Description

Almost all-electronic systems in an automobile, e.g. anti-block brake system, direct ignition system, airbag control system, wiper motors, etc. are susceptible to damage from destructive voltage transients. AV Varicons are transient suppressors with temperature independent suppression characteristics enabling protection from -55 °C to 125 °C.

AV Varicons offer excellent transient energy distribution. AV Varicons require significantly smaller space and pad area than silicon TVS diodes, offering greater circuit board layout flexibility for the designer.



Features

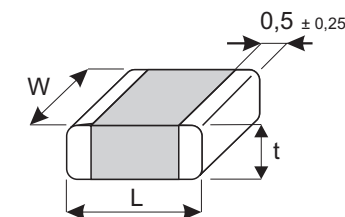
- Supply voltage12 V, 24 V and 42 V
- Operating voltage range V_{dc} 3 V to 170 V higher operating voltages available upon request.
- Load Dump Energy up to 50J available upon request.
- + 125 °C maximum continuous operating temperature
- Automotive Varicons with lower or higher capacitance available upon request also Varicons with 100 % controlled capacitance value available upon request.
- 6 Model sizes available... 0805, 1206, 1210, 1812, 2220, 3225.
- Leadless chip form near zero inductance guaranteeing the fastest speed of response to transient surges.
- Broad range of current and energy handling capabilities.
- Low clamping voltage - U_c .
- Absence of plastic coating guarantees better flammability rating.
- Non-sensitive to mildly activated fluxes (see Soldering Recommendations, page 25).
- End termination : AgPd or barrier type suitable for Pb-free soldering process - barrier type end terminations solderable with Pb-free solders according to JEDEC J-STD-020C and IEC60068-2-58.
- UI1449, C22.2 - File E221545 Section8.
- RoHS conform components complying to 2002/95/EC and 2003/11/EC.
- AEC-Q200 qualified Grade 1.

Absolute Maximum Ratings

Continuous :	Units	Value
Steady State Applied Voltage :		
DC Voltage Range (V_{dc})	V	16 to 56
Transient :		
Load Dump Energy, (WDL)	J	1 to 25 *
Jump Start Capability (5 minutes), (V_{jump})	V	24.5 to 65
Peak Single Pulse Surge Current, 8/20 μ s Waveform, (I_{max})	A	120 to 2000
Single Pulse Surge Energy, 10/1000 μ s Waveform (W_{max})	J	0.3 to 30
Operating Ambient Temperature	°C	-55 to +125
Storage Temperature Range	°C	-55 to +150
Threshold Voltage Temperature Coefficient	%/°C	< +0.05
Response Time	ns	< 2
Climatic Category		55/125/56

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

Device Ratings and Characteristics


AV 14 K 0805 121.....AV 40 K 3225 202

Type	V _{rms} V	V _{dc} V	V _n 1 mA V	V _{jump} 5 min V	V _c V	I _c 8/20 μs A	I _{max} 8/20 μs A	W _{max} 10/1000 μs J	WLD 10 x J	P max W	C _{typ} 1 kHz nF	L mm	W mm	t max mm
------	-----------------------	----------------------	-----------------------------	---------------------------------	---------------------	--------------------------------	----------------------------------	-------------------------------------	------------------	---------------	---------------------------------	---------	---------	----------------

12 V Power Supply

AV 14 K 0805 121	14	16	24	24,5	40	1	120	0,3	1	0,008	0,44	2,0 ± 0,25	1,25± 0,20	1,0
AV 14 K 1206 201	14	16	24	24,5	40	1	200	0,6	1,5	0,008	1,00	3,2 ± 0,30	1,60 ± 0,20	1,2
AV 14 K 1210 401	14	16	24	24,5	40	2,5	400	1,6	3	0,010	2,35	3,2 ± 0,30	2,50 ± 0,25	1,3
AV 14 K 1812 801	14	16	24	24,5	40	5	800	2,4	6	0,015	4,50	4,7 ± 0,40	3,20 ± 0,30	1,3
AV 14 K 2220 122	14	16	24	24,5	40	10	1200	5,8	12	0,030	10,00	5,7 ± 0,50	5,00 ± 0,40	1,4
AV 14 K 3225 202	14	16	24	24,5	40	20	2000	12,5	25	0,040	16,00	8,0 ± 0,50	6,30 ± 0,40	1,5
AV 17 K 0805 121	17	20	27	30	44	1	120	0,5	1	0,008	0,37	2,0 ± 0,25	1,25± 0,20	1,0
AV 17 K 1206 201	17	20	27	30	44	1	200	1,1	1,5	0,008	0,81	3,2 ± 0,30	1,60 ± 0,20	1,2
AV 17 K 1210 401	17	20	27	30	44	2,5	400	1,8	3	0,010	2,00	3,2 ± 0,30	2,50 ± 0,25	1,3
AV 17 K 1812 801	17	20	27	30	44	5	800	2,9	6	0,015	3,80	4,7 ± 0,40	3,20 ± 0,30	1,3
AV 17 K 2220 122	17	20	27	30	44	10	1200	7,2	12	0,030	8,00	5,7 ± 0,50	5,00 ± 0,40	1,4
AV 17 K 3225 202	17	20	27	30	44	20	2000	13,8	25	0,040	13,20	8,0 ± 0,50	6,30 ± 0,40	1,5

24 V Power Supply

AV 20 K 1206 201	20	26	33	30	54	1	200	1,6	1,5	0,008	0,78	3,2 ± 0,30	1,60 ± 0,20	1,2
AV 20 K 1210 401	20	26	33	30	54	2,5	400	1,9	3	0,010	1,65	3,2 ± 0,30	2,50 ± 0,25	1,3
AV 20 K 1812 801	20	26	33	30	54	5	800	3,0	6	0,015	3,30	4,7 ± 0,40	3,20 ± 0,30	1,3
AV 20 K 2220 122	20	26	33	30	54	10	1200	8,0	12	0,030	7,00	5,7 ± 0,50	5,00 ± 0,40	1,4
AV 20 K 3225 202	20	26	33	30	54	20	2000	15,0	25	0,040	11,00	8,0 ± 0,50	6,30 ± 0,40	1,5
AV 30 K 1206 201	30	34	47	50	77	1	200	2,0	1,5	0,008	0,53	3,2 ± 0,30	1,60 ± 0,20	1,2
AV 30 K 1210 401	30	34	47	50	77	2,5	400	2,3	3	0,010	1,10	3,2 ± 0,30	2,50 ± 0,25	1,3
AV 30 K 1812 801	30	34	47	50	77	5	800	3,8	6	0,015	2,20	4,7 ± 0,40	3,20 ± 0,30	1,3
AV 30 K 2220 122	30	34	47	50	77	10	1200	10,0	12	0,030	6,50	5,7 ± 0,50	5,00 ± 0,40	1,4
AV 30 K 3225 202	30	34	47	50	77	20	2000	17,0	25	0,040	6,60	8,0 ± 0,50	6,30 ± 0,40	1,5

42 V Power Supply

AV 40 K 1206 201	40	56	68	65	110	1	200	2,2	1,5	0,008	0,40	3,2 ± 0,30	1,6 ± 0,20	1,2
AV 40 K 1210 401	40	56	68	65	110	2,5	400	2,6	3	0,010	0,90	3,2 ± 0,30	2,5 ± 0,25	1,3
AV 40 K 1812 801	40	56	68	65	110	5	800	4,8	6	0,015	1,80	4,7 ± 0,40	3,2 ± 0,30	1,3
AV 40 K 2220 122	40	56	68	65	110	10	1200	10,5	12	0,030	5,50	5,7 ± 0,50	5,00 ± 0,40	1,4
AV 40 K 3225 202	40	56	68	65	110	20	2000	21	25	0,040	6,20	8,0 ± 0,50	6,30 ± 0,40	1,5