



Solid State Devices, Inc.

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SZ1.5A220 thru SZ1.5B510

**1.5 WATT
 220 – 510 VOLTS
 HIGH VOLTAGE
 ZENER DIODES**

DESIGNER'S DATA SHEET

Part Number/Ordering Information ^{1/}
SZ1.5

L **Screening ^{2/}**
 — = Not Screened
 TX = TX Level
 TXV = TXV Level
 S = S Level

Package Type ^{3/}
 — = Axial Leaded
 SM = Surface Mount Round Tab
 SMS = Surface Mount Square Tab

Voltage / Family
 220 thru 510 = 220V thru 510V
 (see Table 1)

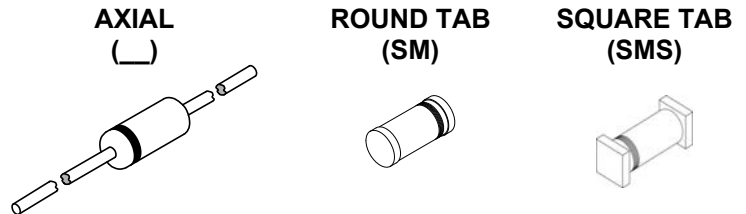
Voltage Tolerance
 A = 10 %
 B = 5%

- FEATURES:**
- Hermetically sealed in glass
 - Axial lead rated at 1.5 W
 - TX, TXV, and S level screening available^{2/}
 - Voltage tolerances of 10% (A) and 5% (B) available; contact factory for other voltage tolerances
 - Voltage range from 220V to 510V; for zener voltages less than 220V, refer to data sheet # Z00008 / SSDI part numbers SZN4460 thru SZN4496
 - For higher voltages up to 1200V, consult factory

Maximum Ratings	Symbol	Value	Units
Nominal Zener Voltage	V_Z	220 - 510	V
Maximum Zener Current	I_{ZM}	2.9 – 6.8	mA
Zener Surge Current (8.3 msec Pulse)	I_{ZSM}	40 - 90	mA
Continuous Power	P_D	1.5	W
Operating and Storage Temp.	Top & Tstg	-65 to +175	°C
Thermal Resistance Junction to Lead, Axial, L=3/8" Junction to End Cap, SM / SMS	$R_{\theta JL}$ $R_{\theta JE}$	65 32	°C/W

NOTES:

- 1/ For ordering information, price, and availability- contact factory.
- 2/ Screening Based on MIL-PRF-19500. Screening Flows Available on Request.
- 3/ SSDI standard marking consists of a contrasting color cathode band and Zxxx where the xxx is the nominal Vz voltage. The full part number information is included on packaging labels.
- 4/ All zener 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/ Zener impedance is derived from the AC voltage divided by the AC current with RMS value of 10% of DC zener test current superimposed on the test current.
- 6/ I_{ZSM} values indicated are for a peak sinusoidal surge current of 8.3 msec duration, non-repetitive. The 8.3 msec square pulse rating is 71% of the value shown.



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

DATA SHEET #: Z00017A

DOC



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SZ1.5A220 thru SZ1.5B510

Table 1

PART NUMBER VOLTAGE TOLERANCE		ELECTRICAL SPECIFICATIONS @ 25°C						MAXIMUM RATINGS		
		Nominal Zener Voltage ^{4/}	Zener Test Current	Maximum Zener Impedance ^{5/}	Maximum Reverse Leakage Current		Typical Temperature Coefficient	Maximum Continuous Current	Maximum Surge Current ^{6/}	
					IR @ VR	VR				TC @ IZT
10%	5%	VZ @ IZT	IZT	ZZ @ IZT	IR @ VR	VR	TC @ IZT	IZM	Izsm	
		VOLT	mA	Ohms	µA	10%(A)	5%(B)	%/°C	mA	Amps
SZ1.5A220	SZ1.5B220	220	2	1850	1	152	160	.13	6.8	0.09
SZ1.5A240	SZ1.5B240	240	2	2050	1	171	180	.13	6.3	0.09
SZ1.5A270	SZ1.5B270	270	2	2300	1	190	200	.13	5.6	0.08
SZ1.5A300	SZ1.5B300	300	2	2700	1	210	220	.14	5.0	0.07
SZ1.5A330	SZ1.5B330	330	2	2900	1	230	240	.14	4.5	0.07
SZ1.5A360	SZ1.5B360	360	2	3300	1	260	270	.14	4.2	0.06
SZ1.5A390	SZ1.5B390	390	2	3900	1	290	300	.14	3.8	0.06
SZ1.5A430	SZ1.5B430	430	2	4500	1	310	330	.15	3.5	0.05
SZ1.5A470	SZ1.5B470	470	2	5200	1	340	360	.15	3.2	0.05
SZ1.5A510	SZ1.5B510	510	2	5900	1	370	390	.16	2.9	0.04

CASE OUTLINE: AXIAL^{3/}

DIM	MIN	MAX
A	---	.085"
B	.130"	.175"
C	1.00"	---
D	.028"	.034"

CASE OUTLINE: ROUND TAB (SM)^{3/}

DIM	MIN	MAX
A	.077"	.083"
B	.130"	.146"
C	.010"	.022"
D	+.000"	---

CASE OUTLINE: SQUARE TAB (SMS)^{3/}

DIM	MIN	MAX
A	.090"	.100"
B	.175"	.215"
C	.022"	.028"
D	.002"	---

All dimensions are prior to soldering