

SINLOON®

突波吸收器(壓敏電阻)
DC 18V ~ 561V

05D 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

- Tansistor, 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

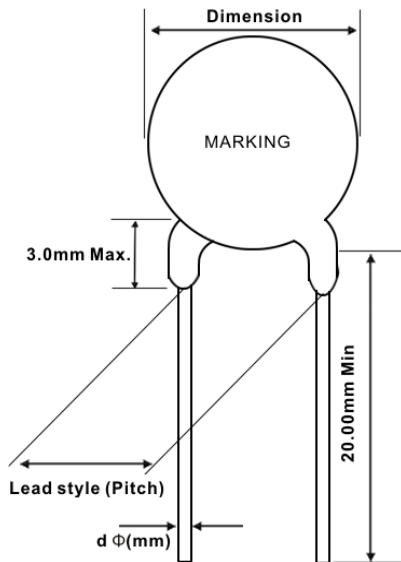


Fig-2

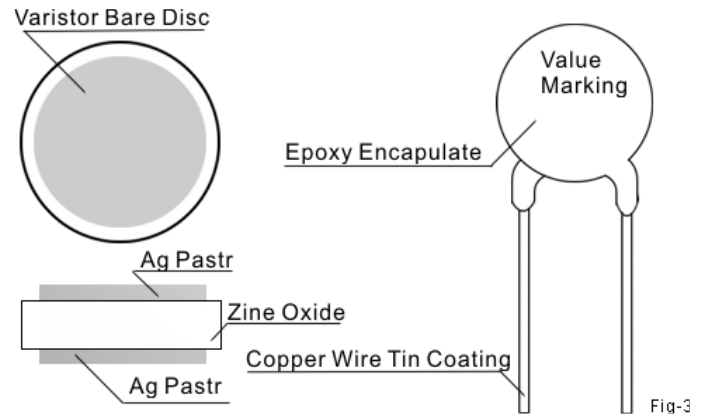
電氣特性

- 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。



□ MATERIALS AND MARKING

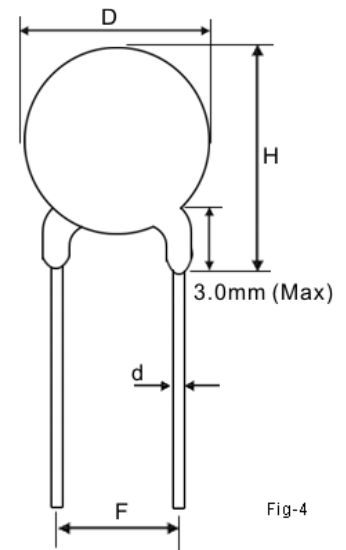
Marking:	Value Marking	Fig-3
Electrode Material:	Ag Paste	
Coating Material:	Epoxy	
Lead Material:	Tin Plated Copper Wir	



□ DIMENSION

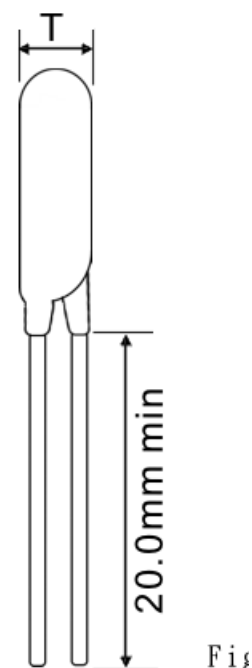
Unit: mm

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



□ DEFINITION OF TECHNICAL TERMS

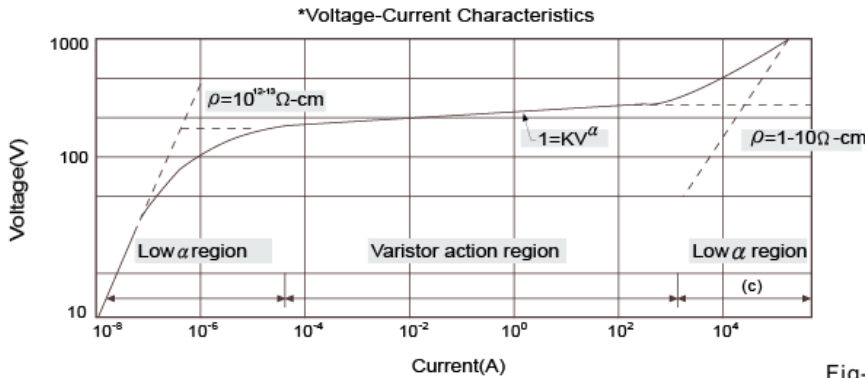


Fig-6

- 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

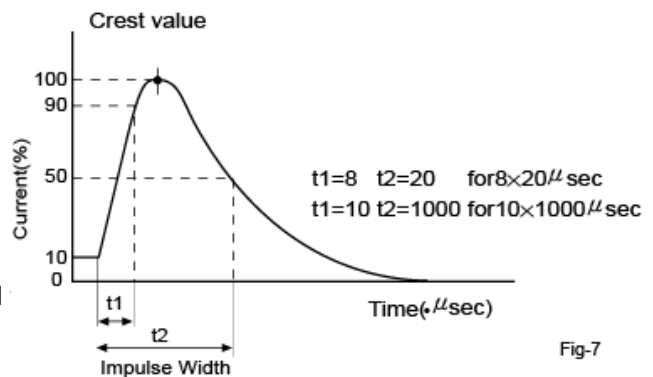


Fig-7





突波吸收器(壓敏電阻)
DC180K ~ 561K (V)

05D Series
Zinc Oxide Varistor

☐ 05D Series

Part Number	Maximum Allowable Voltage		Varistor Voltage V _{0.1mA}	Clamping Voltage (Max.)		Maximum Peak Current (8/20µs)(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-05D180K	11	14	18(15.5-21)	40	1	250	125	0.4	0.4	0.01	2540
SVR-05D220K	14	18	22(20-24)	48	1	250	125	0.5	0.5	0.01	2090
SVR-05D270K	17	22	27(24-30)	60	1	250	125	0.7	0.7	0.01	1790
SVR-05D330K	20	26	33(30-36)	73	1	250	125	0.8	0.8	0.01	1480
SVR-05D390K	25	31	39(35-43)	86	1	250	125	0.9	0.9	0.01	1310
SVR-05D470K	30	38	47(42-52)	104	1	250	125	1.1	1.1	0.01	1140
SVR-05D560K	35	45	56(50-62)	123	1	250	125	1.3	1.3	0.01	1000
SVR-05D680K	40	56	68(61-75)	150	1	250	125	1.6	1.6	0.01	870
SVR-05D820K	50	65	82(74-90)	145	5	800	600	2.5	2.5	0.10	400
SVR-05D101K	60	85	100(90-110)	175	5	800	600	3.0	3.0	0.10	350
SVR-05D121K	75	100	120(108-132)	210	5	800	600	4.0	3.5	0.10	310
SVR-05D151K	95	125	150(135-165)	260	5	800	600	4.8	4.5	0.10	270
SVR-05D181K	115	150	180(162-198)	320	5	800	600	5.9	5.0	0.10	110
SVR-05D201K	130	170	200(185-225)	355	5	800	600	6.5	6.0	0.10	110
SVR-05D221K	140	180	220(198-242)	380	5	800	600	7.0	6.5	0.10	110
SVR-05D241K	150	200	240(216-264)	415	5	800	600	8.0	7.5	0.10	100
SVR-05D271K	175	225	270(243-297)	475	5	800	600	8.5	8.0	0.10	90
SVR-05D301K	190	250	300(270-330)	520	5	800	600	9.0	8.5	0.10	80
SVR-05D331K	210	275	330(297-363)	570	5	800	600	9.5	9.5	0.10	80
SVR-05D361K	230	300	360(324-396)	620	5	800	600	11.0	11.0	0.10	80
SVR-05D391K	250	320	390(351-429)	675	5	800	600	12.0	12.0	0.10	70
SVR-05D431K	275	350	430(387-473)	745	5	800	600	13.5	13.5	0.10	70
SVR-05D471K	300	385	470(423-517)	810	5	800	600	15.0	15.0	0.10	60
SVR-05D511K	320	415	510(459-561)	845	5	800	600	16.0	16.0	0.10	60
SVR-05D561K	350	460	560(504-616)	920	5	800	600	16.0	16.0	0.10	60

MAYLOON ELECTRONIC CO., LTD.,



品質承諾標誌
QUALITY COMMITMENT

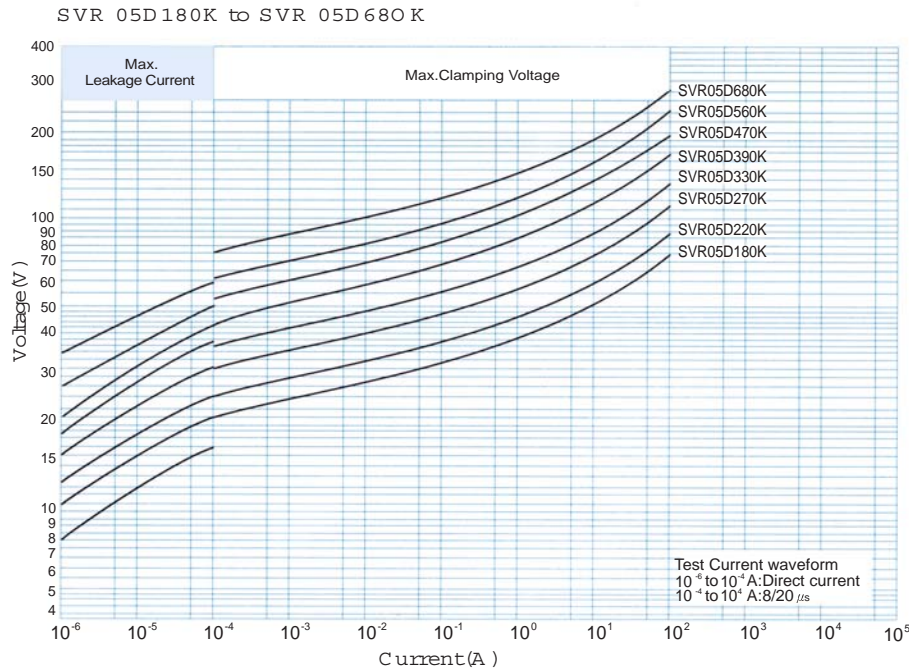


突波吸收器(壓敏電阻)
DC180K ~ 561K (V)

05D Series
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☐ 05D Series

V- I Curve



Im Pulse Life Time Ratings

