



**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

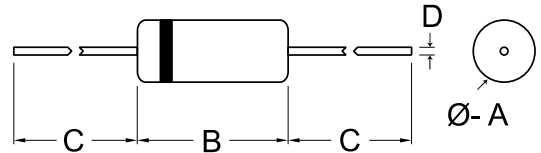
**DESIGNER'S DATA SHEET**

**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%, 2% and 1% Tolerances. For other Voltage Tolerances, Contact Factory.

**SZ5A2.4  
 thru  
 SZ5A200**

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

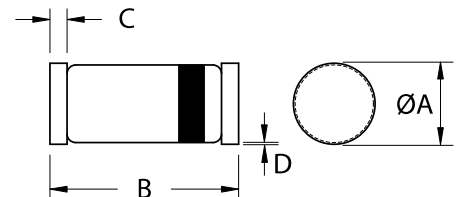


DIM	MIN.	MAX
A	.060"	.090"
B	.120"	.200"
C	1.00"	---
D	.018"	.022"

Maximum Ratings		Sym	Value	Unit
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,		R <sub>θJL</sub>	250	°C/W
Junction to Lead, L=3/8" (for Axial)		R <sub>θJE</sub>	150	
Junction to End Cap (for SM, SMS) Junction to Ambient (for All)		R <sub>θJA</sub>	300	

**AXIAL (      )**

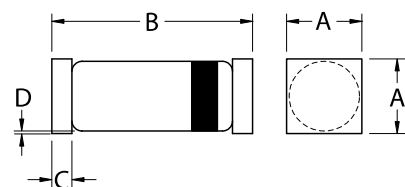
All dimensions are prior to soldering



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"	

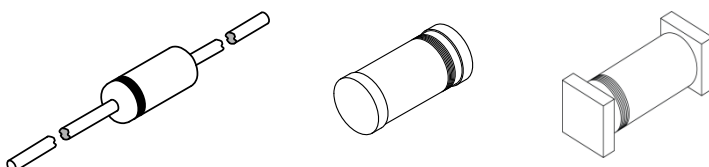
**SQUARE TAB (SMS)**

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 Level  
 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  
 L 2.4 thru 200 = 2.4V thru 200V, See Table on Pg. 2
- Voltage Tolerance  
 A = 10% Voltage Tolerance  
 B = 5% Voltage Tolerance  
 C = 2% Voltage Tolerance  
 D = 1% 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 #: Z00002H**

**DOCX**



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## SZ5A2.4 thru SZ5A200

### 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					Typ. Temp. Coefficient	Max. Continuous Current		
			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%	V <sub>R</sub> - 1%		TC @ I <sub>ZT</sub>	Axial	SM/SMS
			Ω	Ω	μA	V	V	V	V			%/°C	I <sub>ZM</sub>
V	mA	Ω	Ω	μA	V	V	V	V	%/°C	mA	mA		
SZ5A2.4	2.4	20	30	1200	100	0.95	1	1.03	1.04	-0.085	198	297	
SZ5A2.5	2.5	20	30	1250	100	0.95	1	1.03	1.04	-0.085	182	273	
SZ5A2.7	2.7	20	30	1300	75	0.95	1	1.03	1.04	-0.080	168	252	
SZ5A2.8	2.8	20	30	1400	75	0.95	1	1.03	1.04	-0.080	162	243	
SZ5A3	3	20	29	1600	50	0.95	1	1.03	1.04	-0.075	152	228	
SZ5A3.3	3.3	20	28	1600	25	0.95	1	1.03	1.04	-0.070	138	207	
SZ5A3.6	3.6	20	24	1700	15	0.95	1	1.03	1.04	-0.065	126	189	
SZ5A3.9	3.9	20	23	1900	10	0.95	1	1.03	1.04	-0.060	117	175.5	
SZ5A4.3	4.3	20	22	2000	5	0.95	1	1.03	1.04	+0.055	106	159.0	
SZ5A4.7	4.7	20	19	1900	5	1.9	2	2.06	2.08	+0.030	97	145.5	
SZ5A5.1	5.1	20	17	1600	5	1.9	2	2.06	2.08	+0.030	89	133.5	
SZ5A5.6	5.6	20	11	1600	5	2.9	3	3.09	3.12	+0.038	81	121.5	
SZ5A6	6.0	20	7	1600	5	3.3	3.5	3.61	3.65	+0.038	76	114.0	
SZ5A6.2	6.2	20	7	1000	5	3.8	4	4.12	4.16	+0.045	73	109.5	
SZ5A6.8	6.8	20	5	750	3	4.8	5	5.15	5.20	+0.050	67	100.5	
SZ5A7.5	7.5	20	6	500	3	5.7	6	6.18	6.24	+0.058	61	91.5	
SZ5A8.2	8.2	20	8	500	3	6.2	6.5	6.70	6.77	+0.062	55	82.5	
SZ5A8.7	8.7	20	8	600	3	6.2	6.5	6.70	6.77	+0.065	52	78.0	
SZ5A9.1	9.1	20	10	600	3	6.7	7	7.21	7.28	+0.068	50	75.0	
SZ5A10	10	20	17	600	3	7.6	8	8.24	8.32	+0.075	45	67.5	
SZ5A11	11	20	22	600	2	8.0	8.4	8.65	8.74	+0.076	41	61.5	
SZ5A12	12	20	30	600	1	8.7	9.1	9.37	9.47	+0.077	38	57.0	
SZ5A13	13	9.5	13	600	0.5	9.4	9.9	10.2	10.3	+0.079	35	52.5	
SZ5A14	14	9.0	15	600	0.1	9.5	10	10.3	10.4	+0.082	32	48.0	
SZ5A15	15	8.5	16	600	0.1	10.5	11	11.3	11.4	+0.082	30	45.0	
SZ5A16	16	7.8	17	600	0.1	11.4	12	12.4	12.5	+0.083	28	42.0	
SZ5A17	17	7.4	19	600	0.1	12.4	13	13.4	13.5	+0.084	27	40.5	
SZ5A18	18	7.0	21	600	0.1	13.3	14	14.4	14.5	+0.085	25	37.5	
SZ5A19	19	6.6	23	600	0.1	13.3	14	14.4	14.5	+0.086	24	36.0	
SZ5A20	20	6.2	25	600	0.1	14.3	15	15.5	15.7	+0.086	23	34.5	
SZ5A22	22	5.6	29	600	0.1	16.2	17	17.5	17.7	+0.087	21	31.5	
SZ5A24	24	5.2	33	600	0.1	17.1	18	18.5	18.7	+0.088	19	28.5	
SZ5A25	25	5.0	35	600	0.1	18.1	19	19.6	19.8	+0.089	18	27.0	
SZ5A27	27	4.6	41	600	0.1	20	21	22	22	+0.090	17	25.5	
SZ5A28	28	4.5	44	600	0.1	20	21	22	22	+0.091	16	24.0	
SZ5A30	30	4.2	49	600	0.1	22	23	24	24	+0.091	15	22.5	
SZ5A33	33	3.8	58	700	0.1	24	25	26	26	+0.092	14	21.0	
SZ5A36	36	3.4	70	700	0.1	26	27	28	28	+0.093	13	19.5	
SZ5A39	39	3.2	80	800	0.1	29	30	31	31	+0.094	12	18.0	
SZ5A43	43	3.0	93	900	0.1	31	33	34	34	+0.095	10.6	15.9	

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.

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					I <sub>R</sub> @ V <sub>R</sub>	V <sub>R</sub> - 10%	V <sub>R</sub> - 5%	V <sub>R</sub> - 2%	V <sub>R</sub> - 1%		TC @ I <sub>ZT</sub>	Axial	SM/SMS
												I <sub>ZM</sub>	I <sub>ZM</sub>
A(10%) B(5%) C(2%) D(1%)	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	μA	V	V	V	V	%/°C	mA	mA	
SZ5A47	47	2.7	105	1000	0.1	34	36	37	37	+0.095	9.7	14.55	
SZ5A51	51	2.5	125	1100	0.1	37	39	40	40	+0.096	8.9	13.35	
SZ5A56	56	2.2	150	1300	0.1	41	43	44	44	+0.096	8.1	12.15	
SZ5A60	60	2.1	170	1400	0.1	44	46	47	47	+0.097	7.6	11.40	
SZ5A62	62	2.0	185	1400	0.1	45	47	48	48	+0.097	7.3	10.95	
SZ5A68	68	1.8	230	1600	0.1	49	52	54	55	+0.097	6.7	10.05	
SZ5A75	75	1.7	270	1700	0.1	53	56	58	59	+0.098	6.1	9.15	
SZ5A82	82	1.5	330	2000	0.1	59	62	64	65	+0.098	5.5	8.25	
SZ5A87	87	1.4	370	2200	0.1	65	68	70	71	+0.099	5.2	7.80	
SZ5A91	91	1.4	400	2300	0.1	66	69	71	72	+0.099	5.0	7.50	
SZ5A100	100	1.3	500	2600	0.1	72	76	78	79	+0.110	4.5	6.75	
SZ5A110	110	1.1	750	3000	0.1	80	84	87	88	+0.110	4.1	6.15	
SZ5A120	120	1.0	900	4000	0.1	86	91	94	95	+0.110	3.8	5.70	
SZ5A130	130	0.95	1100	4500	0.1	94	99	102	103	+0.110	3.5	5.25	
SZ5A140	140	0.90	1300	4500	0.1	101	106	109	110	+0.110	3.2	4.80	
SZ5A150	150	0.85	1500	5000	0.1	108	114	117	118	+0.110	3.0	4.50	
SZ5A160	160	0.80	1700	5500	0.1	116	122	126	127	+0.110	2.8	4.20	
SZ5A170	170	0.74	1900	5500	0.1	116	129	133	134	+0.110	2.7	4.05	
SZ5A180	180	0.68	2200	6000	0.1	130	137	141	142	+0.110	2.5	3.75	
SZ5A190	190	0.66	2400	6500	0.1	137	144	148	150	+0.110	2.4	3.60	
SZ5A200	200	0.65	2500	7000	0.1	144	152	157	159	+0.110	2.2	3.30	

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