



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

**SZN6309 – SZN6355
Series**

DESIGNER'S DATA SHEET

Part Number / Ordering Information^{1/}

SZN _ _ _ _

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

Package Type
 _ = Axial Leaded
 SMS = Surface Mount Square Tab

Tolerance
 _ = 5%
 C = 2% special order
 D = 1% special order

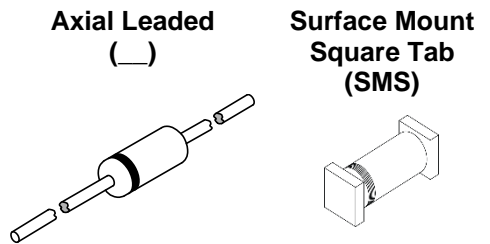
Voltage / Family 6309 - 6355

**0.5 WATT
2.4 - 200 VOLTS
ZENER DIODES**

- Features:**
- Hermetically Sealed in Glass
 - Rated at 0.5 W
 - Category III Metallurgical Bond
 - Available in Axial and Square Tab Surface Mount (SMS) Version
 - TX, TXV, and S Level Screening Available^{2/}
 - Zener Voltage: 5%, 2% or 1% Tolerance
 - Replacement for 1N6309 – 1N6333

Maximum Ratings	Symbol	Value	Unit
Nominal Zener Voltage	V _Z	2.4 - 200	V
Maximum Zener Current	I _{ZM}	2.1 - 177	mA
Zener Surge Current (8.3 ms Pulse)	I _{ZSM}	0.045 – 2.50	A
Continuous Power	P _D	0.5	W
Operating and Storage Temperature	T _{OP} & T _{STG}	-65 to +175	°C
Thermal Resistance Junction to Lead, L = 3/8" (Axial)	R _{θJL}	250	°C/W
Thermal Resistance Junction to End Cap (SMS)	R _{θJE}	250	°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/ SZN6309D through SZN6355D are 1 percent voltage tolerance. SZN6309C through SZN6355C are 2 percent voltage tolerance. SZN6309 through SZN6355 are 5 percent voltage tolerance.
 - 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/ For SZN6309-SZN6319 the test currents shall be at 2 mA and 20 mA.





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Electrical Characteristics @ 25°C (unless otherwise specified)

Part Number	V _{Z2} @ I _{Z1} ^{3/4/}	V _{Z1} @ 250 µA	I _{Z1} Test Current	Z _{ZT} @ I _{Z1}	Z _{ZK} @ 250 µA	I _{ZM} Max DC Current	V _{Z(reg)} ^{5/} @ 10 to 50% of I _{ZM}	I _{ZSM} Peak Surge (square)	V _R Test Voltage	I _{R1} @ V _R	I _{R2} @ V _R TA = +150°C	N _D @ 250 µA 1-3 kHz	α _{VZ} @ I _{Z1} T ₁ = +25°C T ₂ = +150°C
	Nom	Min	-	Max	Max	-	Max	Rating	-	Max	Max	Max	Max
	V	V	mA	Ω	Ω	mA	V	A	V	µA	µA	µV/Hz	%/°C
SZN6309	2.4	1.1	20	30	1200	177	1.50	2.50	1.0	100	200	1	-.085
SZN6310	2.7	1.2	20	30	1300	157	1.50	2.20	1.0	60	150	1	-.080
SZN6311	3.0	1.3	20	29	1400	141	1.50	2.00	1.0	30	100	1	-.075
SZN6312	3.3	1.5	20	27	1400	128	1.60	1.80	1.0	5	20	1	-.070
SZN6313	3.6	1.8	20	25	1400	117	1.60	1.65	1.0	3	12	1	-.065
SZN6314	3.9	2.0	20	23	1700	108	1.60	1.50	1.0	2	12	1	-.060
SZN6315	4.3	2.4	20	20	1700	99	0.90	1.40	1.0	2	12	1	-.045/+0.020
SZN6316	4.7	2.8	20	17	1500	90	0.70	1.27	1.5	5	12	1	-.028/+0.032
SZN6317	5.1	3.3	20	14	1300	83	0.50	1.17	2.0	5	12	1	-.020/+0.035
SZN6318	5.6	4.3	20	8	1200	76	0.40	1.10	2.5	5	10	2	+0.050
SZN6319	6.2	5.2	20	3	800	68	0.30	0.97	3.5	5	10	5	+0.060
SZN6320	6.8	6.0	20	3	700	63	0.35	1.23	4.0	2	50	5	+0.062
SZN6321	7.5	6.6	20	4	700	57	0.40	1.16	5.0	2	30	5	+0.068
SZN6322	8.2	7.5	20	5	700	52	0.40	1.07	6.0	1	10	20	+0.077
SZN6323	9.1	8.4	20	6	700	47	0.55	0.95	7.0	1	10	40	+0.078
SZN6324	10.0	9.1	20	6	800	43	0.55	0.85	8.0	1.00	10	80	+0.079
SZN6325	11.0	10.0	20	7	800	39	0.55	0.81	8.5	1.00	10	100	+0.082
SZN6326	12.0	11.0	20	7	800	35	0.60	0.77	9.0	1.00	10	100	+0.083
SZN6327	13.0	11.9	9.5	8	800	33	0.60	0.71	9.9	0.05	10	100	+0.083
SZN6328	15.0	13.8	8.5	10	800	28	0.70	0.62	11.0	0.05	10	100	+0.084
SZN6329	16.0	14.7	7.8	12	800	27	0.75	0.58	12	0.05	10	100	+0.084
SZN6330	18.0	16.6	7.0	14	800	24	0.85	0.52	14	0.05	10	100	+0.085
SZN6331	20.0	18.5	6.2	18	800	21	0.95	0.47	15	0.05	10	100	+0.086
SZN6332	22.0	20.4	5.6	20	800	19	1.05	0.43	17	0.05	10	100	+0.087
SZN6333	24.0	22.3	5.2	24	800	18	1.15	0.39	18	0.05	10	100	+0.088
SZN6334	27.0	25.2	4.6	27	800	16	1.30	0.35	21	0.05	10	100	+0.090
SZN6335	30.0	28.0	4.2	32	800	14	1.45	0.31	23	0.05	10	100	+0.091
SZN6336	33.0	30.9	3.8	40	1000	13	1.60	0.28	25	0.05	10	100	+0.092
SZN6337	36.0	33.7	3.4	50	1000	12	1.75	0.26	27	0.05	10	100	+0.093
SZN6338	39.0	36.6	3.2	55	1000	11	1.90	0.24	30	0.05	10	100	+0.094
SZN6339	43.0	40.4	3.0	65	1000	9.9	2.10	0.22	33	0.05	10	80	+0.095
SZN6340	47.0	44.2	2.7	75	1000	9.0	2.25	0.20	36	0.05	10	80	+0.095
SZN6341	51.0	48.0	2.5	85	1000	8.3	2.50	0.18	39	0.05	10	80	+0.096
SZN6342	56.0	52.7	2.2	100	1200	7.6	2.70	0.17	43	0.05	10	80	+0.097
SZN6343	32.0	58.4	2.0	125	1300	6.8	2.90	0.15	47	0.05	10	80	+0.099
SZN6344	68.0	64.1	1.8	155	1500	6.3	3.20	0.130	52	0.05	10	80	+0.101
SZN6345	75.0	70.8	1.7	180	1600	5.7	3.40	0.125	56	0.05	10	80	+0.103
SZN6346	82.0	77.4	1.5	220	1800	5.2	3.80	0.115	62	0.05	10	80	+0.105
SZN6347	91.0	86.0	1.4	270	2100	4.7	4.20	0.100	69	0.05	10	80	+0.108
SZN6348	100.0	94.5	1.3	340	2400	4.3	4.40	0.095	76	0.05	10	80	+0.110
SZN6349	110.0	104.0	1.10	500	2800	3.9	4.80	0.085	84	0.05	10	80	+0.110
SZN6350	120.0	113.0	1.00	600	3200	3.5	5.20	0.080	91	0.05	10	80	+0.110
SZN6351	130.0	122.0	0.95	850	4100	3.3	5.60	0.070	99	0.05	10	80	+0.110
SZN6352	150.0	141.0	0.85	1000	4500	2.8	7.00	0.065	114	0.05	10	80	+0.110
SZN6353	160.0	151.0	0.80	1200	5000	2.7	7.50	0.060	122	0.05	10	80	+0.110
SZN6354	180.0	170.0	0.68	1500	5600	2.4	9.00	0.050	137	0.05	10	80	+0.110
SZN6355	200.0	189.0	0.65	1800	6500	2.1	12.00	0.045	152	0.05	10	80	+0.110

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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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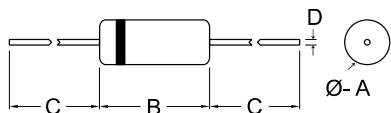
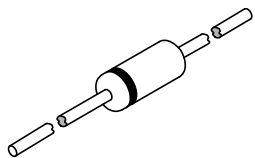


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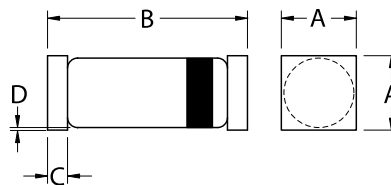
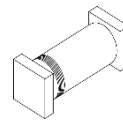
AXIAL (—)



DIM	MIN.	MAX
A	.055"	.090"
B	.090"	.200"
C	1.00"	—
D	.017"	.022"

SQUARE TAB (SMS)

All dimensions are prior to soldering



DIM	MIN.	MAX.
A	.070"	.085"
B	.175"	.215"
C	.022"	.028"
D	Body to Tab Clearance: .001"	

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