



**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**

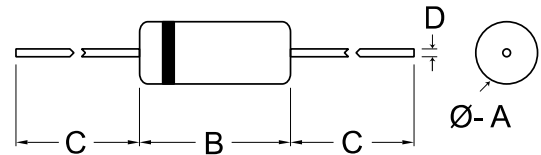
**FEATURES:**

- Hermetically Sealed in Glass
- Axial Lead Rated at 500 mW
- Surface Mount Rated at 800 mW
- Available in Axial (      ), Round Tab Surface Mount (SM) and Square Tab Surface Mount (SMS) Versions
- Available to TX, TXV, and Space Levels <sup>5/</sup>
- Available in 10%, 5% and 2% Tolerances. For other Voltage Tolerances, Contact Factory.

**SZ5A2.4  
 thru  
 SZ5A200**

**500mW and 800mW  
 2.4 – 200 VOLTS  
 ZENER DIODES**

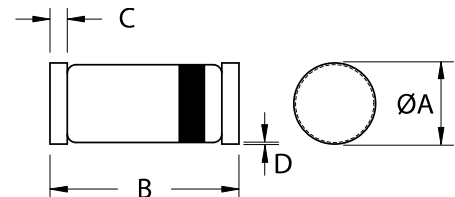
Maximum Ratings		Symbol	Value	Units
Nominal Zener Voltage		V <sub>Z</sub>	2.4 - 200	V
Zener Current	Axial	I <sub>ZM</sub>	2.2 - 198	mA
	SM, SMS		3.3 - 297	
Continuous Power	Axial	P <sub>D</sub>	500	mW
	SM, SMS		800	
Operating and Storage Temp.		Top, Tstg	-65 to +175	°C
Thermal Resistance, Junction to Lead, L=3/8" (for Axial)		R <sub>θJL</sub>	250	°C/W
Junction to End Cap (for SM, SMS)		R <sub>θJE</sub>	150	
Junction to Ambient (for All)		R <sub>θJA</sub>	300	



DIM	MIN.	MAX
A	.060"	.090"
B	.120"	.200"
C	1.00"	---
D	.018"	.022"

**AXIAL (      )**

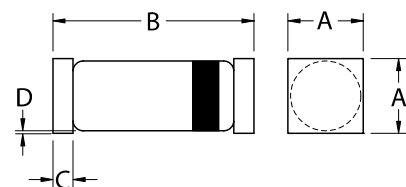
All dimensions are prior to soldering



DIM	MIN.	MAX.
A	.057"	.067"
B	.130"	.146"
C	.010"	.022"
D	Body to Tab Clearance: .001"	

**ROUND TAB (SM)**

All dimensions are prior to soldering



DIM	MIN.	MAX.
A	.093"	.097"
B	.175"	.210"
C	.023"	.027"
D	Body to Tab Clearance: .001"	

**SQUARE TAB (SMS)**

All dimensions are prior to soldering

**Part Number/Ordering Information <sup>2/</sup>**

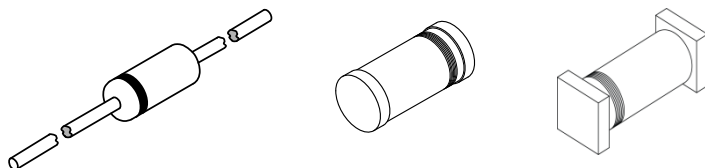
**SZ5**

**Screening <sup>5/</sup>**      = Not Screened  
 TX = TX Level  
 TXV = TXV  
 S = S Level (for SM, use -S)

**Package Type <sup>4/</sup>**  
     = Axial Leaded  
 SM = Surface Mount Round Tab  
 SMS = Surface Mount Square Tab

**Voltage/Family**  
 2.4 thru 200 = 2.4V thru 200V, See Table on Page 2

**Voltage Tolerance**  
 A = 10% Voltage Tolerance  
 B = 5% Voltage Tolerance  
 C = 2% Voltage Tolerance



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

**DATA SHEET #: Z00002G**

**DOC**



## Electrical Characteristics @ 25°C (Unless Otherwise Specified)

PART NUMBER <sup>6/</sup>			Nominal Zener Voltage <sup>1/</sup>	Zener Test Current	Maximum Zener Impedance <sup>3/</sup>		Maximum Reverse Leakage Current				Typical Temperature Coefficient	Max. Continuous Current	
												Axial	SM/SMS
Voltage Tolerance			V <sub>Z</sub> @ I <sub>ZT</sub>	I <sub>ZT</sub>	Z <sub>Z</sub> @ I <sub>ZT</sub>	Z <sub>ZK</sub> @ 250 μA	I <sub>R</sub> @ V <sub>R</sub>	V <sub>R</sub> -10%	V <sub>R</sub> -5%	V <sub>R</sub> -2%	TC @ I <sub>ZT</sub>	I <sub>ZM</sub>	I <sub>ZM</sub>
10%	5%	2%	Volts	mA	Ohms	Ohms	μA	Volts	Volts	Volts	%/°C	mA	mA
SZ5A2.4	SZ5B2.4	SZ5C2.4	2.4	20	30	1200	100	0.95	1	1.03	-0.085	198	297
SZ5A2.5	SZ5B2.5	SZ5C2.5	2.5	20	30	1250	100	0.95	1	1.03	-0.085	182	273
SZ5A2.7	SZ5B2.7	SZ5C2.7	2.7	20	30	1300	75	0.95	1	1.03	-0.080	168	252
SZ5A2.8	SZ5B2.8	SZ5C2.8	2.8	20	30	1400	75	0.95	1	1.03	-0.080	162	243
SZ5A3	SZ5B3	SZ5C3	3	20	29	1600	50	0.95	1	1.03	-0.075	152	228
SZ5A3.3	SZ5B3.3	SZ5C3.3	3.3	20	28	1600	25	0.95	1	1.03	-0.070	138	207
SZ5A3.6	SZ5B3.6	SZ5C3.6	3.6	20	24	1700	15	0.95	1	1.03	-0.065	126	189
SZ5A3.9	SZ5B3.9	SZ5C3.9	3.9	20	23	1900	10	0.95	1	1.03	-0.060	117	175.5
SZ5A4.3	SZ5B4.3	SZ5C4.3	4.3	20	22	2000	5	0.95	1	1.03	+0.055	106	159.0
SZ5A4.7	SZ5B4.7	SZ5C4.7	4.7	20	19	1900	5	1.9	2	2.06	+0.030	97	145.5
SZ5A5.1	SZ5B5.1	SZ5C5.1	5.1	20	17	1600	5	1.9	2	2.06	+0.030	89	133.5
SZ5A5.6	SZ5B5.6	SZ5C5.6	5.6	20	11	1600	5	2.9	3	3.09	+0.038	81	121.5
SZ5A6	SZ5B6	SZ5C6	6.0	20	7	1600	5	3.3	3.5	3.61	+0.038	76	114.0
SZ5A6.2	SZ5B6.2	SZ5C6.2	6.2	20	7	1000	5	3.8	4	4.12	+0.045	73	109.5
SZ5A6.8	SZ5B6.8	SZ5C6.8	6.8	20	5	750	3	4.8	5	5.15	+0.050	67	100.5
SZ5A7.5	SZ5B7.5	SZ5C7.5	7.5	20	6	500	3	5.7	6	6.18	+0.058	61	91.5
SZ5A8.2	SZ5B8.2	SZ5C8.2	8.2	20	8	500	3	6.2	6.5	6.70	+0.062	55	82.5
SZ5A8.7	SZ5B8.7	SZ5C8.7	8.7	20	8	600	3	6.2	6.5	6.70	+0.065	52	78.0
SZ5A9.1	SZ5B9.1	SZ5C9.1	9.1	20	10	600	3	6.7	7	7.21	+0.068	50	75.0
SZ5A10	SZ5B10	SZ5C10	10	20	17	600	3	7.6	8	8.24	+0.075	45	67.5
SZ5A11	SZ5B11	SZ5C11	11	20	22	600	2	8.0	8.4	8.65	+0.076	41	61.5
SZ5A12	SZ5B12	SZ5C12	12	20	30	600	1	8.7	9.1	9.37	+0.077	38	57.0
SZ5A13	SZ5B13	SZ5C13	13	9.5	13	600	0.5	9.4	9.9	10.2	+0.079	35	52.5
SZ5A14	SZ5B14	SZ5C14	14	9.0	15	600	0.1	9.5	10	10.3	+0.082	32	48.0
SZ5A15	SZ5B15	SZ5C15	15	8.5	16	600	0.1	10.5	11	11.3	+0.082	30	45.0
SZ5A16	SZ5B16	SZ5C16	16	7.8	17	600	0.1	11.4	12	12.4	+0.083	28	42.0
SZ5A17	SZ5B17	SZ5C17	17	7.4	19	600	0.1	12.4	13	13.4	+0.084	27	40.5
SZ5A18	SZ5B18	SZ5C18	18	7.0	21	600	0.1	13.3	14	14.4	+0.085	25	37.5
SZ5A19	SZ5B19	SZ5C19	19	6.6	23	600	0.1	13.3	14	14.4	+0.086	24	36.0
SZ5A20	SZ5B20	SZ5C20	20	6.2	25	600	0.1	14.3	15	15.5	+0.086	23	34.5
SZ5A22	SZ5B22	SZ5C22	22	5.6	29	600	0.1	16.2	17	17.5	+0.087	21	31.5
SZ5A24	SZ5B24	SZ5C24	24	5.2	33	600	0.1	17.1	18	18.5	+0.088	19	28.5
SZ5A25	SZ5B25	SZ5C25	25	5.0	35	600	0.1	18.1	19	19.6	+0.089	18	27.0
SZ5A27	SZ5B27	SZ5C27	27	4.6	41	600	0.1	20	21	22	+0.090	17	25.5
SZ5A28	SZ5B28	SZ5C28	28	4.5	44	600	0.1	20	21	22	+0.091	16	24.0
SZ5A30	SZ5B30	SZ5C30	30	4.2	49	600	0.1	22	23	24	+0.091	15	22.5
SZ5A33	SZ5B33	SZ5C33	33	3.8	58	700	0.1	24	25	26	+0.092	14	21.0
SZ5A36	SZ5B36	SZ5C36	36	3.4	70	700	0.1	26	27	28	+0.093	13	19.5
SZ5A39	SZ5B39	SZ5C39	39	3.2	80	800	0.1	29	30	31	+0.094	12	18.0
SZ5A43	SZ5B43	SZ5C43	43	3.0	93	900	0.1	31	33	34	+0.095	10.6	15.9
SZ5A47	SZ5B47	SZ5C47	47	2.7	105	1000	0.1	34	36	37	+0.095	9.7	14.55
SZ5A51	SZ5B51	SZ5C51	51	2.5	125	1100	0.1	37	39	40	+0.096	8.9	13.35
SZ5A56	SZ5B56	SZ5C56	56	2.2	150	1300	0.1	41	43	44	+0.096	8.1	12.15
SZ5A60	SZ5B60	SZ5C60	60	2.1	170	1400	0.1	44	46	47	+0.097	7.6	11.40
SZ5A62	SZ5B62	SZ5C62	62	2.0	185	1400	0.1	45	47	48	+0.097	7.3	10.95
SZ5A68	SZ5B68	SZ5C68	68	1.8	230	1600	0.1	49	52	54	+0.097	6.7	10.05
SZ5A75	SZ5B75	SZ5C75	75	1.7	270	1700	0.1	53	56	58	+0.098	6.1	9.15
SZ5A82	SZ5B82	SZ5C82	82	1.5	330	2000	0.1	59	62	64	+0.098	5.5	8.25
SZ5A87	SZ5B87	SZ5C87	87	1.4	370	2200	0.1	65	68	70	+0.099	5.2	7.80
SZ5A91	SZ5B91	SZ5C91	91	1.4	400	2300	0.1	66	69	71	+0.099	5.0	7.50
SZ5A100	SZ5B100	SZ5C100	100	1.3	500	2600	0.1	72	76	78	+0.110	4.5	6.75
SZ5A110	SZ5B110	SZ5C110	110	1.1	750	3000	0.1	80	84	87	+0.110	4.1	6.15
SZ5A120	SZ5B120	SZ5C120	120	1.0	900	4000	0.1	86	91	94	+0.110	3.8	5.70
SZ5A130	SZ5B130	SZ5C130	130	0.95	1100	4500	0.1	94	99	102	+0.110	3.5	5.25
SZ5A140	SZ5B140	SZ5C140	140	0.90	1300	4500	0.1	101	106	109	+0.110	3.2	4.80
SZ5A150	SZ5B150	SZ5C150	150	0.85	1500	5000	0.1	108	114	117	+0.110	3.0	4.50
SZ5A160	SZ5B160	SZ5C160	160	0.80	1700	5500	0.1	116	122	126	+0.110	2.8	4.20
SZ5A170	SZ5B170	SZ5C170	170	0.74	1900	5500	0.1	116	129	133	+0.110	2.7	4.05
SZ5A180	SZ5B180	SZ5C180	180	0.68	2200	6000	0.1	130	137	141	+0.110	2.5	3.75
SZ5A190	SZ5B190	SZ5C190	190	0.66	2400	6500	0.1	137	144	148	+0.110	2.4	3.60
SZ5A200	SZ5B200	SZ5C200	200	0.65	2500	7000	0.1	144	152	157	+0.110	2.2	3.30

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

3/ 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.

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

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.

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

DATA SHEET #: Z00002G

DOC