

SINLOON®

突波吸收器(壓敏電阻)
DC 18V ~ 182V

14D Series
Zinc Oxide Varistor

FEATURE

- A wide protecting voltage range.(18V-1800V)
- Low leakage current in Preparatory State.($<20\mu\text{A}$)
- Fast response to transient voltage.($<50\text{ns}$)
- Low clamping ratio.
- High withstanding surge current.
- High energy capability.
- No following-on current.

APPLICATIONS

- Transistor, Diode, IC, Thyristor and semiconductor protection.
- Protection in Consumer, Industrial electronics.
- Protection in communication, measuring and controller electronics.
- Protection in electronic home appliances.
- Electrostatic discharge and noise suppression.
- Relay and electromagnetic valve surge absorption.

ORDERING INFORMATION

Example: SVR-20D331KCB (20mm 330V $\pm 10\%$ 10mm Bulk)

Code	Dimension		Disc Type	Voltage	Tolerance	Lead style (Pitch)		d Φ (mm)	Pack
SVR	05	Φ 5.0mm	D	180~561V	K = $\pm 10\%$	A	5.0 \pm 1.0mm	Φ 0.6	B = Bulk
	07	Φ 7.0mm		180~681V					
	10	Φ 10mm		180~112V					
	14	Φ 14mm		180~182V					
	20	Φ 20mm		180~182V					

FIGURE



Fig-1

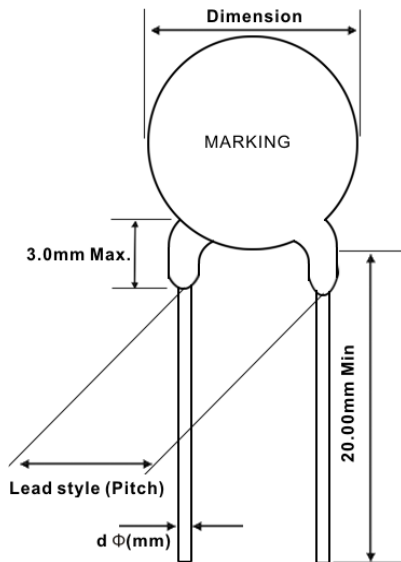


Fig-2

電氣特性

- 可分辨穩定電路電壓或突波電壓，但只在突波電壓發生時才進行運作。
- 吸收突波後，即恢復吸收突波前的預備狀態（可反覆使用）。
- 吸收突波電壓時的抑制電壓，比被保護機器的耐電壓、誤動作電壓還低。
- 可耐得住反覆所施加的突波電壓。



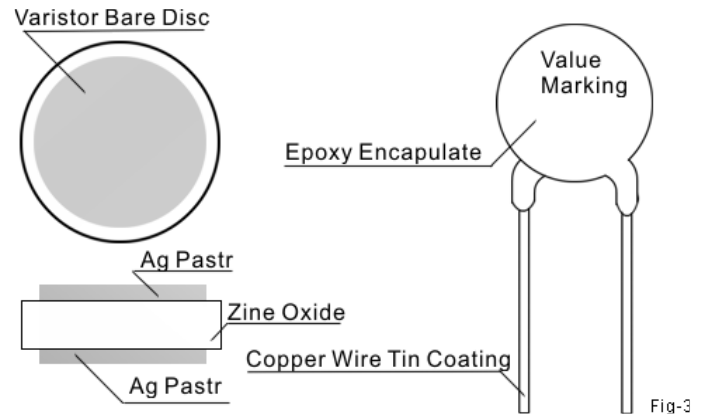
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☐ MATERIALS AND MARKING

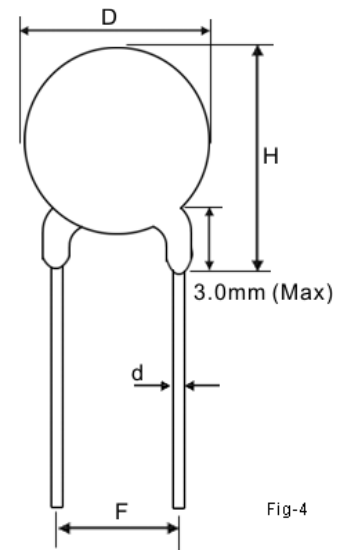
Marking:	Value Marking	Fig-3
Electrode Material:	Ag Paste	
Coating Material:	Epoxy	
Lead Material:	Tin Plated Copper Wir	



☐ DIMENSION

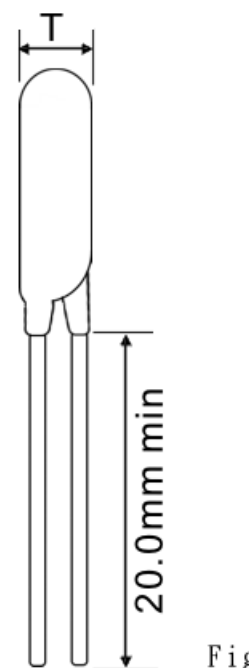
Unit: mm

Series	05D	07D	10D	14D	20D	Figure
D (Max)	7.5	9.0	14.0	17.0	25.0	Fig-4
d (±0.02)	0.6	0.6	0.8	0.8	1.0	
F (±1.0)	5.0	5.0	7.5	7.5	10.0	
H (Max)	10.5	12.0	17.0	20.0	28.0	



☐ DIMENSION T-max Table

Part No.	05D	07D	10D	14D	20D	Figure
180K	4.5	4.5	4.6	4.6	5.3	Fig-5
220K	4.5	4.6	4.7	4.7	5.4	
270K	4.5	4.7	4.8	4.8	5.5	
330K	4.5	4.9	5.0	5.0	5.6	
390K	4.5	4.8	4.9	4.9	5.5	
470K	4.5	4.9	5.0	5.0	5.6	
560K	4.5	5.0	5.1	5.1	5.7	
680K	4.5	5.2	5.3	5.3	5.8	
820K	4.1	4.1	4.5	4.5	4.9	
101K	4.3	4.3	4.7	4.7	5.1	
121K	4.5	4.5	4.9	4.9	5.3	
151K	4.8	4.8	5.2	5.2	5.6	
181K	4.3	4.3	4.8	4.8	5.2	
201K	3.4	4.4	4.8	4.8	5.2	
221K	4.5	4.5	4.9	5.0	5.3	
241K	4.6	4.6	5.0	4.9	5.4	
271K	4.9	4.9	5.2	5.2	5.6	
301K	5.0	5.0	5.3	5.3	5.7	
331K	5.1	5.1	5.6	5.6	6.0	
361K	5.2	5.2	5.7	5.7	6.2	
391K	5.4	5.4	5.8	5.8	6.4	
431K	5.7	5.7	6.2	6.2	6.7	
471K	6.0	6.0	6.5	6.5	7.0	
511K	6.2	6.4	6.5	6.5	7.0	
561K	6.2	6.4	6.5	6.5	7.0	
621K	●	7.1	7.1	7.1	7.5	
681K	●	7.3	7.4	7.4	7.8	
751K	●	●	7.8	7.8	8.2	
781K	●	●	7.9	7.9	8.3	
821K	●	●	8.1	8.1	8.5	
911K	●	●	8.6	8.6	9.0	
102K	●	●	9.1	9.1	9.5	
112K	●	●	9.7	9.7	10.1	
182K	●	●	●	14.1	14.8	



Fig



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□ DEFINITION OF TECHNICAL TERMS

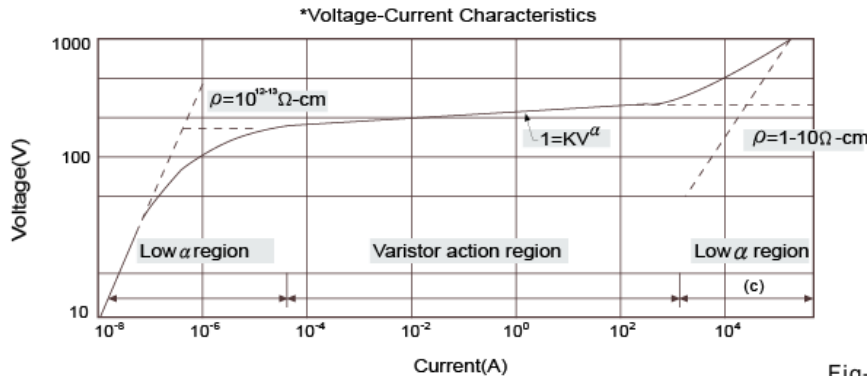


Fig-6

- Varistor Voltage(breakdown voltage):
The varistor voltage is the voltage across the varistor measured at a specified current I_c (0.1mA or 1mA) of specified duration.
- Max. allowable Voltage and leakage current The maximum operating voltage corresponds to the "rest" state of the varistor. Thi "srest" voltage offers a low leakage current in order to limit the power consumption of the protective device and not to disturb the circuit to be protected. The leakage currents usually have values in the range of a few micro-amperes.
- Non linear exponent α):
The varistor voltage-current characteristic is defined by the equation:
 $I=KV^\alpha$, where K is a constant dependent on geometry, and is the non linear exponent.
We usually take two points $(V1,I1), (V2,I2)$ to estimate the value of α . in which $I1$ and $I2$ are the current value corresponding to the voltage value $V1$ and $V2$
- Rated power:
The maximum power that can be applied within the specified ambient temperature.
- Capacitance:
The capacitance of varistor is the reference value measured between the varistor terminals at specified frequency.
- Withstanding surge current:
Withstanding surge current is the maximum peak current for the varistor with the specified standard impulse current (8x20 sec) applied one time or two times and corresponding to a permissible variation of 10% in the varistor voltage change.
- Maximum clamping voltage:
Maximum clamping voltage is the maximum voltage V_p between two terminals with the specified standard impulse current I (8x20 sec). The voltage value is an indication on the protective function of the varistor.
- Energy
Maximum energy from one or a burst of pulses. It is the value within the varistor change of 10% when one impulse of 10x1000 sec is applied.
 $E=KxVmxImxT$
E:Energy
K:constant=1.4
 V_m : Max. clamping voltage at I_m .
 I_m : Max. allowable single surge current of 10x1000 sec.
T: Duration of surge current(1000 sec)
- Pulse life time rating
This is expressed as the maximum allowable number of impulse currents applied. 8x20 sec impulse current (or 10x1000 sec) is applied at prescribed interval.
(or 10x1000 sec) is applied at prescribed interval.
This curve also provides for derating current as required repetitive pulsing.
 $t_1=8 t_2=20$ for 8 20 sec
 $t_1=10 t_2=1000$ for 10 1000 sec

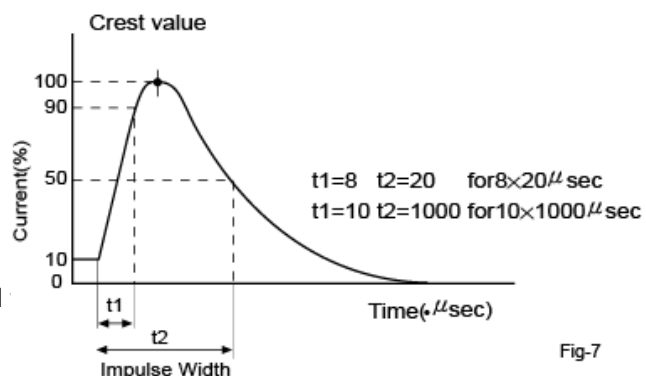


Fig-7



SINLOON®

突波吸收器(壓敏電阻)
DC180K ~ 182K (V)

14D Series
Zinc Oxide Varistor

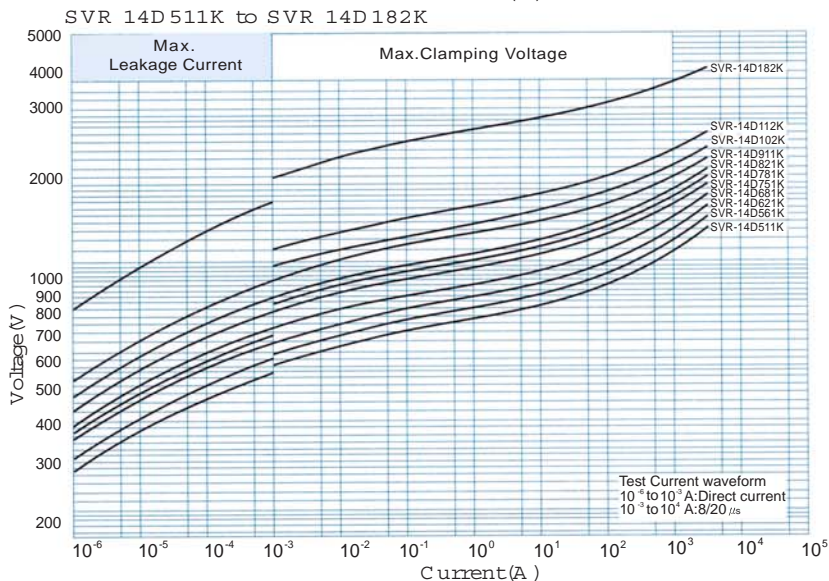
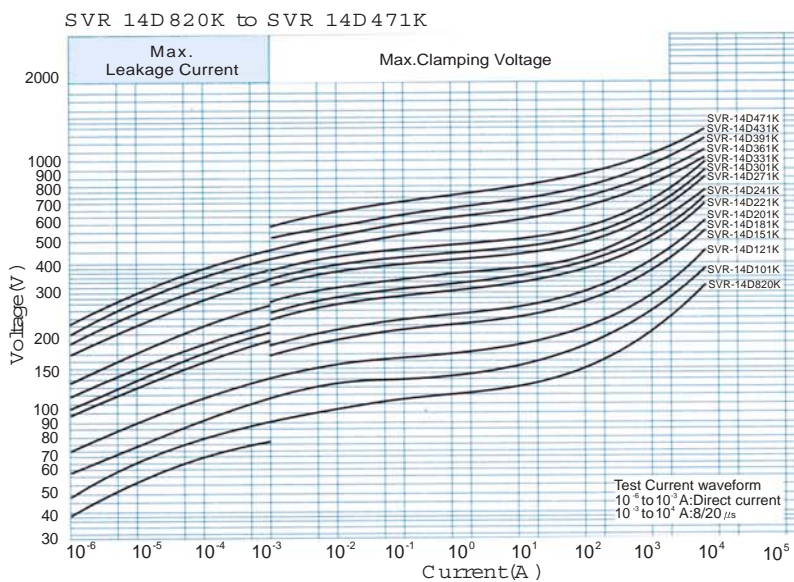
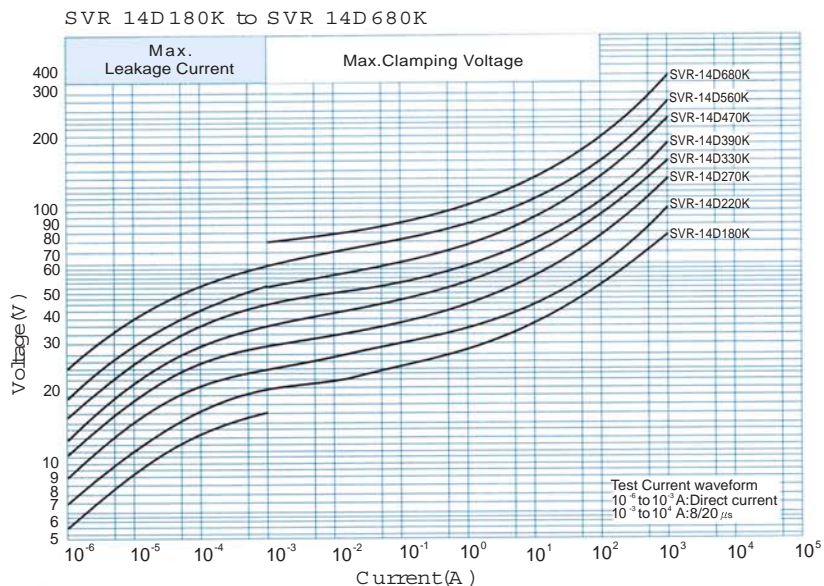
□ 14D Series

Part Number	Maximum Allowable Voltage		Varistor Voltage V _{0.1mA}	Clamping Voltage (Max.)		Maximum Peak Current (8/20 μS)(A)		Maximum Energy (Joule)		Rated Power w	Typical Capacitance (Reference) @1 KHz(pF)
	ACrms(V)	DC(V)		VC(V)	I _p (A)	1 Time	2 Time	10/1000 μs	2ms		
SVR-14D180K	11	14	18(15.5-21)	36	10	2000	1000	4.3	4.3	0.10	16500
SVR-14D220K	14	18	22(20-24)	43	10	2000	1000	5.3	5.3	0.10	13500
SVR-14D270K	17	22	27(24-30)	53	10	2000	1000	6.5	6.5	0.10	12000
SVR-14D330K	20	26	33(30-36)	65	10	2000	1000	7.9	7.9	0.10	10000
SVR-14D390K	25	31	39(35-43)	77	10	2000	1000	9.4	9.4	0.10	9000
SVR-14D470K	30	38	47(42-52)	93	10	2000	1000	11.0	11.0	0.10	8000
SVR-14D560K	35	45	56(50-62)	110	10	2000	1000	13.0	13.0	0.10	7500
SVR-14D680K	40	56	68(61-75)	135	10	2000	1000	16.0	16.0	0.10	6500
SVR-14D820K	50	65	82(74-90)	135	50	6000	5000	22.0	20.0	0.60	3000
SVR-14D101K	60	85	100(90-110)	165	50	6000	5000	28.0	25.0	0.60	2700
SVR-14D121K	75	100	120(108-132)	200	50	6000	5000	32.0	30.0	0.60	2500
SVR-14D151K	95	125	150(135-165)	250	50	6000	5000	40.0	37.0	0.60	2300
SVR-14D181K	115	150	180(162-198)	300	50	6000	5000	50.0	30.5	0.60	1850
SVR-14D201K	130	170	200(185-225)	340	50	6000	5000	57.0	50.0	0.60	950
SVR-14D221K	140	180	220(198-242)	360	50	6000	5000	60.0	55.0	0.60	850
SVR-14D241K	150	200	240(216-264)	395	50	6000	5000	63.0	60.0	0.60	800
SVR-14D271K	175	225	270(243-297)	455	50	6000	5000	70.0	70.0	0.60	700
SVR-14D301K	190	250	300(270-330)	500	50	6000	5000	77.0	52.0	0.60	650
SVR-14D331K	210	275	330(297-363)	550	50	6000	5000	85.0	80.0	0.60	600
SVR-14D361K	230	300	360(324-396)	595	50	6000	5000	93.0	90.0	0.60	550
SVR-14D391K	250	320	390(351-429)	650	50	6000	5000	100.0	100.0	0.60	500
SVR-14D431K	275	350	430(387-473)	710	50	6000	5000	115.0	110.0	0.60	460
SVR-14D471K	300	385	470(423-517)	775	50	6000	5000	125.0	125.0	0.60	420
SVR-14D511K	320	415	510(459-561)	845	50	6000	5000	136.0	136.0	0.60	390
SVR-14D561K	350	460	520(504-616)	925	50	5000	4500	136.0	136.0	0.60	360
SVR-14D621K	385	505	620(558-682)	1025	50	5000	4500	136.0	136.0	0.60	330
SVR-14D681K	420	560	680(612-748)	1120	50	5000	4500	136.0	136.0	0.60	310
SVR-14D751K	460	615	750(675-825)	1240	50	5000	4500	150.0	150.0	0.60	280
SVR-14D781K	485	640	780(702-858)	1290	50	5000	4500	148.0	105.0	0.60	265
SVR-14D821K	510	670	820(738-902)	1355	50	5000	4500	165.0	165.0	0.60	250
SVR-14D911K	550	745	910(819-1001)	1500	50	5000	4500	180.0	180.0	0.60	230
SVR-14D102K	625	825	1000(900-1100)	1650	50	6000	4500	200.0	200.0	0.60	210
SVR-14D112K	680	895	1100(990-1210)	1815	50	5000	4500	220.0	220.0	0.60	190
SVR-14D182K	1000	1465	1800(1620-1980)	2970	50	5000	4500	360.0	360.0	0.60	120

MAYLOON ELECTRONIC CO., LTD.,



□ 14D Series
V-I Curve



Im Pulse Life Time Ratings

