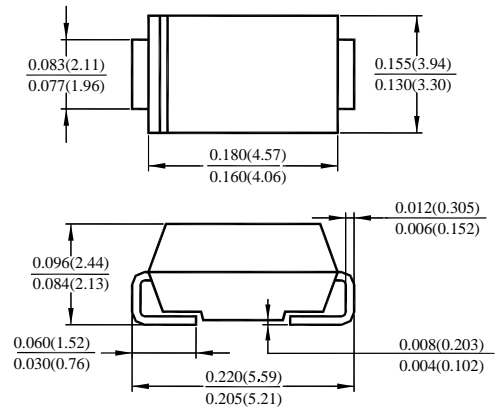


## Features

- Zener Voltage Range – 3.3 V to 200 V
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- Flat Handling Surface for Accurate Placement
- Package Design for Top Side or Bottom Circuit Board Mounting
- AEC-Q101 Qualified and PPAP Capable – SZ1SMB59xxB
- SZ Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements
- Pb-Free Packages are Available\*

## 1SMB59-BSeries SZ1SMB59-BSeries



## Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Rating	Unit
Power dissipation @ TL = 75°C	P	3000	mW
Thermal Resistance, Junction to Lead	R <sub>θJL</sub>	25	°C/W
Power dissipation @ TA = 25°C	P	550	mW
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	226	°C/W
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-65 to +150	°C

Dimensions in inches and (millimeters)

DO-214AA (SMB)

## ORDERING INFORMATION

Device	Package	Shipping <sup>†</sup>
1SMB59xxB	SMB (Pb-Free)	2,500 / Tape & Reel
SZ1SMB59xxB	SMB (Pb-Free)	2,500 / Tape & Reel

## Electrical Characteristics (Ta = 25°C)

Type	Zener voltage Vz (V)				Zener Impedance			Leakage Current		I <sub>ZM</sub> (mA) (dc)	Marking
	Min.	Mom.	Max.	@ I <sub>ZT</sub> (mA)	Z <sub>ZT</sub> @ I <sub>ZT</sub> (Ω)	Z <sub>ZK</sub> (Ω)	@ I <sub>ZK</sub> (mA)	I <sub>R</sub> (μA)	@ V <sub>R</sub> (V)		
1SMB5913B	3.13	3.3	3.47	113.6	10	500	1.0	100	1.0	454	913B
1SMB5914B	3.42	3.6	3.78	104.2	9.0	500	1.0	75	1.0	416	914B
1SMB5915B	3.70	3.9	4.10	96.1	7.5	500	1.0	25	1.0	384	915B
1SMB5916B	4.08	4.3	4.52	87.2	6.0	500	1.0	5	1.0	348	916B
1SMB5917B	4.46	4.7	4.94	79.8	5.0	500	1.0	5	1.5	319	917B
1SMB5918B	4.84	5.1	5.36	73.5	4.0	350	1.0	5	2.0	294	918B
1SMB5919B	5.32	5.6	5.88	66.9	2.0	250	1.0	5	3.0	267	919B
1SMB5920B	5.89	6.2	6.51	60.5	2.0	200	1.0	5	4.0	241	920B
1SMB5921B	6.46	6.8	7.14	55.1	2.5	200	1.0	5	5.2	220	921B
1SMB5922B	7.12	7.5	7.88	50	3.0	400	0.5	5	6.0	200	922B

## 1SMB59-BSeries SZ1SMB59-BSeries

Type	Zener voltage V <sub>Z</sub> (V)				Zener Impedance			Leakage Current		I <sub>ZM</sub> (mA) (dc)	Marking
	Min.	Mom.	Max.	@ I <sub>ZT</sub> (mA)	Z <sub>ZT</sub> @ I <sub>ZT</sub> (Ω)	Z <sub>ZK</sub> (Ω)	@ I <sub>ZK</sub> (mA)	I <sub>R</sub> (μA)	@ V <sub>R</sub> (V)		
1SMB5923B	7.79	8.2	8.61	45.7	3.5	400	0.5	5	6.5	182	923B
1SMB5924B	8.64	9.1	9.56	41.2	4.0	500	0.5	5	7.0	164	924B
1SMB5925B	9.5	10	10.5	37.5	4.5	500	0.25	5	8.0	150	925B
1SMB5926B	10.45	11	11.55	34.1	5.5	550	0.25	1	8.4	136	926B
1SMB5927B	11.4	12	12.6	31.2	6.5	550	0.25	1	9.1	125	927B
1SMB5928B	12.35	13	13.65	28.8	7.0	550	0.25	1	9.9	115	928B
1SMB5929B	14.25	15	15.75	25	9.0	600	0.25	1	11.4	100	929B
1SMB5930B	15.2	16	16.8	23.4	10	600	0.25	1	12.2	93	930B
1SMB5931B	17.1	18	18.9	20.8	12	650	0.25	1	13.7	83	931B
1SMB5932B	19	20	21	18.7	14	650	0.25	1	15.2	75	932B
1SMB5933B	20.9	22	23.1	17	17.5	650	0.25	1	16.7	68	933B
1SMB5934B	22.8	24	25.2	15.6	19	700	0.25	1	18.2	62	934B
1SMB5935B	25.65	27	28.35	13.9	23	700	0.25	1	20.6	55	935B
1SMB5936B	28.5	30	31.5	12.5	28	750	0.25	1	22.8	50	936B
1SMB5937B	31.35	33	34.65	11.4	33	800	0.25	1	25.1	45	937B
1SMB5938B	34.2	36	37.8	10.4	38	850	0.25	1	27.4	41	938B
1SMB5939B	37.05	39	40.95	9.6	45	900	0.25	1	29.7	38	939B
1SMB5940B	40.85	43	45.15	8.7	53	950	0.25	1	32.7	34	940B
1SMB5941B	44.65	47	49.35	8.0	67	1000	0.25	1	35.8	31	941B
1SMB5942B	48.45	51	53.55	7.3	70	1100	0.25	1	38.8	29	942B
1SMB5943B	53.2	56	58.8	6.7	86	1300	0.25	1	42.6	26	943B
1SMB5944B	58.9	62	65.1	6.0	100	1500	0.25	1	47.1	24	944B
1SMB5945B	64.6	68	71.4	5.5	120	1700	0.25	1	51.7	22	945B
1SMB5946B	71.25	75	78.75	5	140	2000	0.25	1	56	20	946B
1SMB5947B	77.9	82	86.1	4.6	160	2500	0.25	1	62.2	18	947B
1SMB5948B	86.45	91	95.55	4.1	200	3000	0.25	1	69.2	16	948B
1SMB5949B	95	100	105	3.7	250	3100	0.25	1	76	15	949B
1SMB5950B	104.5	110	115.5	3.4	300	4000	0.25	1	83.6	13	950B
1SMB5951B	114	120	126	3.1	380	4500	0.25	1	91.2	12	951B
1SMB5952B	123.5	130	136.5	2.9	450	5000	0.25	1	98.8	11	952B
1SMB5953B	142.5	150	157.5	2.5	600	6000	0.25	1	114	10	953B
1SMB5954B	152	160	168	2.3	700	6500	0.25	1	121.6	9	954B
1SMB5955B	171	180	189	2.1	900	7000	0.25	1	136.8	8	955B
1SMB5956B	190	200	210	1.9	1200	8000	0.25	1	152	7	956B

## 1SMB59xxB Series, SZ1SMB59xxB Series

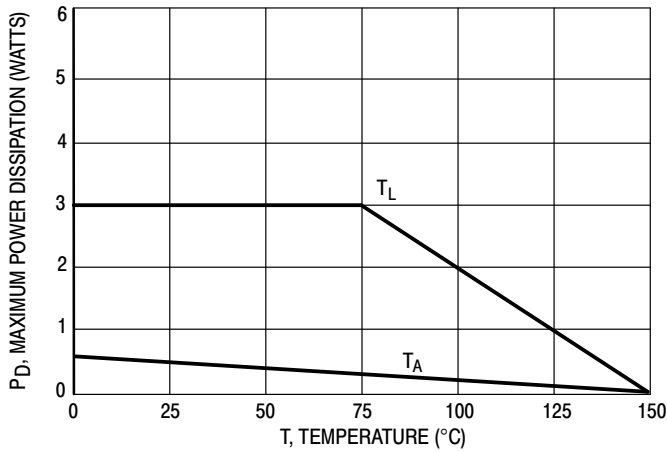


Figure 1. Steady State Power Derating

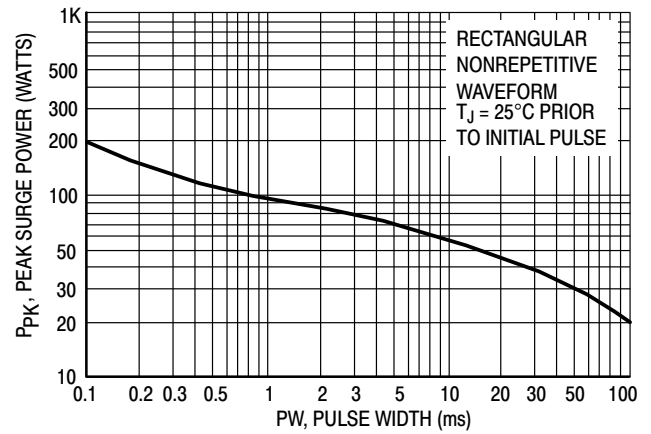


Figure 2. Maximum Surge Power

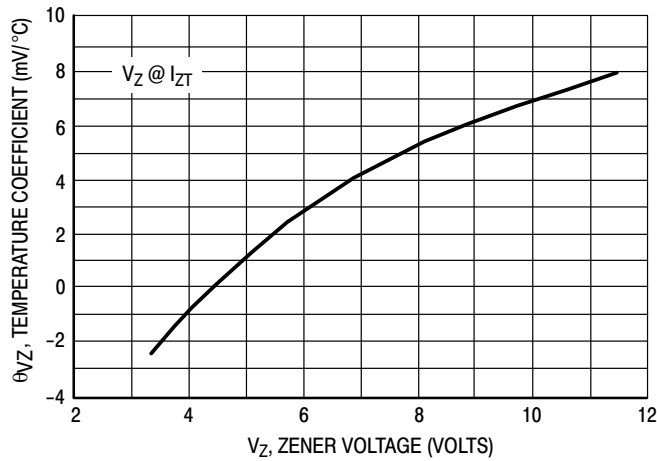


Figure 3. Zener Voltage - To 12 Volts

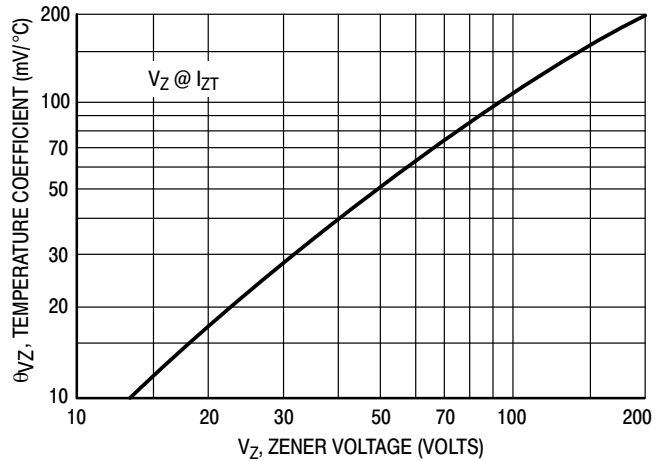


Figure 4. Zener Voltage - 14 To 200 Volts

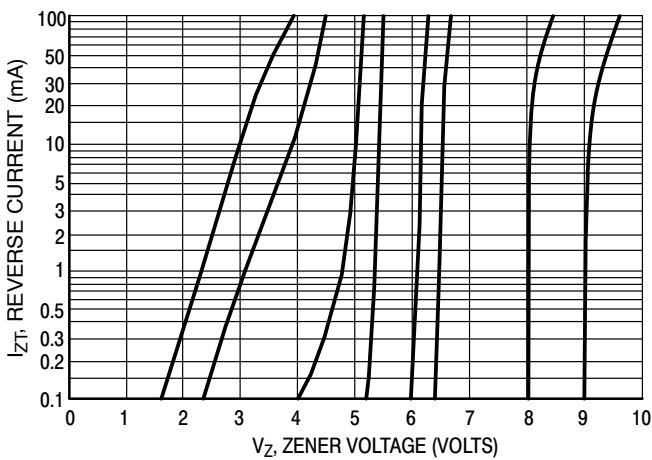


Figure 5.  $V_Z = 3.3$  thru 10 Volts

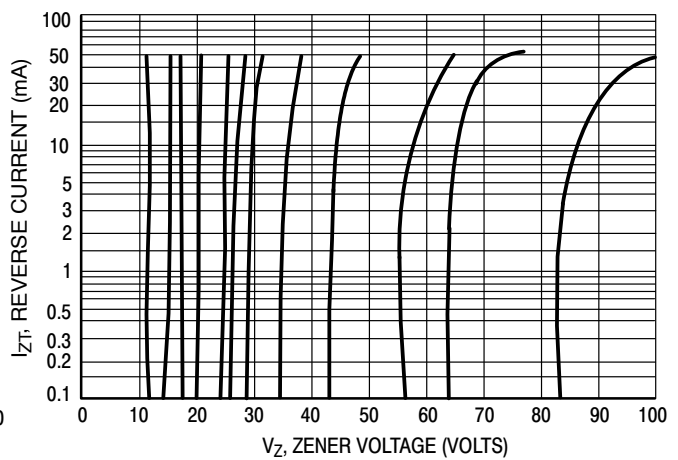


Figure 6.  $V_Z = 12$  thru 82 Volts