Solid State Devices, Inc.
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SZ1A3.3 thru SZ1A100

DESIGNER'S DATA SHEET

1.0W and 1.5W 3.3 – 100 VOLTS ZENER DIODES

FEATURES:

- **Hermetically Sealed in Glass**
- **Axial Lead Rated at 1 Watt**
- **Surface Mount Rated at 1.5 Watts**
- **Available in Axial (__), Round Tab Surface Mount (SM) and Square Tab Surface Mount (SMS) Versions**
- **Available to TX, TXV, and Space Levels** [5/]
- **Available in 10% and 5% Tolerances. For other Voltage Tolerances, Contact Factory.**

Maximum Ratings		Symbol	Value	Units
Nominal Zener Voltage		V_Z	3.3 - 100	**V**
Forward Surge Current 8.3 msec pulse		I_{ZSM}	45 - 1380	**mA**
Zener Current	**Axial** **SM, SMS**	I_{ZM}	11 - 276 16.5 – 414	**mA**
Continuous Power	**Axial** **SM, SMS**	P_D	1.0 1.5	**W**
Operating and Storage Temp.		**Top, Tstg**	-65 to +175	**ºC**
Thermal Resistance, Junction to Lead, L=3/8" (for Axial) Junction to End Cap (for SM, SMS) Junction to Ambient (for All)		$R_{\theta JL}$ $R_{\theta JE}$ $R_{\theta JA}$	125 83.3 150	**ºC/W**

Part Number/Ordering Information [4/]

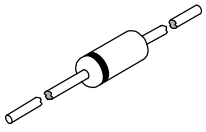
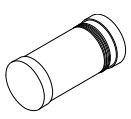
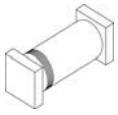
SZ1 ___ ___ ___ ___

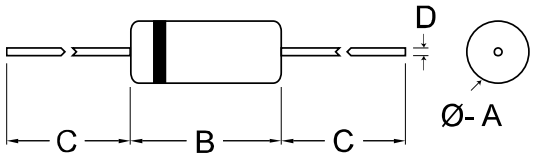
Screening [5/] __ = Not Screened
TX = TX Level
TXV = TXV
S = S Level (for SM, use –S)

Package Type [3/]
__ = Axial Leaded
SM = Surface Mount Round Tab
SMS = Surface Mount Square Tab

Voltage/Family
3.3 thru 100 = 3.3V thru 100V,
See Table on Page 2

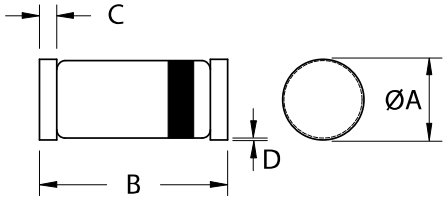
Voltage Tolerance
A = 10% Voltage Tolerance
B = 5% Voltage Tolerance



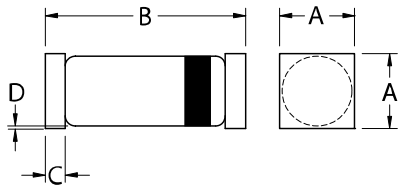
DIM	MIN.	MAX
A	.080"	.107"
B	.145"	.205"
C	1.00"	---
D	.028"	.034"

AXIAL (__) All dimensions are prior to soldering



DIM	MIN.	MAX.
A	.084"	.102"
B	.189"	.205"
C	.010"	.022"
D	Body to Tab Clearance: .001"	

ROUND TAB (SM) All dimensions are prior to soldering



DIM	MIN.	MAX.
A	.125"	.135"
B	.195"	.260"
C	.023"	.027"
D	Body to Tab Clearance: .001"	

SQUARE TAB (SMS) All dimensions are prior to soldering

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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SZ1A3.3 thru SZ1A100

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

PART NUMBER (note 6)		Nominal Zener Voltage (note 1)	Zener Test Current	Maximum Zener Impedance (note 2)		Maximum Reverse Leakage Current			Typical Range of Temperature Coefficient (note 7)	Maximum Continuous Current		Maximum Surge Current (note 8)
										Axial (__)	Surface Mount (SM) & (SMS)	
Voltage Tolerance		VZ @ IZT	IZT	ZZ @ IZT	ZZK @ IZK = 10%IZT	IR @ VR	VR 10% (A Suffix)	VR 5% (B Suffix)	TC @ IZT	IZM	IZM	IZSM
10%	5%	Volts	mA	Ohms		µA	Volts		mV/ºC	mA		mA
SZ1A3.3	SZ1B3.3	3.3	76	10	400	100	0.95	1.0	-3 to 0	276	414	1380
SZ1A3.6	SZ1B3.6	3.6	69	10	400	100	0.95	1.0	-3 to 0	252	378	1260
SZ1A3.9	SZ1B3.9	3.9	64	9.0	400	50	0.95	1.0	-3 to 0	238	357	1190
SZ1A4.3	SZ1B4.3	4.3	58	9.0	400	10	0.95	1.0	-3 to 0	213	319.5	1070
SZ1A4.7	SZ1B4.7	4.7	53	8.0	500	10	0.95	1.0	-2 to 1	194	291	970
SZ1A5.1	SZ1B5.1	5.1	49	7.0	550	10	0.95	1.0	0 to 2	178	267	890
SZ1A5.6	SZ1B5.6	5.6	45	5.0	600	10	1.90	2.0	1 to 3	162	243	810
SZ1A6.2	SZ1B6.2	6.2	41	2.0	700	10	2.90	3.0	2 to 4	146	219	730
SZ1A6.8	SZ1B6.8	6.8	37	1.5	700	10	2.90	3.0	2.5 to 4.5	133	199.5	660
SZ1A7.5	SZ1B7.5	7.5	34	3.5	700	10	2.90	3.0	3 to 5	121	181.5	605
SZ1A8.2	SZ1B8.2	8.2	31	4.0	700	10	5.0	5.2	4 to 5.5	140	210	550
SZ1A9.1	SZ1B9.1	9.1	28	4.5	700	10	5.3	5.7	5 to 6.3	125	187.5	500
SZ1A10	SZ1B10	10	25	5.0	700	10	5.9	6.2	5.8 to 7.0	115	172.5	454
SZ1A11	SZ1B11	11	23	7.0	700	7.5	6.6	6.9	6.8 to 8	105	157.5	414
SZ1A12	SZ1B12	12	21	8.0	700	5.0	7.2	7.6	7.9 to 9.0	95	142.5	380
SZ1A13	SZ1B13	13	19	9.0	700	5.0	8.0	8.4	10 to 13	85	127.5	344
SZ1A15	SZ1B15	15	17	10	700	2.0	8.6	9.1	11 to 14	80	120	304
SZ1A16	SZ1B16	16	15.5	14	700	1.0	9.4	9.9	12 to 15	74	111	285
SZ1A18	SZ1B18	18	14.0	16	750	1.0	10.8	11.4	14 to 17	63	94.5	250
SZ1A20	SZ1B20	20	12.5	20	750	1.0	11.6	12.2	16 to 19	60	90	225
SZ1A22	SZ1B22	22	11.5	22	750	0.5	13.0	13.7	17 to 20	52	78	205
SZ1A24	SZ1B24	24	10.5	23	750	0.5	14.4	15.2	19 to 22	47	70.5	190
SZ1A27	SZ1B27	27	9.5	25	750	0.5	15.9	16.7	21 to 24	43	64.5	170
SZ1A30	SZ1B30	30	8.5	35	1000	0.5	17.3	18.2	24 to 28	40	60	150
SZ1A33	SZ1B33	33	7.5	40	1000	0.5	19.8	20.6	28 to 32	34	51	135
SZ1A36	SZ1B36	36	7.0	45	1000	0.5	21.8	22.8	30 to 35	31	46.5	125
SZ1A39	SZ1B39	39	6.5	50	1000	0.5	24.1	25.1	32 to 37	28	42	115
SZ1A43	SZ1B43	43	6.0	60	1500	0.5	26.4	27.4	35 to 40	26	39	110
SZ1A47	SZ1B47	47	5.5	70	1500	0.5	28.7	29.7	40 to 45	23	34.5	95
SZ1A51	SZ1B51	51	5.0	80	1500	0.5	30.7	32.7	44 to 50	21	31.5	90
SZ1A56	SZ1B56	56	4.5	95	2000	0.5	33.8	35.8	48 to 54	19	28.5	80
SZ1A62	SZ1B62	62	4.0	110	2000	0.5	36.8	38.8	53 to 60	18	27	70
SZ1A68	SZ1B68	68	3.7	125	2000	0.5	40.6	42.6	60 to 68	17	25.5	65
SZ1A75	SZ1B75	75	3.3	150	2000	0.5	45.1	47.1	65 to 74	15	22.5	60
SZ1A82	SZ1B82	82	3.0	175	3000	0.5	48.7	51.7	70 to 80	14	21	55
SZ1A91	SZ1B91	91	2.8	200	3000	0.5	53.0	56.0	80 to 91	12	18	50
SZ1A100	SZ1B100	100	2.5	250	3000	0.5	59.2	62.2	90 to 100	11	16.5	45

NOTES:

1/ 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.

2/ 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.

3/ SSDI standard marking consists of a contrasting color cathode dot or band. Part number information is included on packaging labels.

4/ For Ordering Information, Price, Operating Curves, and Availability- Contact Factory.

5/ Screening based on MIL-PRF-19500. Screening flows available on request.

6/ Suffix "SM" for Round Tab Surface Mount and "SMS" for Square Tab Surface Mount.

7/ Temperature Range of Coefficient is -55°C to +150°C.

8/ Figures shown are for a peak sinusoidal surge current of 8.3 msec duration, non-repetitive. The 8.3 msec square wave pulse rating is 71% of the value shown.