Solid State Devices, Inc.
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ST1000 Series

DESIGNER'S DATA SHEET

1000 W
Transient Voltage Suppressor
7.5 – 510 VOLTS

FEATURES:

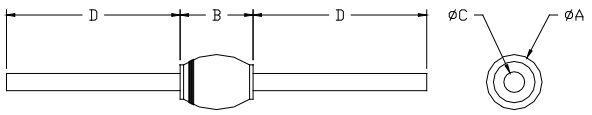
- **Hermetically Sealed in Glass**
- **High Peak Transient Power 1000 W**
- **Can Be Used as a 5 W Zener**
- **Available in Axial, Surface Mount, and Ministud Configurations**
  TX, TXV, and Space Level Screening Available 2/
- **Higher Voltages Available (consult factory)**

Part Number / Ordering Information 1/

ST1000 A 9.1 SMS TX

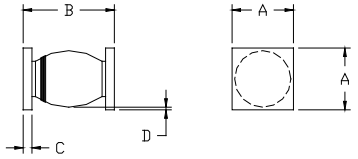
- **Screening** 2/
  - __ = Not Screened
  - TX = TX Level
  - TXV = TXV Level
  - S = S Level
- **Package:** 3/
  - __ = Axial
  - SMS = Square Tab
  - V = Isolated Ministud
  - C = Ministud
- **Voltage:** **example** 9.1 = 9.1V
- **Tolerance** A = ± 10%, B = ± 5 %

Axial



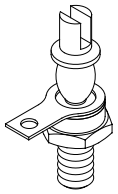
DIM	MIN	MAX
A	—	0.158”
B	—	0.185”
C	0.047”	0.053”
D	1.0”	—

SMS

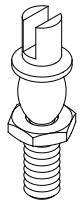


DIM	MIN	MAX
A	0.170"	0.180”
B	0.200”	0.225”
C	0.018”	0.027”
D	0.001”	—

Isolated Ministud



Ministud



Maximum Ratings	Symbol	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=25ºC, L=3/8" SMS & Ministud: T_C or T_E = 75 ºC	P_D	6.0	**W**
Operating and Storage Temp.	T_{op} & T_{stg}	-65 to +175	**ºC**
Maximum Forward Voltage Drop I_F = 6.0 Apk, T_A = 25 ºC, pulsed	V_F	1.3	**V**
Thermal Resistance, Junction to Lead L=3/8”	$R_{\theta JL}$	25	**ºC/W**
Thermal Resistance, Junction to End Cap Junction to Case	$R_{\theta JE}$ $R_{\theta JC}$	8	**ºC/W**

NOTES: *Pulsed per MIL-STD-750.
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

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Nominal Breakdown Voltage			Test Current	Maximum Reverse Current @ Standoff Voltage		Typical Temperature Coefficient	Maximum Clamping Voltage	
V_{BR} @ I_T [4]			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	±10%	±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	±10%	±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	±10%	±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	±10%	±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	±10%	±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	±10%	±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	±10%	±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	±10%	±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	±10%	±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

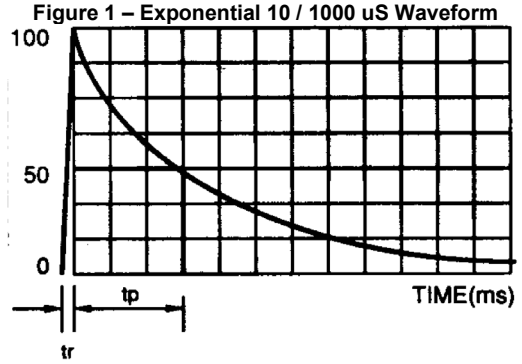
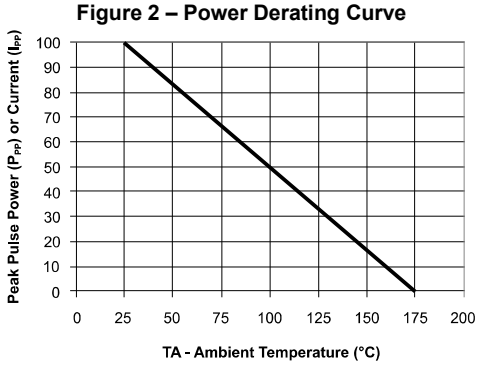


Figure 2 – Power Derating Curve



NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.	DATA SHEET #: T00033E	DOCX