



**Solid State Devices, Inc.**

14701 Firestone Blvd \* La Mirada, Ca 90638

Phone: (562) 404-4474 \* Fax: (562) 404-1773

ssdi@ssdi-power.com \* www.ssdi-power.com

**DESIGNER'S DATA SHEET**

**FEATURES:**

- Hermetically Sealed in Glass
- High Peak Transient Power 500 W
- Can Be Used as a 5 W Zener
- Available in Axial, Surface Mount, and Ministud Configurations  
TX, TXV, and Space Level Screening Available<sup>2/</sup>
- Higher Voltages Available

**Part Number / Ordering Information**<sup>1/</sup>

ST500 **A** **9.6** **SMS** **TX**

Screening<sup>2/</sup>      = Not Screened  
 TX = TX Level  
 TXV = TXV Level  
 S = S Level

Package:<sup>3/</sup>      = Axial  
 SMS = Square Tab  
 V = Isolated Ministud  
 C = Ministud

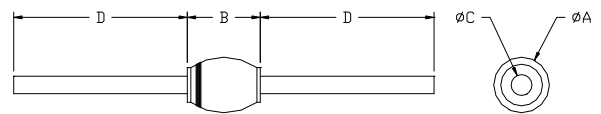
Voltage: 9.6 = 9.6V

Tolerance A = ± 10%  
 B = ± 5 %

**ST500A7.5  
thru  
ST500A270**

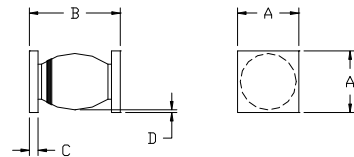
**500 W Transient Voltage  
Suppressor  
7.5 – 510 VOLTS**

Axial



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

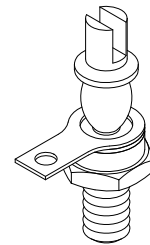
SMS



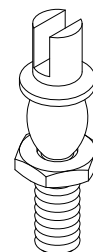
DIM	MIN	MAX
A	0.170"	0.180"
B	0.200"	0.225"
C	0.018"	0.027"
D	0.001"	—

Maximum Ratings	Symbol	Value	Units
Peak pulse power dissipation with a 10/1000 µs waveform	P <sub>PPM</sub>	500	W
Steady State Power Dissipation Axial Lead : T <sub>L</sub> =25°C, L=3/8" SMS & Ministud: T <sub>C</sub> or T <sub>E</sub> = 75 °C	P <sub>D</sub>	5.0	W
Operating and Storage Temp.	T <sub>op</sub> & T <sub>stg</sub>	-65 to +175	°C
Maximum Forward Voltage Drop I <sub>F</sub> = 1.0 Apk, T <sub>A</sub> = 25 °C, pulsed	V <sub>F</sub>	1.2	V
Thermal Resistance, Junction to Lead L=3/8"	R <sub>θJL</sub>	25	°C/W
Thermal Resistance, Junction to End Cap Junction to Case	R <sub>θJE</sub> R <sub>θJC</sub>	8	°C/W

Isolated Ministud



Ministud



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

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**ST500A7.5  
thru  
ST500A270**

**Electrical Characteristics @ 25 °C**

Nominal Breakdown Voltage			Test Current	Typical Impedance 10% AC modulation	Maximum Reverse Current @ Standoff Voltage		Typical Temperature Coefficient	Maximum Clamping Voltage 10 / 1000 $\mu$ s waveform	
$V_{BR} @ I_T^{4/}$					$I_T$	$I_R @ V_R$		Standoff Voltage	$TC @ I_T$
V (Nom)	A	B	mA	Ohms	$\mu$ A	V	% / °C	V	Amps
7.5	±10%	±5%	175	0.7	3000	6.2	0.07	11.3	44.2
8.2			150	0.8	2400	6.8	0.08	12.3	40.6
9.1			150	0.9	100	7.5	0.08	13.3	37.6
10			125	1.0	40	8.2	0.09	14.8	34.0
11			125	1.1	30	9.1	0.10	15.7	31.8
12	±10%	±5%	100	1.1	20	10	0.10	17.0	29.4
13			100	1.2	10	11	0.10	18.9	26.4
15			75	1.2	10	12	0.10	20.9	23.9
16			75	1.3	10	13	0.11	22.9	21.8
18			65	1.3	10	15	0.11	25.6	19.5
20	±10%	±5%	65	1.5	10	16	0.11	28.4	17.6
22			50	1.6	10	18	0.11	31.0	16.1
24			50	1.8	10	20	0.11	33.8	14.8
27			50	2.5	10	22	0.11	38.1	13.1
30			40	4.0	10	24	0.11	42.2	11.8
33	±10%	±5%	40	5.0	10	27	0.11	46.2	10.8
36			30	6.0	10	30	0.11	50.1	10.0
39			30	7.0	10	33	0.11	54.1	9.2
43			35	10	10	36	0.12	60.7	8.2
47			25	12	10	39	0.12	65.5	7.6
51	±10%	±5%	25	14	10	43	0.12	70.8	7.0
56			20	18	10	47	0.12	78.6	6.3
62			20	20	10	51	0.13	86.5	5.8
68			20	22	10	56	0.13	94.4	5.3
75			20	25	10	62	0.13	103.5	4.8
82	±10%	±5%	15	30	10	68	0.13	114	4.3
91			15	40	10	75	0.13	126	3.9
100			12	45	10	82	0.13	139	3.6
110			12	65	10	91	0.13	152	3.3
120			10	90	10	100	0.13	167	3.0
130	±10%	±5%	10	100	10	110	0.13	185	2.7
150			8.0	150	10	120	0.13	204	2.4
160			8.0	180	10	130	0.13	224	2.2
180			5.0	210	10	150	0.13	249	2.0
200			5.0	250	10	160	0.13	276	1.8
220	±10%	±5%	5.0	350	10	180	0.13	305	1.6
240			5.0	450	10	200	0.13	336	1.5
270			5.0	600	10	220	0.13	380	1.3

**NOTES:**

1 Consult factory for parts ordering information

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 outline

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.

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