SINLOON®

突波吸收器(壓敏電阻)

DC 18V ~ 182V

20D Series

Zine Oxide Varistor

☐ FEATURE

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

FIGURE

Fig-1

☐ 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 ±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 = ±10%	A	5.0±1.0mm	Φ0.6	B = Bulk
	07	Φ 7.0mm		180~681V		B	7.5±1.0mm	Φ0.8	
	10	Φ 10mm		180~112V		C	10±1.0mm	Φ1.0	
	14	Φ 14mm		180~182V					
	20	Φ 20mm		180~182V					

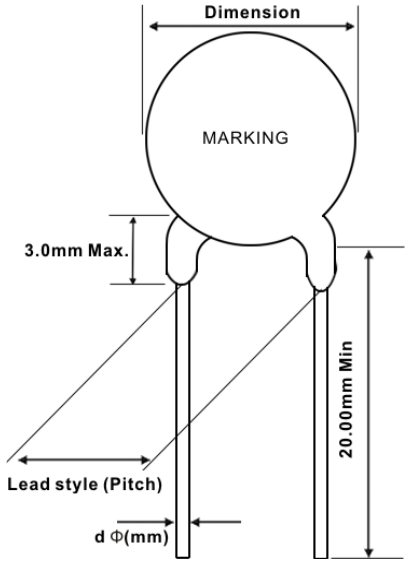

Fig-2

☐ 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。

RoHS Compliant
品質承諾標誌
QUALITY COMMITMENT

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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	

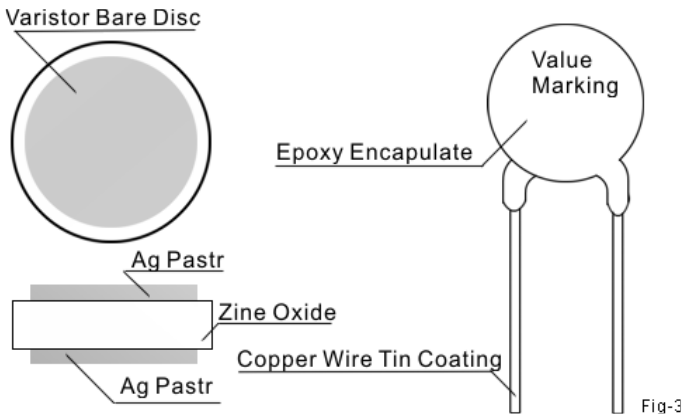

Fig-3

☐ 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	

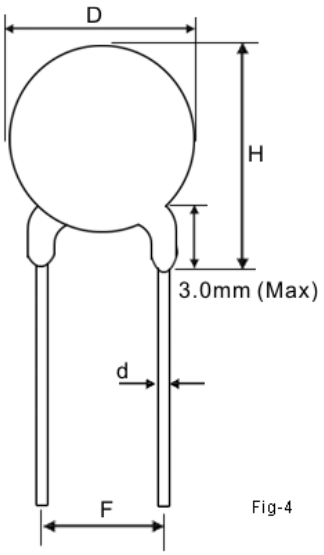

Fig-4

☐ 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	

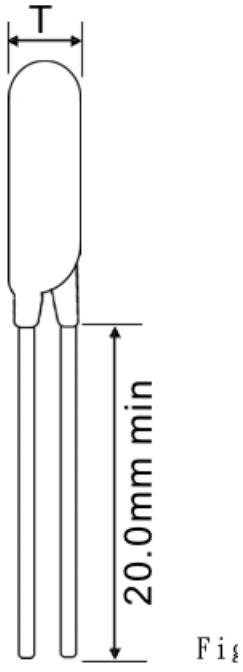

Fig-5

SINLOON® 突波吸收器(壓敏電阻) 20D Series

DC 18V ~ 182V Zine Oxide Varistor

☐ DEFINITION OF TECHNICAL TERMS

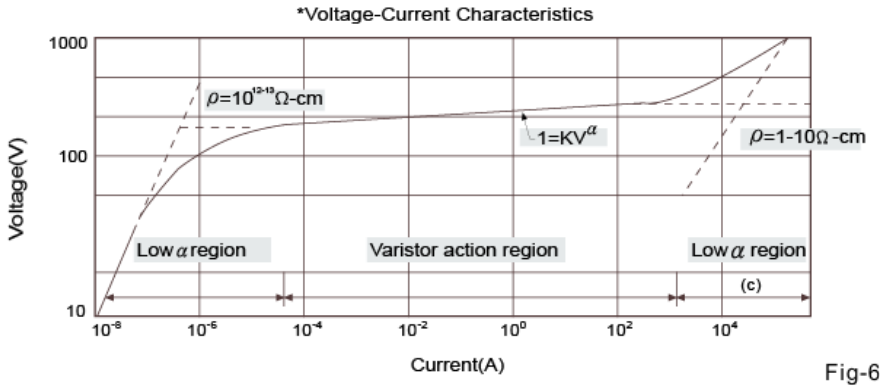

Fig-6

• Varistor Voltage(breakdown voltage):
The varistor voltage is the voltage across the varistor measured at a specified current Ic(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( ):
The varistor voltage-current characteristic is defined by the equation:
I=KV ,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 . 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 Vp 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
Vm: Max. clamping voltage at Im.
Im: 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.
t1=8 t2=20 for8 20 sec
t1=10 t2=1000 for10 1000 sec

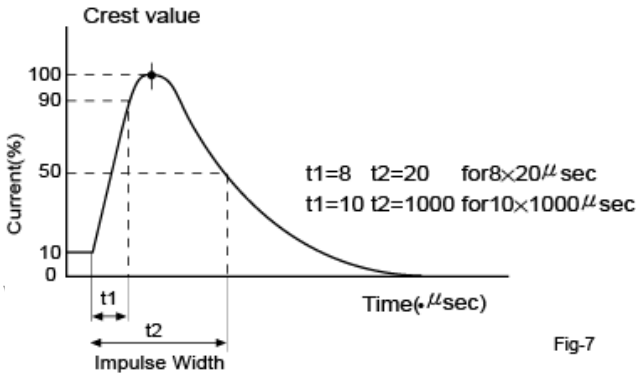

Fig-7

RoHS Compliant
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QUALITY COMMITMENT

MAYLOON ELECTRONIC CO., LYD.,

SINLOON®

突波吸收器(壓敏電阻)

DC180K ~ 182K (V)

20D Series

Zine Oxide Varistor

☐ **20D Series**

Part Number	Maximum Allowable Voltage		Varistor Voltage	Clamping Voltage (Max.)		Maximum Peak Current (8/20μs)(A)		Maximum Energy (JOULE)		Rated Power	Typical Capacitance (Reference)
	ACrms(V)	DC(V)	$V_{0.1mA}$	VC(V)	Ip(A)	1 Time	2 Time	10/1000 μs	2ms	w	@1 KHz(pF)
SVR-20D180K	11	14	18(15.5-21)	36	20	3000	2000	12.0	12.0	0.20	39000
SVR-20D220K	14	18	22(20-24)	43	20	3000	2000	14.0	14.0	0.20	33000
SVR-20D270K	17	22	27(24-30)	53	20	3000	2000	18.0	17.0	0.20	28000
SVR-20D330K	20	26	33(30-36)	65	20	3000	2000	23.0	21.0	0.20	24000
SVR-20D390K	25	31	39(35-43)	77	20	3000	2000	26.0	25.0	0.20	21000
SVR-20D470K	30	38	47(42-52)	93	20	3000	2000	33.0	30.0	0.20	19000
SVR-20D560K	35	45	56(50-62)	110	20	3000	2000	41.0	36.0	0.20	17000
SVR-20D680K	40	56	68(61-75)	135	20	3000	2000	46.0	44.0	0.20	15000
SVR-20D820K	50	65	82(74-90)	135	100	10000	7000	40.0	40.0	1.00	6700
SVR-20D101K	60	85	100(90-110)	165	100	10000	7000	50.0	50.0	1.00	6100
SVR-20D121K	75	100	120(108-132)	200	100	10000	7000	60.0	60.0	1.00	5600
SVR-20D151K	95	125	150(135-165)	250	100	10000	7000	75.0	75.0	1.00	5100
SVR-20D181K	115	150	180(162-198)	300	100	10000	7000	85.0	60.5	1.00	3900
SVR-20D201K	130	170	200(185-225)	340	100	10000	7000	100.0	100.0	1.00	2700
SVR-20D221K	140	180	220(198-242)	360	100	10000	7000	110.0	110.0	1.00	2500
SVR-20D241K	150	200	240(216-264)	395	100	10000	7000	120.0	120.0	1.00	2300
SVR-20D271K	175	225	270(243-297)	455	100	10000	7000	135.0	135.0	1.00	2000
SVR-20D301K	190	250	300(270-330)	500	100	10000	7000	136.0	100.0	1.00	2000
SVR-20D331K	210	275	330(297-363)	550	100	10000	7000	160.0	160.0	1.00	1700
SVR-20D361K	230	300	360(324-396)	595	100	10000	7000	180.0	180.0	1.00	1500
SVR-20D391K	250	320	390(351-429)	650	100	10000	7000	195.0	195.0	1.00	1400
SVR-20D431K	275	350	430(387-473)	710	100	10000	7000	215.0	215.0	1.00	1300
SVR-20D471K	300	385	470(423-517)	775	100	10000	7000	250.0	250.0	1.00	1200
SVR-20D511K	320	415	510(459-561)	845	100	10000	7000	273.0	273.0	1.00	1100
SVR-20D561K	350	460	560(504-616)	925	100	7500	6500	273.0	273.0	1.00	1000
SVR-20D621K	385	505	620(558-682)	1025	100	7500	6500	273.0	273.0	1.00	900
SVR-20D681K	420	560	680(612-748)	1120	100	7500	6500	273.0	273.0	1.00	830
SVR-20D751K	460	615	750(675-825)	1240	100	7500	6500	300.0	300.0	1.00	750
SVR-20D781K	485	640	780(702-858)	1290	100	7500	6500	265.0	180.0	1.00	725
SVR-20D821K	510	670	820(738-902)	1355	100	7500	6500	325.0	325.0	1.00	700
SVR-20D911K	550	745	910(819-1001)	1500	100	7500	6500	360.0	360.0	1.00	620
SVR-20D102K	625	825	1000(900-1100)	1650	100	7500	6500	400.0	400.0	1.00	560
SVR-20D112K	680	895	1100(990-1210)	1815	100	7500	6500	440.0	440.0	1.00	510
SVR-20D182K	1000	1465	1800(1620-1980)	2970	100	7500	6500	720.0	720.0	1.00	340

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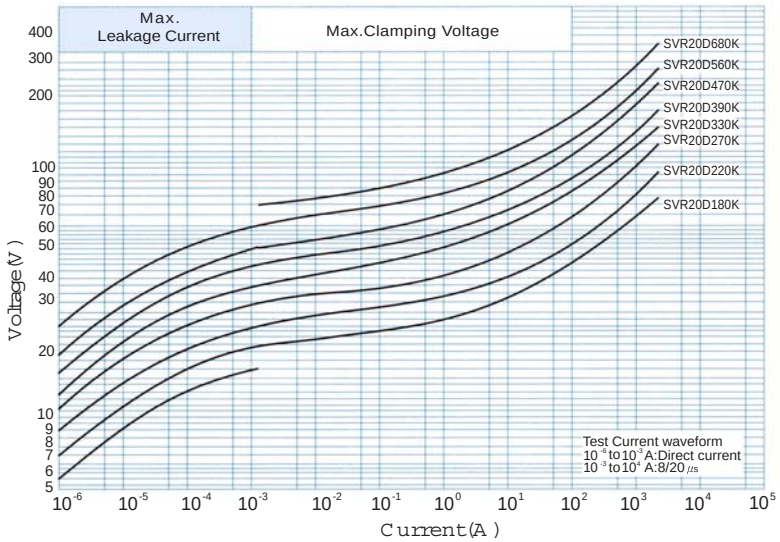
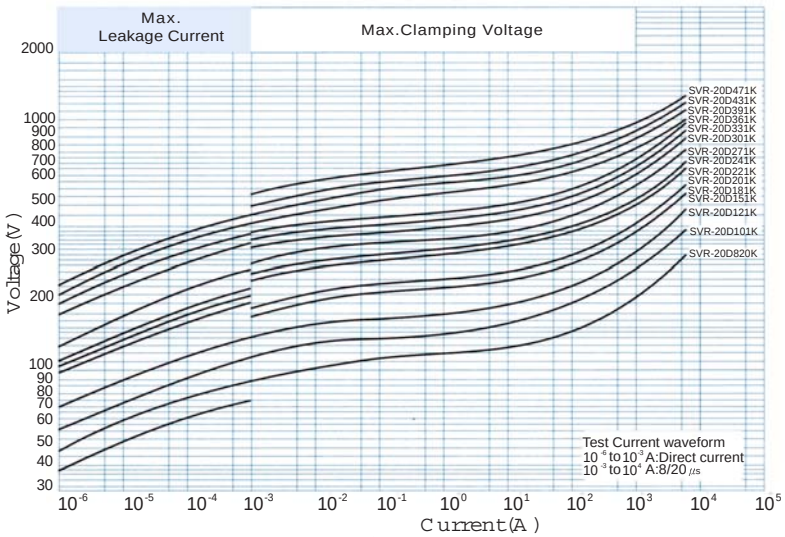
☐ 20D Series

V - I Curve

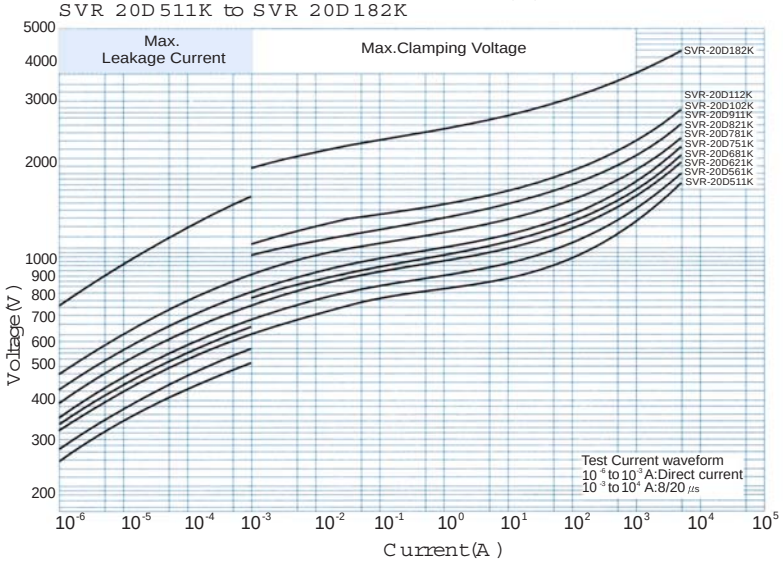
SVR 20D180K to SVR 20D680K



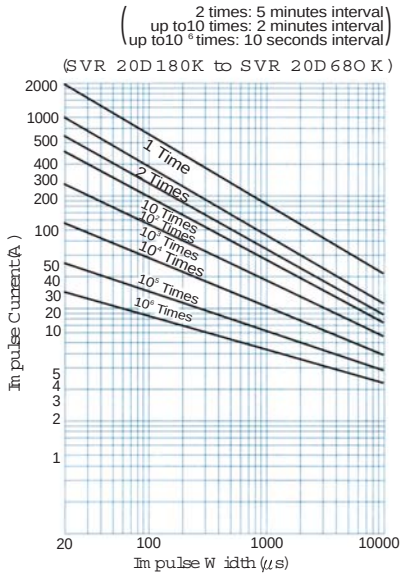
SVR 20D820K to SVR 20D471K

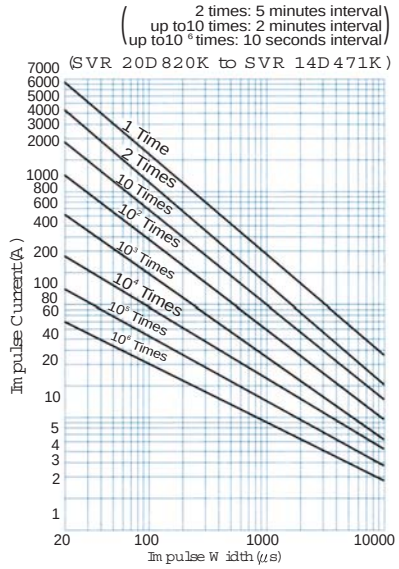


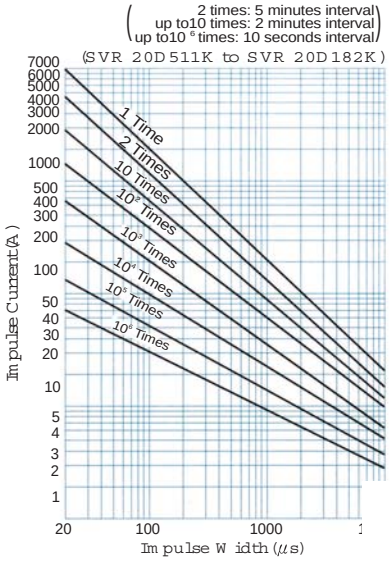
SVR 20D511K to SVR 20D182K



Im Pulse Life Time Ratings







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