



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, CA 90638
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DESIGNER'S DATA SHEET

FEATURES:

- Hermetically Sealed in Glass
- High Peak Transient Power 1000 W
- Can Be Used as a 5 W Zener
- Available in Axial, Surface Mount, and Ministud Configurations
 TX, TXV, and Space Level Screening Available^{2/}
- Higher Voltages Available (consult factory)

Part Number / Ordering Information^{1/}

ST1000 **A** **9.1** **SMS** **TX**
 _____ Screening^{2/}
 _____ = Not Screened
 TX = TX Level
 TXV = TXV Level
 S = S Level

_____ Package:^{3/}
 _____ = Axial
 SMS = Square Tab
 V = Isolated Ministud
 C = Ministud

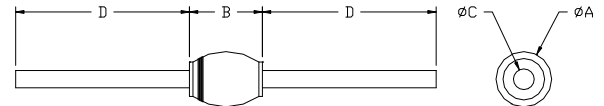
Voltage: example
 9.1 = 9.1V

Tolerance A = ± 10%
 B = ± 5 %

ST1000 Series

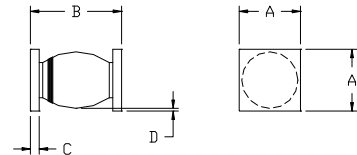
**1000 W
 Transient Voltage Suppressor
 7.5 – 510 VOLTS**

Axial



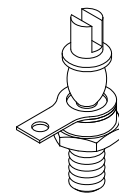
DIM	MIN	MAX
A	—	0.158"
B	—	0.185"
C	0.047"	0.053"
D	1.0"	—

SMS



DIM	MIN	MAX
A	0.170"	0.180"
B	0.200"	0.225"
C	0.018"	0.027"
D	0.001"	—

Isolated Ministud



Ministud



Maximum Ratings	Symb	Value	Unit
Peak pulse power dissipation 100 μs Square Wave (see Fig 2)	P_{PPM}	1000	W
Peak pulse power dissipation ^{5/} 10/1000 μs waveform (see Fig 1 & 2)	P_{PPM}	500	W
Steady State Power Dissipation Axial Lead : T _L =25°C, L=3/8" SMS & Ministud: T _C or T _E = 75 °C	P_D	6.0	W
Operating and Storage Temp.	T_{op} & T_{stg}	-65 to +175	°C
Maximum Forward Voltage Drop I _F = 6.0 Apk, T _A = 25 °C, pulsed	V_F	1.3	V
Thermal Resistance, Junction to Lead L=3/8"	R_{θJL}	25	°C/W
Thermal Resistance, Junction to End Cap Junction to Case	R_{θJE} R_{θJC}	8	°C/W

NOTES:

- 1/ For ordering information, price, and availability – contact factory.
- 2/ Screening based on MIL-PRF-19500. Screening flows available on request. X-Ray shall be performed in lieu of Precap Inspection – Consult factory.
- 3/ Consult factory for package outlines.
- 4/ All voltages are measured with an automated test set using a 35 msec test time. Longer or shorter test time will have a corresponding effect on the measured value due to heating effects.
- 5/ Exponential waveform i.a.w. IEC60-1 10/1000 uS pulse

NOTE: All specifications are subject to change without notification.
 SCD's for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: T00033D

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ST1000 Series

Nominal Breakdown Voltage			Test Current	Maximum Reverse Current @ Standoff Voltage		Typical Temperature Coefficient	Maximum Clamping Voltage	
$V_{BR} @ I_T^{4I}$			I_T	$I_R @ V_R$	Standoff Voltage	$TC @ I_T$	$V_{CL} @ I_{CL}$	I_{CL}
V (Nom)	A	B	mA	μA	V	% / °C	V	Amps
7.5			175	3000	6.2	0.07	11.3	44.2
8.2			150	2400	6.8	0.08	12.3	40.6
9.1	$\pm 10\%$	$\pm 5\%$	150	100	7.5	0.08	13.3	37.6
10			125	40	8.2	0.09	14.8	34.0
11			125	30	9.1	0.10	15.7	31.8
12			100	20	10	0.10	17.0	29.4
13			100	10	11	0.10	18.9	26.4
15	$\pm 10\%$	$\pm 5\%$	75	10	12	0.10	20.9	23.9
16			75	10	13	0.11	22.9	21.8
18			65	10	15	0.11	25.6	19.5
20			65	10	16	0.11	28.4	17.6
22			50	10	18	0.11	31.0	16.1
24	$\pm 10\%$	$\pm 5\%$	50	10	20	0.11	33.8	14.8
27			50	10	22	0.11	38.1	13.1
30			40	10	24	0.11	42.2	11.8
33			40	10	27	0.11	46.2	10.8
36			30	10	30	0.11	50.1	10.0
39	$\pm 10\%$	$\pm 5\%$	30	10	33	0.11	54.1	9.2
43			25	10	36	0.12	60.7	8.2
47			25	10	39	0.12	65.5	7.6
51			25	10	43	0.12	70.8	7.0
56			20	10	47	0.12	78.6	6.3
62	$\pm 10\%$	$\pm 5\%$	20	10	51	0.13	86.5	5.8
68			20	10	56	0.13	94.4	5.3
75			20	10	62	0.13	103.5	4.8
82			15	10	68	0.13	114	4.3
91			15	10	75	0.13	126	3.9
100	$\pm 10\%$	$\pm 5\%$	12	10	82	0.13	139	3.6
110			12	10	91	0.13	152	3.3
120			10	10	100	0.13	167	3.0
130			10	10	110	0.13	185	2.7
150			8.0	10	130	0.13	204	2.4
160	$\pm 10\%$	$\pm 5\%$	8.0	10	150	0.13	224	2.2
180			5.0	10	160	0.13	249	2.0
200			5.0	10	170	0.13	276	1.8
220			5.0	10	180	0.13	305	1.6
240			5.0	10	200	0.13	336	1.5
270	$\pm 10\%$	$\pm 5\%$	5.0	10	220	0.13	380	1.3
300			5.0	10	240	0.13	419	1.2
330			5.0	10	270	0.13	459	1.1
360			5.0	10	300	0.13	498	1.00
390			5.0	10	330	0.13	537	0.93
430	$\pm 10\%$	$\pm 5\%$	5.0	10	360	0.13	603	0.83
470			5.0	10	390	0.13	655	0.76
510			5.0	10	430	0.13	707	0.71

Figure 1 – Exponential 10 / 1000 uS Waveform

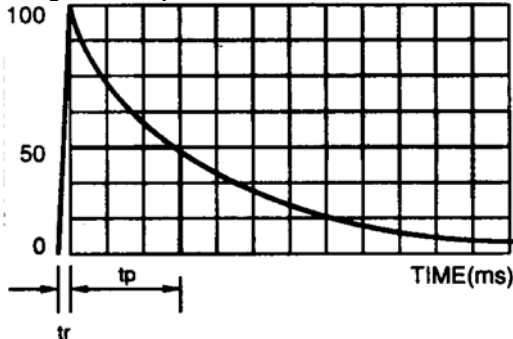
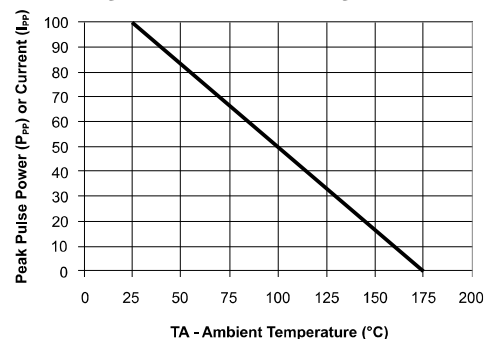


Figure 2 - Pulse Derating Curve



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