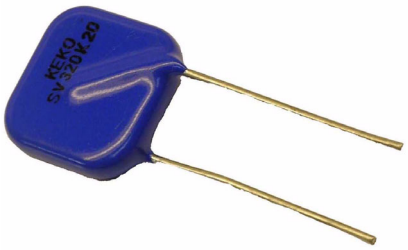
SV Series — Special Medium Voltage Leaded Varistors

Description



The SV Series of transient voltage suppressors are epoxy-coated square or rectangular shaped leaded varistors with AC operating voltage ranging 60V to 550V. There are two versions of these varistors.

The standard version of square varistors, featuring extremely high-current and high-energy capabilities and low clamping voltages, provides an increased level of protection necessary for the transients expected in telecommunications and AC power networks. Compared to standard disc varistors, SV series varistors realize electrical equivalent values in smaller nominal dimensions.

In the custom version of the SV series, a customers can design (on their own or with our help) an optimum varistor with minimum dimensions to satisfy a specific application. A customer can choose from the following parameters: non-standard DC/AC operating voltage, leakage current, clamping voltage, maximum surge current, energy absorption level, maximum dissipation power, as well as shape (dimensions being the function of required electrical parameters and vice-versa.

Features

Standard Varistor Types

- AC operating voltage (Vrms) from 60V to 680V
- DC operating voltage (Vdc) from 85V to 895V
- 6 model sizes equivalent to standard disc varistors from 5mm to 23mm
- Smaller nominal dimensions
- Broad range of current and energy handling capabilities
- +85°C continuous operating temperature
- Low clamping voltage
- Available with straight and crimped leads
- UL, CAC, CEDD approved
- Available in tape and reel for automatic pick and place

Full Custom Parameter Design Varistors

- AC operating voltage range (Vrms) from 60V to 680V
- DC operating voltage (Vdc) from 85V to 895V
- Indefinite number of both square and rectangular shape, the maximum one being 23x23mm
- Broad range of current and energy handling capabilities
- +85°C continuous operating temperature
- Electrical parameters available for custom designs are: AC/DC operating voltage, leakage current, clamping voltage, maximum surge current, energy absorption level, maximum dissipation power and threshold voltage temperature coefficient

General Technical Data

Climatic Category	40 / 85 / 56	In accordance with IEC 60068-1
Operating Temperature	-40°C to +85°C	In accordance with CECC 42 000
Storage Temperature Range	-40°C to +125°C	
Threshold Voltage Temperature Coefficient	<-0.05%/°C	
Isolation Voltage Capability	>2.5kV	In accordance with CECC 42 000
Response Time	< 25 nS	
Insulation Resistance	>1 Gohm	In accordance with CECC 42 000

How to Order

SV	1	140	K	14	B	XX
SEI Type	Lead Style	Vrms	Tolerance	Disc Diameter	Packaging	Special

Lead Style	Description
1	Straight
5	Kinked

Code	Tolerance
K	10%
S	Special

Size (mm)
5
7
10
14
20
23

Code	Description
B	Bulk
R	Tape and reel
A	Ammo

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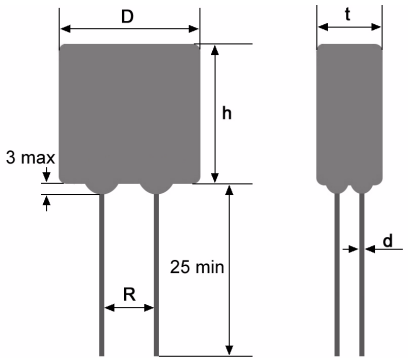
Standard Packaging Options / Quantities

Series	Voltage Range (Vrms)	5mm		7mm		10mm		14mm		20mm		23mm
		Reel	Bulk	Reel	Bulk	Reel	Bulk	Reel	Bulk	Reel	Bulk	Bulk
SV	60	1,500	1,300	1,500	1,000	1,300	500	600	400	600	250	N/A
	75	1,300	1,300	1,300	1,000	1,300	500	600	400	600	250	N/A
	95	1,300	1,300	1,300	900	1,200	500	600	400	500	250	N/A
	115 – 140	1,300	1,300	1,300	900	1,200	400	500	400	500	250	150
	150 – 175	1,200	1,300	1,200	900	1,000	400	500	400	500	250	150
	230	1,000	900	1,200	900	1,000	400	500	250	500	250	150
	250 – 275	1,000	900	1,000	900	900	400	400	250	400	250	150
	300	N/A	N/A	900	900	800	400	400	250	400	150	150
	320	N/A	N/A	N/A	N/A	800	400	400	250	300	150	100
	385 – 420	N/A	N/A	N/A	N/A	700	300	300	250	300	150	100
	460 – 680	N/A	N/A	N/A	N/A	600	300	300	250	300	150	100



Device Ratings and Dimensions

Part Number	V_{RMS} (volts)	V_{DC} (volts)	V_N (volts)	V_C (volts)	I_C (amps)	W_{MAX} (joules	P_{MAX} (watts)	I_P (amps)	C_{TYP} (pF)	D_{MAX} (mm)	t_{MAX} (mm)	R (mm)	d (mm)	h_{MAX} (mm)
SV 60 K 05	60	85	100	155	5	4.0	0.10	600	370	7.0	3.5	5.0	0.6	9.5
SV 75 K 05	75	100	120	190	5	5.0	0.10	600	300	7.0	3.6	5.0	0.6	9.5
SV 95 K 05	95	125	150	240	5	7.0	0.10	600	240	7.0	3.8	5.0	0.6	9.5
SV 115 K 05	115	150	180	290	5	8.0	0.10	600	200	7.0	4.0	5.0	0.6	9.5
SV 130 K 05	130	170	205	320	5	9.0	0.10	600	180	7.0	4.0	5.0	0.6	9.5
SV 140 K 05	140	180	220	340	5	9.0	0.10	600	170	7.0	4.1	5.0	0.6	9.5
SV 150 K 05	150	200	240	360	5	11.0	0.10	600	160	7.0	4.3	5.0	0.6	9.5
SV 175 K 05	175	225	270	420	5	11.0	0.10	600	140	7.0	4.8	5.0	0.6	9.5
SV 230 K 05	230	300	360	550	5	16.0	0.10	600	110	7.0	4.8	5.0	0.6	9.5
SV 250 K 05	250	320	390	590	5	17.0	0.10	600	100	7.0	5.0	5.0	0.6	9.5
SV 275 K 05	275	350	430	680	5	20.0	0.10	600	90	7.0	5.6	5.0	0.6	9.5
SV 60 K 07	60	85	100	155	10	9.0	0.25	1,750	900	9.0	3.5	5.0	0.6	11.5
SV 75 K 07	75	100	120	190	10	11.0	0.25	1,750	720	9.0	3.6	5.0	0.6	11.5
SV 95 K 07	95	125	150	240	10	14.0	0.25	1,750	580	9.0	3.8	5.0	0.6	11.5
SV 115 K 07	115	150	180	290	10	16.0	0.25	1,750	480	9.0	4.0	5.0	0.6	11.5
SV 130 K 07	130	170	205	320	10	19.0	0.25	1,750	430	9.0	4.0	5.0	0.6	11.5
SV 140 K 07	140	180	220	340	10	22.0	0.25	1,750	400	9.0	4.1	5.0	0.6	11.5
SV 150 K 07	150	200	240	360	10	23.0	0.25	1,750	380	9.0	4.3	5.0	0.6	11.5
SV 175 K 07	175	225	270	420	10	26.0	0.25	1,750	330	9.0	4.8	5.0	0.6	11.5
SV 230 K 07	230	300	360	550	10	35.0	0.25	1,750	250	9.0	4.8	5.0	0.6	11.5
SV 250 K 07	250	320	390	590	10	38.0	0.25	1,750	240	9.0	5.0	5.0	0.6	11.5
SV 275 K 07	275	350	430	680	10	44.0	0.25	1,750	220	9.0	5.6	5.0	0.6	11.5
SV 300 K 07	300	385	470	700	10	46.0	0.25	1,750	200	9.0	5.8	5.0	0.6	11.5

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Part Number	V_{RMS} (volts)	V_{DC} (volts)	V_N (volts)	V_C (volts)	I_C (amps)	W_{MAX} (joules	P_{MAX} (watts)	I_P (amps)	C_{TYP} (pF)	D_{MAX} (mm)	t_{MAX} (mm)	R (mm)	d (mm)	h_{MAX} (mm)
SV 60 K 10	60	85	100	155	25	20	0.40	3,500	1,380	12.0	4.1	7.5	0.8	15.0
SV 75 K 10	75	100	120	190	25	26	0.40	3,500	1,080	12.0	4.2	7.5	0.8	15.0
SV 95 K 10	95	125	150	240	25	31	0.40	3,500	870	12.0	4.3	7.5	0.8	15.0
SV 115 K 10	115	150	180	290	25	37	0.40	3,500	750	12.0	4.3	7.5	0.8	15.0
SV 130 K 10	130	170	205	320	25	42	0.40	3,500	670	12.0	4.5	7.5	0.8	15.0
SV 140 K 10	140	180	220	340	25	46	0.40	3,500	620	12.0	4.6	7.5	0.8	15.0
SV 150 K 10	150	200	240	360	25	51	0.40	3,500	590	12.0	4.8	7.5	0.8	15.0
SV 175 K 10	175	225	270	420	25	28	0.40	3,500	500	12.0	5.0	7.5	0.8	15.0
SV 230 K 10	230	300	360	550	25	78	0.40	3,500	400	12.0	5.4	7.5	0.8	15.0
SV 250 K 10	250	320	390	590	25	85	0.40	3,500	370	12.0	5.6	7.5	0.8	15.0
SV 275 K 10	275	350	430	680	25	97	0.40	3,500	350	12.0	6.0	7.5	0.8	15.0
SV 300 K 10	300	385	470	700	25	102	0.40	3,500	320	12.0	6.1	7.5	0.8	15.0
SV 320 K 10	320	420	510	760	25	144	0.40	3,500	300	12.0	6.5	7.5	0.8	15.0
SV 385 K 10	385	505	620	900	25	116	0.40	3,500	270	12.0	6.9	7.5	0.8	15.0
SV 420 K 10	420	560	680	980	25	121	0.40	3,500	240	12.0	7.3	7.5	0.8	15.0
SV 460 K 10	460	615	750	1,080	25	132	0.40	3,500	230	12.0	7.8	7.5	0.8	15.0
SV 510 K 10	510	670	820	1,200	25	144	0.40	3,500	210	12.0	8.2	7.5	0.8	15.0
SV 550 K 10	550	745	910	1,350	25	168	0.40	3,500	200	12.0	8.8	7.5	0.8	15.0
SV 575 K 10	575	750	950	1,400	25	172	0.40	3,500	190	12.0	8.9	7.5	0.8	15.0
SV 625 K 10	625	825	1,000	1,450	25	185	0.40	3,500	180	12.0	9.1	7.5	0.8	15.0
SV 680 K 10	680	895	1,100	1,700	25	197	0.40	3,500	170	12.0	9.7	7.5	0.8	15.0
SV 60 K 14	60	85	100	155	50	42	0.60	8,000	2,300	16.0	4.2	7.5	0.8	19.0
SV 75 K 14	75	100	120	190	50	51	0.60	8,000	1,850	16.0	4.2	7.5	0.8	19.0
SV 95 K 14	95	125	150	240	50	64	0.60	8,000	1,480	16.0	4.3	7.5	0.8	19.0
SV 115 K 14	115	150	180	290	50	78	0.60	8,000	1,230	16.0	4.4	7.5	0.8	19.0
SV 130 K 14	130	170	205	320	50	85	0.60	8,000	1,100	16.0	4.6	7.5	0.8	19.0
SV 140 K 14	140	180	220	340	50	94	0.60	8,000	1,020	16.0	4.7	7.5	0.8	19.0
SV 150 K 14	150	200	240	360	50	101	0.60	8,000	690	16.0	4.8	7.5	0.8	19.0
SV 175 K 14	175	225	270	420	50	119	0.60	8,000	830	16.0	5.0	7.5	0.8	19.0
SV 230 K 14	230	300	360	550	50	157	0.60	8,000	650	16.0	5.5	7.5	0.8	19.0
SV 250 K 14	250	320	390	590	50	169	0.60	8,000	600	16.0	5.7	7.5	0.8	19.0
SV 275 K 14	275	350	430	680	50	187	0.60	8,000	550	16.0	6.0	7.5	0.8	19.0
SV 300 K 14	300	385	470	700	50	211	0.60	8,000	510	16.0	6.1	7.5	0.8	19.0
SV 320 K 14	320	420	510	760	50	230	0.60	8,000	480	16.0	6.8	7.5	0.8	19.0
SV 385 K 14	385	505	620	900	50	241	0.60	8,000	410	16.0	6.9	7.5	0.8	19.0
SV 420 K 14	420	560	680	980	50	253	0.60	8,000	380	16.0	7.4	7.5	0.8	19.0
SV 460 K 14	460	615	750	1,080	50	275	0.60	8,000	350	16.0	7.8	7.5	0.8	19.0
SV 510 K 14	510	670	820	1,200	50	284	0.60	8,000	330	16.0	8.2	7.5	0.8	19.0
SV 550 K 14	550	745	910	1,350	50	330	0.60	8,000	310	16.0	8.8	7.5	0.8	19.0
SV 575 K 14	575	750	950	1,400	50	340	0.60	8,000	300	16.0	8.9	7.5	0.8	19.0
SV 625 K 14	625	825	1,000	1,450	50	360	0.60	8,000	280	16.0	9.5	7.5	0.8	19.0
SV 680 K 14	680	895	1,100	1,700	50	390	0.60	8,000	270	16.0	10.1	7.5	0.8	19.0

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Part Number	V_{RMS} (volts)	V_{DC} (volts)	V_N (volts)	V_C (volts)	I_C (amps)	W_{MAX} (joules	P_{MAX} (watts)	I_P (amps)	C_{TYP} (pF)	D_{MAX} (mm)	t_{MAX} (mm)	R (mm)	d (mm)	h_{MAX} (mm)
SV 60 K 20	60	85	100	155	100	89	1.00	12,000	3,400	22.5	4.5	10.0	1.0	26.0
SV 75 K 20	75	100	120	190	100	101	1.00	12,000	3,100	22.5	4.6	10.0	1.0	26.0
SV 95 K 20	95	125	150	240	100	133	1.00	12,000	2,700	22.5	4.6	10.0	1.0	26.0
SV 115 K 20	115	150	180	290	100	147	1.00	12,000	2,200	22.5	4.8	10.0	1.0	26.0
SV 130 K 20	130	170	205	320	100	222	1.00	12,000	3,390	22.5	5.0	10.0	1.0	26.0
SV 140 K 20	140	180	220	340	100	196	1.00	12,000	1,900	22.5	5.4	10.0	1.0	26.0
SV 150 K 20	150	200	240	360	100	213	1.00	12,000	1,740	22.5	5.6	10.0	1.0	26.0
SV 175 K 20	175	225	270	420	100	241	1.00	12,000	1,630	22.5	5.8	10.0	1.0	26.0
SV 230 K 20	230	300	360	550	100	322	1.00	12,000	1,220	22.5	5.9	10.0	1.0	26.0
SV 250 K 20	250	320	390	590	100	345	1.00	12,000	1,130	22.5	6.1	10.0	1.0	26.0
SV 275 K 20	275	350	430	680	100	380	1.00	12,000	1,030	22.5	6.3	10.0	1.0	26.0
SV 300 K 20	300	385	470	700	100	437	1.00	12,000	940	22.5	6.6	10.0	1.0	26.0
SV 320 K 20	320	420	510	760	100	485	1.00	12,000	860	22.5	6.8	10.0	1.0	27.0
SV 385 K 20	385	505	620	900	100	495	1.00	12,000	710	22.5	7.5	10.0	1.0	27.0
SV 420 K 20	420	560	680	980	100	523	1.00	12,000	680	22.5	7.8	10.0	1.0	27.0
SV 460 K 20	460	615	750	1,080	100	572	1.00	12,000	620	22.5	8.2	10.0	1.0	27.0
SV 510 K 20	510	670	820	1,200	100	598	1.00	12,000	570	22.5	8.7	10.0	1.0	27.0
SV 550 K 20	550	745	910	1,350	100	644	1.00	12,000	510	22.5	9.2	10.0	1.0	27.0
SV 575 K 20	575	750	950	1,400	100	670	1.00	12,000	490	22.5	9.4	10.0	1.0	27.0
SV 625 K 20	625	825	1,000	1,450	100	720	1.00	12,000	460	22.5	9.7	10.0	1.0	27.0
SV 680 K 20	680	895	1,100	1,700	100	780	1.00	12,000	430	22.5	10.3	10.0	1.0	27.0
SV 130 K 23	130	170	205	320	100	222	1.00	15,000	3,390	25.0	5.0	10.0	1.0	27.0
SV 140 K 23	140	180	220	340	100	247	1.00	15,000	3,340	25.0	5.4	10.0	1.0	27.0
SV 150 K 23	150	200	240	360	100	270	1.00	15,000	3,050	25.0	5.6	10.0	1.0	27.0
SV 175 K 23	175	225	270	420	100	305	1.00	15,000	2,870	25.0	5.8	10.0	1.0	27.0
SV 230 K 23	230	300	360	550	100	407	1.00	15,000	2,020	25.0	5.9	10.0	1.0	27.0
SV 250 K 23	250	320	390	590	100	437	1.00	15,000	1,980	25.0	6.1	10.0	1.0	27.0
SV 275 K 23	275	350	430	680	100	481	1.00	15,000	1,800	25.0	6.3	10.0	1.0	27.0
SV 300 K 23	300	385	470	700	100	554	1.00	15,000	1,650	25.0	6.6	10.0	1.0	29.0
SV 320 K 23	320	420	510	760	100	611	1.00	15,000	1,520	25.0	6.8	10.0	1.0	29.0
SV 385 K 23	385	505	620	900	100	624	1.00	15,000	1,250	25.0	7.5	10.0	1.0	29.0
SV 420 K 23	420	560	680	980	100	670	1.00	15,000	1,200	25.0	7.8	10.0	1.0	29.0
SV 460 K 23	460	615	750	1,080	100	728	1.00	15,000	1,080	25.0	8.2	10.0	1.0	29.0
SV 510 K 23	510	670	820	1,200	100	750	1.00	15,000	1,000	25.0	8.7	10.0	1.0	29.0
SV 550 K 23	550	745	910	1,350	100	815	1.00	15,000	900	25.0	9.2	10.0	1.0	29.0
SV 575 K 23	575	750	950	1,400	100	850	1.00	15,000	850	25.0	9.4	10.0	1.0	29.0
SV 625 K 23	625	825	1,000	1,450	100	900	1.00	15,000	750	25.0	9.7	10.0	1.0	29.0
SV 680 K 23	680	895	1,100	1,700	100	980	1.00	15,000	730	25.0	10.3	10.0	1.0	29.0

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