



## SMB59xx series

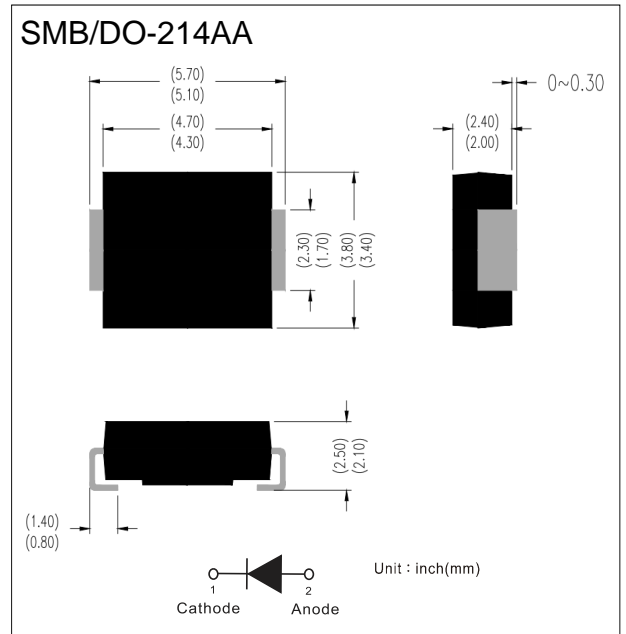
Surface Mount Silicon Zener Diodes  
Zener Voltage 3.3 ~ 200 V  
3.0 Watt Power Dissipation

### ■ Features

- Glass passivated chip
- Built-in strain relief
- Low inductance
- High peak reverse power dissipation
- Low reverse leakage
- For use in stabilizing and clipping with high power rating
- Comply with RoHS standard, halogen-free

### ■ Mechanical Data

- package:SMB/DO-214AA
- Terminal: All external surfaces are corrosion! resistant with readily solderable leads
- Polarity: Cathode line denotes the cathode end
- Epoxy: UL 94V-0 rate flame retardant
- Mounting Position : Any



### ■ Absolute Maximum Ratings ( $T_a=25^{\circ}\text{C}$ Unless otherwise specified)

Parameter	Symbol	Value	Unit
DC Power Dissipation @ $T_L=75^{\circ}\text{C}$ , Measured at Zero Lead Length Derate above $75^{\circ}\text{C}$	$P_D$	3	W
		40	mW/ $^{\circ}\text{C}$
Operating and Storage Junction Temperature Range	$T_J, T_{STG}$	-65 to +150	$^{\circ}\text{C}$

**■ Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)**

Part Number	Marking Code	Zener Voltage @ I <sub>ZT</sub>			Test Current	Zener Impedance			Leakage Current		I <sub>ZM</sub>
		V <sub>Z</sub> (V)				I <sub>T</sub> (mA)	Z <sub>ZT</sub> @I <sub>ZT</sub>	Z <sub>ZK</sub> @I <sub>ZK</sub>		I <sub>R</sub> @V	
		Min	Nom	Max	Ω		Ω	mA	uA	V	mA (dc)
SMB5913B	913B	3.13	3.3	3.47	113.6	10	500	1	100	1	454
SMB5914B	914B	3.42	3.6	3.78	104.2	9	500	1	75	1	416
SMB5915B	915B	3.7	3.9	4.1	96.1	7.5	500	1	25	1	384
SMB5916B	916B	4.08	4.3	4.52	87.2	6	500	1	5	1	348
SMB5917B	917B	4.46	4.7	4.94	79.8	5	500	1	5	1.5	319
SMB5918B	918B	4.84	5.1	5.36	73.5	4	350	1	5	2	294
SMB5919B	919B	5.32	5.6	5.88	66.9	2	250	1	5	3	267
SMB5920B	920B	5.89	6.2	6.51	60.5	2	200	1	5	4	241
SMB5921B	921B	6.46	6.8	7.14	55.1	2.5	200	1	5	5.2	220
SMB5922B	922B	7.12	7.5	7.88	50	3	400	0.5	5	6	200
SMB5923B	923B	7.79	8.2	8.61	45.7	3.5	400	0.5	5	6.5	182
SMB5924B	924B	8.64	9.1	9.56	41.2	4	500	0.5	5	7	164
SMB5925B	925B	9.5	10	10.5	37.5	4.5	500	0.25	5	8	150
SMB5926B	926B	10.45	11	11.55	34.1	5.5	550	0.25	1	8.4	136
SMB5927B	927B	11.4	12	12.6	31.2	6.5	550	0.25	1	9.1	125
SMB5928B	928B	12.35	13	13.65	28.8	7	550	0.25	1	9.9	115
SMB5929B	929B	14.25	15	15.75	25	9	600	0.25	1	11.4	100
SMB5930B	930B	15.2	16	16.8	23.4	10	600	0.25	1	12.2	93
SMB5931B	931B	17.1	18	18.9	20.8	12	650	0.25	1	13.7	83
SMB5932B	932B	19	20	21	18.7	14	650	0.25	1	15.2	75
SMB5933B	933B	20.9	22	23.1	17	17.5	650	0.25	1	16.7	68
SMB5934B	934B	22.8	24	25.2	15.6	19	700	0.25	1	18.2	62
SMB5935B	935B	25.65	27	28.35	13.9	23	700	0.25	1	20.6	55
SMB5936B	936B	28.5	30	31.5	12.5	28	750	0.25	1	22.8	50
SMB5937B	937B	31.35	33	34.65	11.4	33	800	0.25	1	25.1	45
SMB5938B	938B	34.2	36	37.8	10.4	38	850	0.25	1	27.4	41

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TYPE	Marking Code	Zener Voltage			Test Current	Zener Impedance			Leakage Current		I <sub>ZM</sub>
		V <sub>Z</sub> (V)				Z <sub>ZT</sub> @I <sub>ZT</sub>	Z <sub>ZK</sub> @I <sub>ZK</sub>		I <sub>R</sub> @V <sub>R</sub>		
		Min	Nom	Max	I <sub>ZT</sub> (mA)		Ω	mA	uA	V	
							Ω	Ω	Ω	Ω	Ω
SMB5939B	939B	37.05	39	40.95	9.6	45	900	0.25	1	29.7	38
SMB5940B	940B	40.85	43	45.15	8.7	53	950	0.25	1	32.7	34
SMB5941B	941B	44.65	47	49.35	8	67	1000	0.25	1	35.8	31
SMB5942B	942B	48.45	51	53.55	7.3	70	1100	0.25	1	38.8	29
SMB5943B	943B	53.2	56	58.8	6.7	86	1300	0.25	1	42.6	26
SMB5944B	944B	58.9	62	65.1	6	100	1500	0.25	1	47.1	24
SMB5945B	945B	64.6	68	71.4	5.5	120	1700	0.25	1	51.7	22
SMB5946B	946B	71.25	75	78.75	5	140	2000	0.25	1	56	20
SMB5947B	947B	77.9	82	86.1	4.6	160	2500	0.25	1	62.2	18
SMB5948B	948B	86.45	91	95.55	4.1	200	3000	0.25	1	69.2	16
SMB5949B	949B	95	100	105	3.7	250	3100	0.25	1	76	15
SMB5950B	950B	104.5	110	115.5	3.4	300	4000	0.25	1	83.6	13
SMB5951B	951B	114	120	126	3.1	380	4500	0.25	1	91.2	12
SMB5952B	952B	123.5	130	136.5	2.9	450	5000	0.25	1	98.8	11
SMB5953B	953B	142.5	150	157.5	2.5	600	6000	0.25	1	114	10
SMB5954B	954B	152	160	168	2.3	700	6500	0.25	1	121.6	9
SMB5955B	955B	171	180	189	2.1	900	7000	0.25	1	136.8	8
SMB5956B	956B	190	200	210	1.9	1200	8000	0.25	1	152	7

**Notes:**

Suffix " A " indicates ± 10% tolerance, suffix " B " indicates ± 5.0% tolerance.

When the model suffix is "A", the product screen printing suffix is "A",

When the model suffix is "B", the product screen printing suffix is "B".



■ Characteristics Curves(TA=25°C unless otherwise noted)

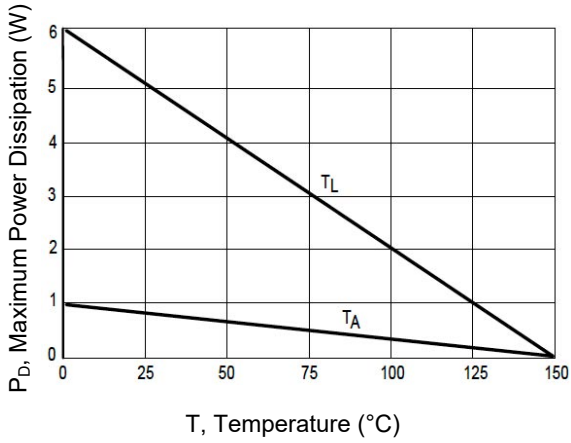


Figure.1 Steady State Power Derating

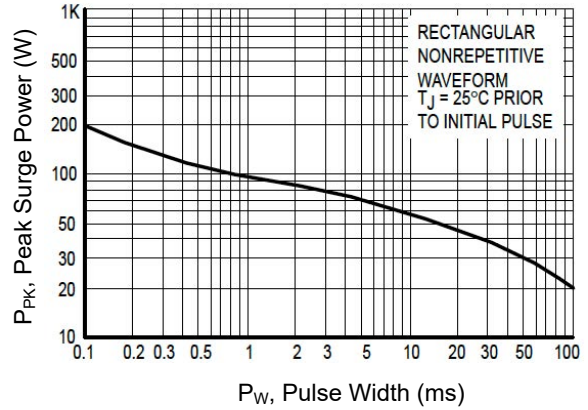


Figure.2 Maximum Surge Power

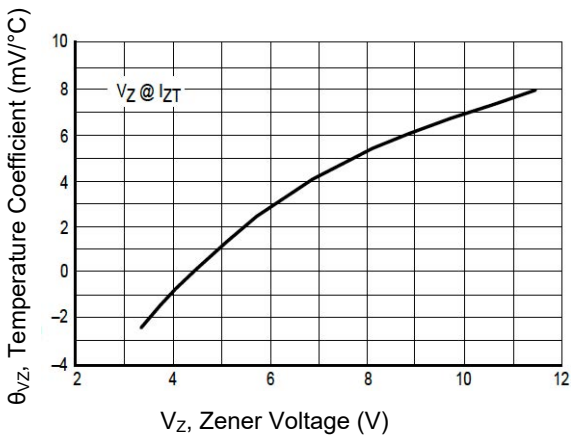


Figure.3 Zener Voltage - To 12V

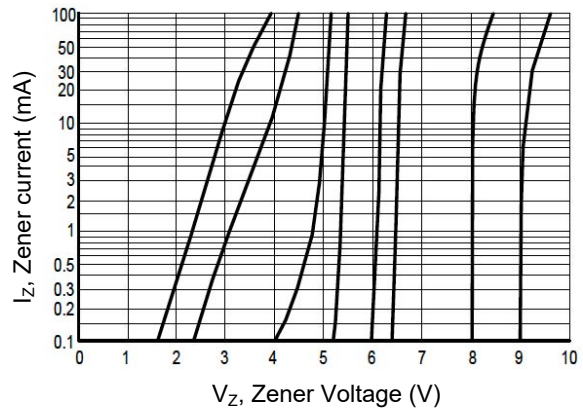


Figure.4  $V_Z=3.3\text{V}$  thru 10 V

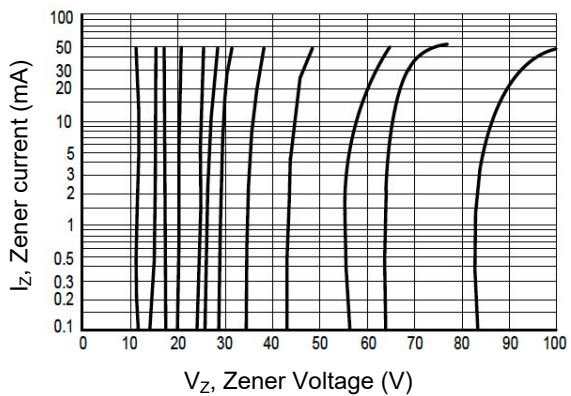


Figure 5.  $V_Z=12\text{V}$  thru 82 V

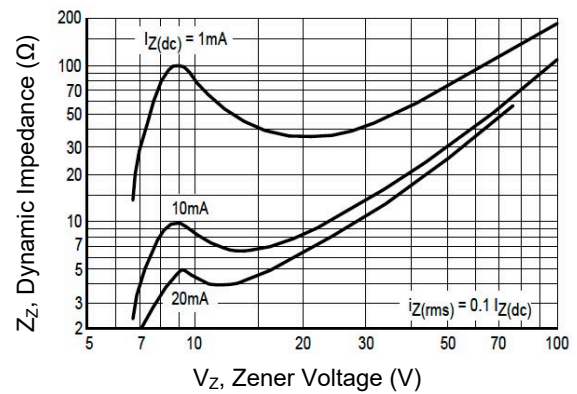


Figure 6. Effect of Zener Voltage



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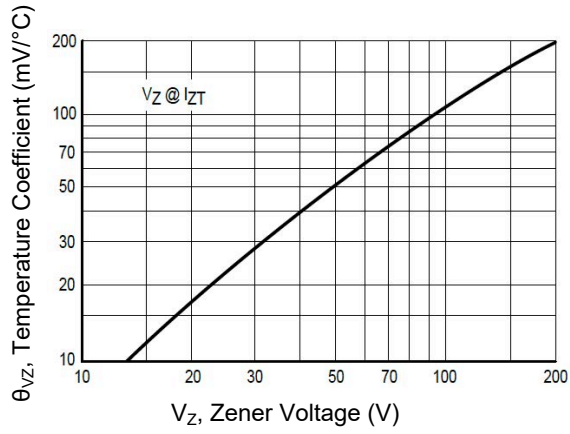


Figure 7. Zener Voltage - 14V To 200 V

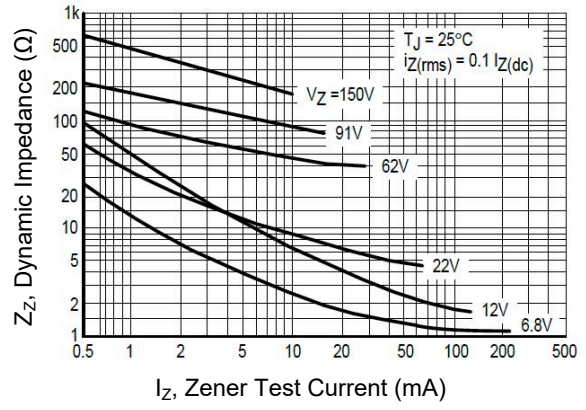


Figure 8. Effect of Zener Current