

# CV Series

Low and Medium Voltage Leaded Varistors

Stackpole Electronics, Inc.

Resistive Product Solutions

**Description:** The CV Series of transient surge suppressors is disc-shaped varistors that can be operated continuously in low and medium voltage electronic circuits, as well as across AC power lines.

Due to their radial lead construction, these components require very little mounting space. They are available in five model sizes from 5 to 20mm and feature a wide range of AC operating voltages from 50V to 680V.



- Features:**
- AC operating voltage (Vrms) from 50V to 680V
  - DC operating voltage (Vdc) from 65V to 820V
  - Broad range of current and energy handling capability
  - For RMS voltages  $\leq 40V$  see ZV leaded series
  - 5 model sizes available from 5mm to 20mm
  - UL, CAC, CEDD approved
  - +85°C continuous operating temperature

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	$\leq 0.05\% / ^\circ C$	
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

Standard Packaging Options / Quantities											
Series	Voltage Range (Vrms)	5mm		7mm		10mm		14mm		20mm	
		Reel	Bulk	Reel	Bulk	Reel	Bulk	Reel	Bulk	Reel	Bulk
CV	11 - 17	1,800	1,500	1,500	1,500	1,300	600	N/A	N/A	N/A	N/A
	20 - 75	1,500	1,500	1,500	1,500	1,300	600	700	500	600	300
	95	1,500	1,500	1,500	1,000	1,300	600	600	500	600	300
	115 - 130	1,300	1,500	1,300	1,000	1,000	500	600	500	500	300
	140 - 150	1,200	1,500	1,200	1,000	1,000	500	600	500	500	300
	175	1,200	1,500	1,200	1,000	1,000	500	500	500	500	300
	230	1,000	1,000	1,000	1,000	1,000	500	500	300	400	300
	250 - 275	1,000	1,000	1,000	1,000	800	500	400	300	400	300
	300	N/A	N/A	N/A	1,000	800	500	400	300	400	200
	320	N/A	N/A	N/A	N/A	800	500	400	300	300	200
	385	N/A	N/A	N/A	N/A	700	400	400	300	300	200
	420	N/A	N/A	N/A	N/A	700	400	300	300	300	200
460 - 550	N/A	N/A	N/A	N/A	600	400	300	300	300	200	

## How to Order

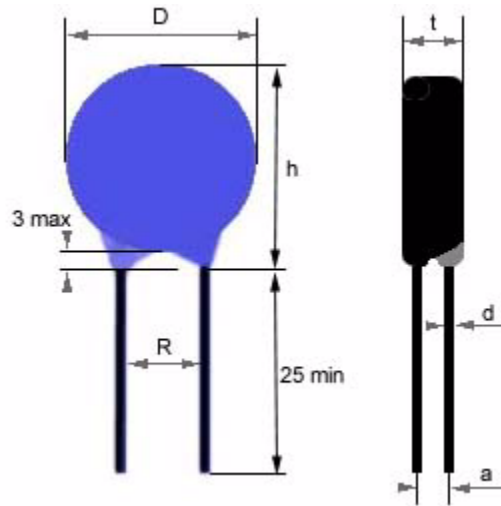
SEI Type		Lead Style		Vrms	Tolerance	Disc Diameter	Packaging	
<b>CV</b>		<b>1</b>		<b>140</b>	<b>K</b>	<b>14</b>	<b>B</b>	
<b>Type</b>	<b>Description</b>	<b>Lead Style</b>	<b>Description</b>	<b>Code</b>	<b>Tolerance</b>	<b>Size (mm)</b>	<b>Code</b>	<b>Description</b>
CV	Low and Medium Voltage Leaded Varistor	1	Straight	K	10%	5	B	Bulk
		5	Kinked	S	Special	7	R	Tape and Reel
						10	A	Ammo
						14		
						20		

Rev Date: 11/10/2009

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This specification may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

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**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)
CV 50 K 05	50	65	82	135	5	2.7	0.10	400	350	7	3.5	5	0.6	9.5
CV 60 K 05	60	85	100	165	5	3.0	0.10	400	300	7	3.5	5	0.6	9.5
CV 75 K 05	75	100	120	200	5	4.0	0.10	400	250	7	3.6	5	0.6	9.5
CV 95 K 05	95	125	150	250	5	6.0	0.10	400	200	7	3.8	5	0.6	9.5
CV 115 K 05	115	150	180	300	5	6.0	0.10	400	180	7	4.0	5	0.6	9.5
CV 130 K 05	130	170	205	340	5	7.0	0.10	400	160	7	4.0	5	0.6	9.5
CV 140 K 05	140	180	220	360	5	7.0	0.10	400	150	7	4.1	5	0.6	9.5
CV 150 K 05	150	200	240	395	5	9.0	0.10	400	140	7	4.3	5	0.6	9.5
CV 175 K 05	175	225	270	455	5	9.5	0.10	400	120	7	4.8	5	0.6	9.5
CV 230 K 05	230	300	360	595	5	13.0	0.10	400	95	7	4.8	5	0.6	9.5
CV 250 K 05	250	320	390	650	5	14.0	0.10	400	80	7	5.0	5	0.6	9.5
CV 275 K 05	275	350	430	710	5	16.0	0.10	400	75	7	5.6	5	0.6	9.5
CV 50 K 07	50	65	82	135	10	6.8	0.25	1,200	820	9	3.5	5	0.6	11.5
CV 60 K 07	60	85	100	165	10	7.0	0.25	1,200	680	9	3.5	5	0.6	11.5
CV 75 K 07	75	100	120	200	10	9.0	0.25	1,200	550	9	3.6	5	0.6	11.5
CV 95 K 07	95	125	150	250	10	11.0	0.25	1,200	440	9	3.8	5	0.6	11.5
CV 115 K 07	115	150	180	300	10	13.0	0.25	1,200	360	9	4.0	5	0.6	11.5
CV 130 K 07	130	170	205	340	10	15.0	0.25	1,200	320	9	4.0	5	0.6	11.5
CV 140 K 07	140	180	220	360	10	18.0	0.25	1,200	300	9	4.1	5	0.6	11.5
CV 150 K 07	150	200	240	395	10	18.0	0.25	1,200	280	9	4.3	5	0.6	11.5
CV 175 K 07	175	225	270	455	10	21.0	0.25	1,200	250	9	4.8	5	0.6	11.5
CV 230 K 07	230	300	360	595	10	28.0	0.25	1,200	190	9	4.8	5	0.6	11.5
CV 250 K 07	250	320	390	650	10	30.0	0.25	1,200	180	9	5.0	5	0.6	11.5
CV 275 K 07	275	350	430	710	10	35.0	0.25	1,200	160	9	5.6	5	0.6	11.5
CV 300 K 07	300	385	470	775	10	37.0	0.25	1,200	150	9	5.8	5	0.6	11.5

Device Ratings and Dimensions														
Part Number	V <sub>RMS</sub> (volts)	V <sub>DC</sub> (volts)	V <sub>N</sub> (volts)	V <sub>C</sub> (volts)	I <sub>C</sub> (amps)	W <sub>MAX</sub> (joules)	P <sub>MAX</sub> (watts)	I <sub>P</sub> (amps)	C <sub>TYP</sub> (pF)	D <sub>MAX</sub> (mm)	t <sub>MAX</sub> (mm)	R (mm)	d (mm)	h <sub>MAX</sub> (mm)
CV 50 K 10	50	65	82	135	25	17	0.4	2,500	1,400	12.5	4.1	7.5	0.8	15
CV 60 K 10	60	85	100	165	25	16	0.4	2,500	1,200	12.5	4.1	7.5	0.8	15
CV 75 K 10	75	100	120	200	25	21	0.4	2,500	950	12.5	4.2	7.5	0.8	15
CV 95 K 10	95	125	150	250	25	25	0.4	2,500	750	12.5	4.3	7.5	0.8	15
CV 115 K 10	115	150	180	300	25	30	0.4	2,500	650	12.5	4.3	7.5	0.8	15
CV 130 K 10	130	170	205	340	25	34	0.4	2,500	580	12.5	4.5	7.5	0.8	15
CV 140 K 10	140	180	220	360	25	37	0.4	2,500	540	12.5	4.6	7.5	0.8	15
CV 150 K 10	150	200	240	395	25	41	0.4	2,500	510	12.5	4.6	7.5	0.8	15
CV 175 K 10	175	225	270	455	25	46	0.4	2,500	440	12.5	4.9	7.5	0.8	15
CV 230 K 10	230	300	360	595	25	62	0.4	2,500	350	12.5	5.4	7.5	0.8	15
CV 250 K 10	250	320	390	650	25	68	0.4	2,500	320	12.5	5.6	7.5	0.8	15
CV 275 K 10	275	350	430	710	25	78	0.4	2,500	300	12.5	6.0	7.5	0.8	15
CV 300 K 10	300	385	470	775	25	82	0.4	2,500	280	12.5	6.1	7.5	0.8	15
CV 320 K 10	320	420	510	840	25	91	0.4	2,500	260	12.5	6.8	7.5	0.8	15
CV 385 K 10	385	505	620	1,025	25	93	0.4	2,500	230	12.5	7.4	7.5	0.8	16
CV 420 K 10	420	560	680	1,120	25	97	0.4	2,500	210	12.5	7.3	7.5	0.8	16
CV 460 K 10	460	615	750	1,240	25	106	0.4	2,500	200	12.5	7.8	7.5	0.8	16
CV 510 K 10	510	670	820	1,355	25	115	0.4	2,500	180	12.5	8.2	7.5	0.8	16
CV 550 K 10	550	745	910	1,500	25	134	0.4	2,500	170	12.5	8.8	7.5	0.8	16
CV 575 K 10	575	750	950	1,570	25	136	0.4	2,500	165	12.5	8.9	7.5	0.8	16
CV 625 K 10	625	825	1,000	1,650	25	140	0.4	2,500	160	12.5	9.1	7.5	0.8	16
CV 680 K 10	680	895	1,100	1,815	25	155	0.4	2,500	150	12.5	9.7	7.5	0.8	16
CV 50 K 14	50	65	82	135	50	35	0.6	4,500	2,600	16.5	4.1	7.5	0.8	20
CV 60 K 14	60	85	100	165	50	34	0.6	4,500	2,200	16.5	4.2	7.5	0.8	20
CV 75 K 14	75	100	120	200	50	41	0.6	4,500	1,800	16.5	4.2	7.5	0.8	20
CV 95 K 14	95	125	150	250	50	52	0.6	4,500	1,400	16.5	4.3	7.5	0.8	20
CV 115 K 14	115	150	180	300	50	62	0.6	4,500	1,200	16.5	4.4	7.5	0.8	20
CV 130 K 14	130	170	205	340	50	68	0.6	4,500	1,050	16.5	4.6	7.5	0.8	20
CV 140 K 14	140	180	220	360	50	75	0.6	4,500	980	16.5	4.7	7.5	0.8	20
CV 150 K 14	150	200	240	395	50	81	0.6	4,500	900	16.5	4.8	7.5	0.8	20
CV 175 K 14	175	225	270	455	50	95	0.6	4,500	800	16.5	4.9	7.5	0.8	20
CV 230 K 14	230	300	360	595	50	126	0.6	4,500	620	16.5	5.5	7.5	0.8	20
CV 250 K 14	250	320	390	650	50	135	0.6	4,500	580	16.5	5.7	7.5	0.8	20
CV 275 K 14	275	350	430	710	50	150	0.6	4,500	530	16.5	6.0	7.5	0.8	20
CV 300 K 14	300	385	470	775	50	169	0.6	4,500	490	16.5	6.1	7.5	0.8	20
CV 320 K 14	320	420	510	840	50	184	0.6	4,500	460	16.5	6.8	7.5	0.8	20
CV 385 K 14	385	505	620	1,025	50	193	0.6	4,500	390	16.5	7.4	7.5	0.8	20
CV 420 K 14	420	560	680	1,120	50	202	0.6	4,500	370	16.5	7.4	7.5	0.8	20
CV 460 K 14	460	615	750	1,240	50	220	0.6	4,500	340	16.5	7.8	7.5	0.8	20
CV 510 K 14	510	670	820	1,355	50	227	0.6	4,500	310	16.5	8.2	7.5	0.8	20
CV 550 K 14	550	745	910	1,500	50	364	0.6	4,500	290	16.5	8.8	7.5	0.8	20
CV 575 K 14	575	750	950	1,570	50	270	0.6	4,500	280	16.5	8.9	7.5	0.8	20
CV 625 K 14	625	825	1,000	1,650	50	280	0.6	4,500	270	16.5	9.2	7.5	0.8	20
CV 680 K 14	680	895	1,100	1,815	50	310	0.6	4,500	250	16.5	9.8	7.5	0.8	20

Device Ratings and Dimensions														
Part Number	V <sub>RMS</sub> (volts)	V <sub>DC</sub> (volts)	V <sub>N</sub> (volts)	V <sub>C</sub> (volts)	I <sub>C</sub> (amps)	W <sub>MAX</sub> (joules)	P <sub>MAX</sub> (watts)	I <sub>P</sub> (amps)	C <sub>TYP</sub> (pF)	D <sub>MAX</sub> (mm)	t <sub>MAX</sub> (mm)	R (mm)	d (mm)	h <sub>MAX</sub> (mm)
CV 50 K 20	50	65	82	135	100	75	1	6,500	5,000	22.5	4.5	10	1	26
CV 60 K 20	60	85	100	165	100	71	1	6,500	4,100	22.5	4.6	10	1	26
CV 75 K 20	75	100	120	200	100	81	1	6,500	3,300	22.5	4.6	10	1	26
CV 95 K 20	95	125	150	250	100	106	1	6,500	2,600	22.5	4.6	10	1	26
CV 115 K 20	115	150	180	300	100	118	1	6,500	2,100	22.5	4.8	10	1	26
CV 130 K 20	130	170	205	340	100	142	1	6,500	1,900	22.5	5.0	10	1	26
CV 140 K 20	140	180	220	360	100	157	1	6,500	1,800	22.5	5.1	10	1	26
CV 150 K 20	150	200	240	395	100	170	1	6,500	1,600	22.5	5.2	10	1	26
CV 175 K 20	175	225	270	455	100	193	1	6,500	1,400	22.5	5.3	10	1	26
CV 230 K 20	230	300	360	595	100	258	1	6,500	1,100	22.5	5.9	10	1	26
CV 250 K 20	250	320	390	650	100	276	1	6,500	1,000	22.5	6.1	10	1	26
CV 275 K 20	275	350	430	710	100	304	1	6,500	900	22.5	6.3	10	1	26
CV 300 K 20	300	385	470	775	100	350	1	6,500	850	22.5	6.6	10	1	26
CV 320 K 20	320	420	510	840	100	388	1	6,500	800	22.5	6.8	10	1	27
CV 385 K 20	385	505	620	1,025	100	396	1	6,500	650	22.5	7.5	10	1	27
CV 420 K 20	420	560	680	1,120	100	418	1	6,500	620	22.5	7.8	10	1	27
CV 460 K 20	460	615	750	1,240	100	460	1	6,500	560	22.5	8.2	10	1	27
CV 510 K 20	510	670	820	1,355	100	478	1	6,500	510	22.5	8.7	10	1	27
CV 550 K 20	550	745	910	1,500	100	515	1	6,500	480	22.5	9.2	10	1	27
CV 575 K 20	575	750	950	1,570	100	525	1	6,500	460	22.5	9.4	10	1	27
CV 625 K 20	625	825	1,000	1,650	100	565	1	6,500	420	22.5	9.7	10	1	27
CV 680 K 20	680	895	1,100	1,815	100	620	1	6,500	390	22.5	10.2	10	1	27