

Description:

The SV Series of transient voltage suppressors are epoxy-coated square or rectangular shaped leaded varistors with AC operating voltage ranging 60V to 680V. 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 customer 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 5 mm to 23 mm
- 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
- UL1449, 3rd Ed. and CSA C22.2 certified
- Available in tape and reel for automatic pick and place
- 100% RoHS compliant and lead free without exemption
- Halogen free
- REACH compliant

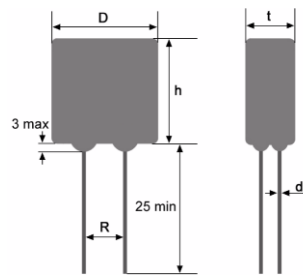
Full Custom Parameter Design Varistors

- AC operating voltage range (Vrms) from 60V to 1000V
- DC operating voltage (Vdc) from 85V to 1300V
- Indefinite number of both square and rectangular shape, the maximum one being 23 x 23 mm
- Broad range of current and energy handling capabilities
- +125°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
- Available in tape and reel for automatic pick and place
- 100% RoHS compliant and lead free without exemption
- Halogen free
- REACH compliant

General Technical Data	
Climatic Category	40 / 85 / 56
Operating Temperature	-40 °C to +85 °C
Storage Temperature Range	-40 °C to +125 °C
Minimum Threshold Voltage Temperature Coefficient	-0.001% / °C
Isolation Voltage Capability	> 2.5 kV
Response Time	< 25 nS
Insulation Resistance	> 1 Gohm

Standard Packaging Options / Quantities												
Series	Voltage Range (Vrms)	5 mm		7 mm		10 mm		14 mm		20 mm		23 mm
		TR	Bulk	TR	Bulk	TR	Bulk	TR	Bulk	TR	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	Vrms (volts)	Vdc (volts)	Vn (@ 1mA) (volts)	Vc (volts)	Ic (amps)	W _{MAX} (10/1000 μSec) (joules)	P max (watts)	I _{MAX} (8/20 μSec) (amps)	C _{TYP} 1 kHz (pF)	D max (mm)	t max (mm)	R (mm)	d (mm)	h max (mm)
SV60K05	60	85	100	155	5	4	0.1	600	370	7	3.5	5	0.6	9.5
SV60K07	60	85	100	155	10	9	0.25	1750	900	9	3.5	5	0.6	11.5
SV60K10	60	85	100	155	25	20	0.4	3500	1380	12	4.1	7.5	0.8	15
SV60K14	60	85	100	155	50	42	0.6	8000	2300	16	4.2	7.5	0.8	19
SV60K20	60	85	100	155	100	89	1	12000	3400	22.5	4.5	10	0.8	26
SV75K05	75	100	120	190	5	5	0.1	600	300	7	3.6	5	0.6	9.5
SV75K07	75	100	120	190	10	11	0.25	1750	720	9	3.6	5	0.6	11.5
SV75K10	75	100	120	190	25	26	0.4	3500	1080	12	4.2	7.5	0.8	15
SV75K14	75	100	120	190	50	51	0.6	8000	1850	16	4.2	7.5	0.8	19
SV75K20	75	100	120	190	100	101	1	12000	3100	22.5	4.6	10	0.8	26
SV95K05	95	125	150	240	5	7	0.1	600	240	7	3.8	5	0.6	9.5
SV95K07	95	125	150	240	10	14	0.25	1750	580	9	3.8	5	0.6	11.5
SV95K10	95	125	150	240	25	31	0.4	3500	870	12	4.3	7.5	0.8	15
SV95K14	95	125	150	240	50	64	0.6	8000	1480	16	4.3	7.5	0.8	19
SV95K20	95	125	150	240	100	133	1	12000	2700	22.5	4.6	10	0.8	26
SV115K05	115	150	180	290	5	8	0.1	600	200	7	4	5	0.6	9.5
SV115K07	115	150	180	290	10	16	0.25	1750	480	9	4	5	0.6	11.5
SV115K10	115	150	180	290	25	37	0.4	3500	750	12	4.3	7.5	0.8	15
SV115K14	115	150	180	290	50	78	0.6	8000	1230	16	4.4	7.5	0.8	19
SV115K20	115	150	180	290	100	147	1	12000	2200	22.5	4.8	10	0.8	26

Device Ratings and Dimensions (cont.)

Part Number	Vrms (volts)	Vdc (volts)	Vn (@ 1mA) (volts)	Vc (volts)	Ic (amps)	W _{MAX} (10/1000 µSec) (joules)	P max (watts)	I _{MAX} (8/20 µSec) (amps)	C _{TYP} 1 kHz (pF)	D max (mm)	t max (mm)	R (mm)	d (mm)	h max (mm)
SV130K05	130	170	205	320	5	9	0.1	600	180	7	4	5	0.6	9.5
SV130K07	130	170	205	320	10	19	0.25	1750	430	9	4	5	0.6	11.5
SV130K10	130	170	205	320	25	42	0.4	3500	670	12	4.5	7.5	0.8	15
SV130K14	130	170	205	320	50	85	0.6	8000	1100	16	4.6	7.5	0.8	19
SV130K20	130	170	205	320	100	177	1	12000	2150	22.5	5	10	1	26
SV130K23	130	170	205	320	100	222	1	15000	3390	25	5	10	1	27
SV140K05	140	180	220	340	5	9	0.1	600	170	7	4.1	5	0.6	9.5
SV140K07	140	180	220	340	10	22	0.25	1750	400	9	4.1	5	0.6	11.5
SV140K10	140	180	220	340	25	46	0.4	3500	620	12	4.6	7.5	0.8	15
SV140K14	140	180	220	340	50	94	0.6	8000	1020	16	4.7	7.5	0.8	19
SV140K20	140	180	220	340	100	196	1	12000	1900	22.5	5.4	10	1	26
SV140K23	140	180	220	340	100	247	1	15000	3340	25	5.4	10	1	27
SV150K05	150	200	240	360	5	11	0.1	600	160	7	4.3	5	0.6	9.5
SV150K07	150	200	240	360	10	23	0.25	1750	380	9	4.3	5	0.6	11.5
SV150K10	150	200	240	360	25	51	0.4	3500	590	12	4.8	7.5	0.8	15
SV150K14	150	200	240	360	50	101	0.6	8000	690	16	4.8	7.5	0.8	19
SV150K20	150	200	240	360	100	213	1	12000	1740	22.5	5.6	10	1	26
SV150K23	150	200	240	360	100	270	1	15000	3050	25	5.6	10	1	27
SV175K05	175	225	270	420	5	11	0.1	600	140	7	4.8	5	0.6	9.5
SV175K07	175	225	270	420	10	26	0.25	1750	330	9	4.8	5	0.6	11.5
SV175K10	175	225	270	420	25	58	0.4	3500	500	12	5	7.5	0.8	15
SV175K14	175	225	270	420	50	119	0.6	8000	830	16	5	7.5	0.8	19
SV175K20	175	225	270	420	100	241	1	12000	1630	22.5	5.8	10	1	26
SV175K23	175	225	270	420	100	305	1	15000	2870	25	5.8	10	1	27
SV230K05	230	300	360	550	5	16	0.1	600	110	7	4.8	5	0.6	9.5
SV230K07	230	300	360	550	10	35	0.25	1750	250	9	4.8	5	0.6	11.5
SV230K10	230	300	360	550	25	78	0.4	3500	400	12	5.4	7.5	0.8	15
SV230K14	230	300	360	550	50	157	0.6	8000	650	16	5.5	7.5	0.8	19
SV230K20	230	300	360	550	100	322	1	12000	1220	22.5	5.9	10	1	26
SV230K23	230	300	360	550	100	407	1	15000	2020	25	5.9	10	1	27
SV250K05	250	320	390	590	5	17	0.1	600	100	7	5	5	0.6	9.5
SV250K07	250	320	390	590	10	38	0.25	1750	240	9	5	5	0.6	11.5
SV250K10	250	320	390	590	25	85	0.4	3500	370	12	5.6	7.5	0.8	15
SV250K14	250	320	390	590	50	169	0.6	8000	600	16	5.7	7.5	0.8	19
SV250K20	250	320	390	590	100	345	1	12000	1130	22.5	6.1	10	1	26
SV250K23	250	320	390	590	100	437	1	15000	1980	25	6.1	10	1	27
SV275K05	275	350	430	680	5	20	0.1	600	90	7	5.6	5	0.6	9.5
SV275K07	275	350	430	680	10	44	0.25	1750	220	9	5.6	5	0.6	11.5
SV275K10	275	350	430	680	25	97	0.4	3500	350	12	6	7.5	0.8	15
SV275K14	275	350	430	680	50	187	0.6	8000	550	16	6	7.5	0.8	19
SV275K20	275	350	430	680	100	380	1	12000	1030	22.5	6.3	10	1	26
SV275K23	275	350	430	680	100	481	1	15000	1800	25	6.3	10	1	27
SV300K07	300	385	470	700	10	46	0.25	1750	200	9	5.8	5	0.6	11.5
SV300K10	300	385	470	700	25	102	0.4	3500	320	12	6.1	7.5	0.8	15
SV300K14	300	385	470	700	50	211	0.6	8000	510	16	6.1	7.5	0.8	19
SV300K20	300	385	470	700	100	437	1	12000	940	22.5	6.6	10	1	27
SV300K23	300	385	470	700	100	554	1	15000	1650	25	6.6	10	1	29
SV320K10	320	420	510	760	25	144	0.4	3500	300	12	6.5	7.5	0.8	15
SV320K14	320	420	510	760	50	230	0.6	8000	480	16	6.8	7.5	0.8	19
SV320K20	320	420	510	760	100	485	1	12000	860	22.5	6.8	10	1	27
SV320K23	320	420	510	760	100	611	1	15000	1520	25	6.8	10	1	29

Device Ratings and Dimensions (cont.)

Part Number	Vrms (volts)	Vdc (volts)	Vn (@ 1mA) (volts)	Vc (volts)	Ic (amps)	W _{MAX} (10/1000 µSec) (joules)	P max (watts)	I _{MAX} (8/20 µSec) (amps)	C _{TYP} 1 kHz (pF)	D max (mm)	t max (mm)	R (mm)	d (mm)	h max (mm)
SV385K10	385	505	620	900	25	116	0.4	3500	270	12	6.9	7.5	0.8	15
SV385K14	385	505	620	900	50	241	0.6	8000	410	16	6.9	7.5	0.8	19
SV385K20	385	505	620	900	100	495	1	12000	710	22.5	7.5	10	1	27
SV385K23	385	505	620	900	100	624	1	15000	1250	25	7.5	10	1	29
SV420K10	420	560	680	980	25	121	0.4	3500	240	12	7.3	7.5	0.8	15
SV420K14	420	560	680	980	50	253	0.6	8000	380	16	7.4	7.5	0.8	19
SV420K20	420	560	680	980	100	523	1	12000	680	22.5	7.8	10	1	27
SV420K23	420	560	680	980	100	670	1	15000	1200	25	7.8	10	1	29
SV460K10	460	615	750	1080	25	132	0.4	3500	230	12	7.8	7.5	0.8	15
SV460K14	460	615	750	1080	50	275	0.6	8000	350	16	7.8	7.5	0.8	19
SV460K20	460	615	750	1080	100	572	1	12000	620	22.5	8.2	10	1	27
SV460K23	460	615	750	1080	100	728	1	15000	1080	25	8.2	10	1	29
SV510K10	510	670	820	1200	25	144	0.4	3500	210	12	8.2	7.5	0.8	15
SV510K14	510	670	820	1200	50	284	0.6	8000	330	16	8.2	7.5	0.8	19
SV510K20	510	670	820	1200	100	598	1	12000	570	22.5	8.7	10	1	27
SV510K23	510	670	820	1200	100	750	1	15000	1000	25	8.7	10	1	29
SV550K10	550	745	910	1350	25	168	0.4	3500	200	12	8.8	7.5	0.8	15
SV550K14	550	745	910	1350	50	330	0.6	8000	310	16	8.8	7.5	0.8	19
SV550K20	550	745	910	1350	100	644	1	12000	510	22.5	9.2	10	1	27
SV550K23	550	745	910	1350	100	815	1	15000	900	25	9.2	10	1	29
SV575 K 10	575	750	950	1400	25	172	0.4	3500	190	12	8.9	7.5	0.8	15
SV575 K 14	575	750	950	1400	50	340	0.6	8000	300	16	8.9	7.5	0.8	19
SV575 K 20	575	750	950	1400	100	670	1	12000	490	22.5	9.4	10	1	27
SV575 K 23	575	750	950	1400	100	850	1	15000	850	25	9.4	10	1	29
SV625 K 10	625	825	1000	1450	25	185	0.4	3500	180	12	9.1	7.5	0.8	15
SV625 K 14	625	825	1000	1450	50	360	0.6	8000	280	16	9.5	7.5	0.8	19
SV625 K 20	625	825	1000	1450	100	720	1	12000	460	22.5	9.7	10	1	27
SV625 K 23	625	825	1000	1450	100	900	1	15000	750	25	9.7	10	1	29
SV680 K 10	680	895	1100	1700	25	197	0.4	3500	170	12	9.7	7.5	0.8	15
SV680 K 14	680	895	1100	1700	50	390	0.6	8000	270	16	10.1	7.5	0.8	19
SV680 K 20	680	895	1100	1700	100	780	1	12000	430	22.5	10.3	10	1	27
SV680 K 23	680	895	1100	1700	100	980	1	15000	730	25	10.3	10	1	29

Type SV ...K20 with I_{max} = 1 x 15 kA @ 8/20 µs available upon request
 Type SV ...K23 with I_{max} = 1 x 20 kA @ 8/20 µs available upon request

RoHS Compliance

Stackpole Electronics has joined the worldwide effort to reduce the amount of lead in electronic components and to meet the various regulatory requirements now prevalent, such as the European Union's directive regarding "Restrictions on Hazardous Substances" (RoHS 3). As part of this ongoing program, we periodically update this document with the status regarding the availability of our compliant components. All our standard part numbers are compliant to EU Directive 2011/65/EU of the European Parliament as amended by Directive (EU) 2015/863/EU as regards the list of restricted substances.

RoHS Compliance Status

Standard Product Series	Description	Package / Termination Type	Standard Series RoHS Compliant	Lead-Free Termination Composition	Lead-Free Mfg. Effective Date (Std Product Series)	Lead-Free Effective Date Code (YY/WW)
SV	Special Medium Voltage Leaded Varistor	Leaded	YES	100% Matte Sn	Always	Always

“Conflict Metals” Commitment

We at Stackpole Electronics, Inc. are joined with our industry in opposing the use of metals mined in the “conflict region” of the eastern Democratic Republic of the Congo (DRC) in our products. Recognizing that the supply chain for metals used in the electronics industry is very complex, we work closely with our own suppliers to verify to the extent possible that the materials and products we supply do not contain metals sourced from this conflict region. As such, we are in compliance with the requirements of Dodd-Frank Act regarding Conflict Minerals.

Compliance to “REACH”

We certify that all passive components supplied by Stackpole Electronics, Inc. are SVHC (Substances of Very High Concern) free and compliant with the requirements of EU Directive 1907/2006/EC, “The Registration, Evaluation, Authorization and Restriction of Chemicals”, otherwise referred to as REACH. Contact us for complete list of REACH Substance Candidate List.

Environmental Policy

It is the policy of Stackpole Electronics, Inc. (SEI) to protect the environment in all localities in which we operate. We continually strive to improve our effect on the environment. We observe all applicable laws and regulations regarding the protection of our environment and all requests related to the environment to which we have agreed. We are committed to the prevention of all forms of pollution.

How to Order

