

# AV Series — Automotive Leaded Varistors

## Description

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

SEI/KEKO's AV Series of leaded automotive varistors includes both multilayer and single layer components, defined by  $W_{LD}$  capability. Multilayer devices are intended  $W_{LD}$  applications requiring up to 50 Joules of energy, and single layer discs are for  $W_{LD}$  applications requiring above 50 Joules of energy.

Automotive multilayer varistors offer excellent transient energy absorption due to improved internal energy distribution. Compared to an equivalent automotive disc varistor, they offer better electrical characteristic in much smaller size. Automotive disc varistors are specifically designed and used in applications requiring higher levels of  $W_{LD}$  energy absorption, which MLV devices are incapable of handling.



## Features

- AC operating voltage (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 realized with either type of construction
- In-line leads on automotive MLV varistors
- MLV varistors: +125°C continuous operating temperature for  $W_{LD}$  up to 50J
- SLV varistors: +85°C continuous operating temperature for  $W_{LD}$  above 50J

General Technical Data		
MLV Operating Ambient Temperature for $W_{LD}$ up to 50J	-40°C to +125°C	In accordance with CECC 42 000
MLV Storage temperature Range for $W_{LD}$ up to 50J	-40°C to +150°C	
SLV Operating Ambient Temperature for $W_{LD}$ above 50J	-40°C to +85°C	
SLV Storage temperature Range for $W_{LD}$ above 50J	-40°C to +125°C	
Threshold Voltage Temperature Coefficient	<-0.05%/°C	
Insulation Resistance	>1Gohm	
Response Time	<25ns	
MLV Climatic Category for $W_{LD}$ =<50J - MLV	40/125/56	
SLV Climatic Category for $W_{LD}$ =>50J - SLV	40/85/56	

## How to Order

AV		1		20		K		80		2		006		R	
SEI Type		Lead style		Vrms		Tolerance		Chip Size		Lead spacing		$W_{LD}$		Packaging	
Model size	Version	Code	Tolerance	Size	Code	Lead spacing	$W_{LD}$	Code	Description						
60 2	1 = Outward Crimped Leads	K	10%	60 = 6mm	2	5mm	003 = 3	B	Bulk						
80 2	1 = Straight Leads			80 = 8mm	3	7.5mm	006 = 6	R	Reel						
80 2	5 = Straight Leads, Kinked			90 = 9mm			012 = 12	A	Ammo Pack						
90 2	1 = Inward Crimped Leads			110 = 11mm			025 = 25								
110 3	1 = Inward Crimped Leads			20 = 20mm			050 = 50								
20, 40	1 = Straight Leads			40 = 40mm			100 = 100								

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## Standard Packaging Options / Quantities

Series	Voltage Range (Vrms)	Model Size	Packaging options 7mm, 10mm, 14mm, 20mm, and 23mm		
			B = Bulk; R = Reel; A = Ammo Pack		
			B	R	A
AV	14 – 35	60 2	1,500	2,000	2,000
	14 – 35	80 2	1,000	1,500	1,500
	14 – 35	90 2	1,000	1,500	1,500
	14 – 20	110 3	700	1,000	1,000
	25 – 35	20	400	700	800
	25 – 35	40	400	700	800

## Device Ratings and Dimensions

Part Number	V <sub>RMS</sub> (volts)	V <sub>DC</sub> (volts)	V <sub>N</sub> (volts)	V <sub>JUMP</sub> (volts)	V <sub>C</sub> (volts)	I <sub>C</sub> (amps)	I <sub>P</sub> (amps)	W <sub>MAX</sub> (joules)	W <sub>LD</sub> (joules)	P <sub>MAX</sub> (watts)	C <sub>TYP</sub> (nF)	D <sub>MAX</sub> (mm)	h <sub>MAX</sub> (mm)	R (mm)	d (mm)	t <sub>MAX</sub> (mm)
<b>12V Power Supply</b>																
AV 14 K 602 003	14	16	24	24.5	40	2.5	400	1.6	3.0	0.010	2,500	7.0	7.0	5.0	0.6	4.5
AV 17 K 602 003	17	20	27	30	44	2.5	400	1.8	3.0	0.010	2,000	7.0	7.0	5.0	0.6	4.5
<b>14V Power Supply</b>																
AV 14 K 802 006	14	16	24	24.5	40	5	800	2.4	6.0	0.015	4,600	8.0	9.0	5.0	0.6	4.5
AV 17 K 802 006	17	20	27	30	44	5	800	2.9	6.0	0.015	4,000	8.0	9.0	5.0	0.6	4.5
<b>16V Power Supply</b>																
AV 14 K 902 012	14	16	24	24.5	40	5	1,200	4.4	12.0	0.030	10,500	9.0	12.0	7.5	0.6	4.5
AV 14 K 902 025	14	16	24	24.5	40	10	2,000	6.0	25.0	0.080	22,000	9.0	12.0	7.5	0.6	4.5
AV 17 K 902 025	17	20	27	30	44	10	2,000	7.2	25.0	0.080	18,000	9.0	12.0	7.5	0.6	4.5
<b>18V Power Supply</b>																
AV 14 K 1103 050	14	16	24	24.5	40	10	2,000	13.2	50.0	0.040	29,000	11.0	12.0	7.5	0.6	6.5
AV 17 K 1103 050	17	20	27	30	44	10	2,000	15.8	50.0	0.040	24,000	11.0	12.0	7.5	0.6	6.5
<b>24V Power Supply</b>																
AV 20 K 602 003	20	26	33	30	54	2.5	400	1.9	3.0	0.010	1,800	7.0	7.0	5.0	0.6	4.5
AV 30 K 602 003	30	34	47	50	77	2.5	400	2.3	3.0	0.010	1,300	7.0	7.0	5.0	0.6	4.5
<b>26V Power Supply</b>																
AV 20 K 802 006	20	26	33	30	54	5	800	3.0	6.0	0.015	3,500	8.0	9.0	5.0	0.6	4.5
AV 30 K 802 006	30	34	47	50	77	5	800	3.8	6.0	0.015	2,000	8.0	9.0	5.0	0.6	4.5
<b>28V Power Supply</b>																
AV 20 K 902 025	20	26	33	30	54	10	2,000	9.0	25.0	0.080	7,500	9.0	12.0	7.5	0.6	4.5
AV 30 K 902 025	30	34	47	50	77	10	2,000	18.0	25.0	0.080	16,000	9.0	12.0	7.5	0.6	4.5
<b>30V Power Supply</b>																
AV 20 K 1103 050	20	26	33	30	54	10	2,000	17.0	50.0	0.100	18,000	11.0	12.0	7.5	0.6	6.5
<b>32V Power Supply</b>																
AV 25 K 20 050	25	28	39	40	77	20	2,000	28.0	50.0	0.200	14,000	22.5	24.0	10.0	1.0	4.5
AV 30 K 20 050	30	34	47	50	93	20	2,000	34.0	50.0	0.200	13,500	22.5	24.0	10.0	1.0	4.5
<b>36V Power Supply</b>																
AV 25 K 40 100	25	28	39	40	77	20	2,000	50.0	100.0	0.300	28,000	22.5	24.0	10.0	1.0	5.6
AV 30 K 40 100	30	34	47	50	93	20	2,000	60.0	100.0	0.300	26,000	22.5	24.0	10.0	1.0	5.6
<b>42V Power Supply</b>																
AV 35 K 602 003	35	42	56	59	90	2.5	400	2.6	3	0.010	1,000	7.0	7.0	5.0	0.6	4.5
<b>44V Power Supply</b>																
AV 35 K 802 006	35	42	56	59	90	5	800	4.8	6	0.015	1,500	8.0	9.0	5.0	0.6	4.5
<b>46V Power Supply</b>																
AV 35 K 902 025	35	42	56	59	90	10	2,000	20.0	25	0.080	12,800	9.0	12.0	7.5	0.6	4.5
<b>48V Power Supply</b>																
AV 35 K 40 050	35	42	56	59	110	20	2,000	41.0	50	0.200	12,000	22.5	24.0	10.0	1.0	5.6
AV 35 K 40 100	35	42	56	59	110	20	2,000	76.0	100	0.300	23,000	22.5	24.0	10.0	1.0	5.6