

# Zener Diodes

## 1.5W DO-214AC SMA

1SMA59xxB Series

MERITEK

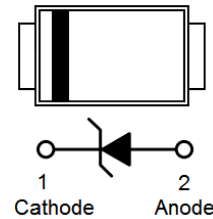
### FEATURE

- Zener Voltage Range: 5.1V to 200V
- Zener Voltage Tolerance:  $\pm 5\%$
- Low Zener Impedance
- High Reliability Clips
- Application: Power Management Systems, Voltage Regulation



### MECHANICAL DATA

- Case: Molded Plastic, DO-214AC(SMA)
- Epoxy: UL 94V-0 Flame Retardant
- Lead: Solderable Per MIL-STD-750, Method 2026
- Polarity : Color band denotes cathode end

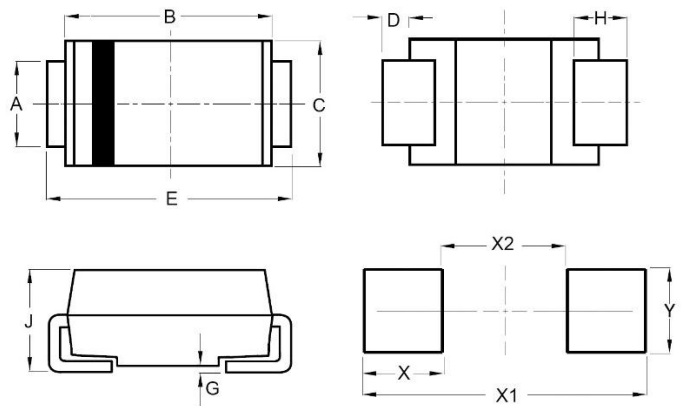


### ABSOLUTE MAXIMUM RATINGS

Parameter	Symbols	Value	Unit
Power Dissipation at $T_L = 75^\circ\text{C}$	$P_D$	1.5	W
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	100	$^\circ\text{C/W}$
Thermal Resistance From Junction to Lead	$R_{\theta JL}$	25	$^\circ\text{C/W}$
Junction Temperature Range	$T_J$	-55~+150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55~+150	$^\circ\text{C}$

### DIMENSIONS

Item	Min. (mm)	Max. (mm)
A	1.230	1.700
B	4.060	4.570
C	2.180	2.900
D	0.152	0.305
E	4.700	5.310
G	0.000	0.203
H	0.760	1.520
J	1.700	2.440
X	2.500	
X1	6.500	
X2	1.500	
Y	1.700	



**ELECTRICAL CHARACTERISTICS**

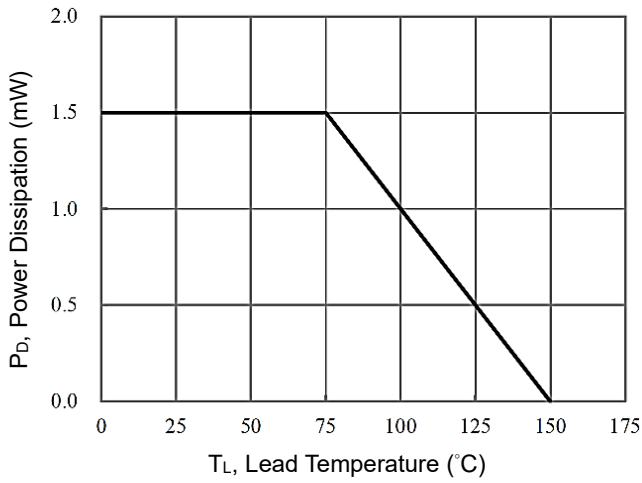
Part Number	Zener Voltage Range			Zener Impedance		Zener Impedance		Max. Reverse Current		Max. Zener Current
	V <sub>Z</sub> At I <sub>ZT</sub>			Z <sub>ZT</sub>	I <sub>ZT</sub>	Z <sub>ZK</sub>	I <sub>ZK</sub>	I <sub>R</sub>	V <sub>R</sub>	I <sub>ZM</sub>
	Min (V)	Nom (V)	Max (V)	Ω	(mA)	Ω	(mA)	(μA)	(V)	(mA)
1SMB5918B	4.845	5.1	5.355	4.0	73.5	350	1	5.0	2.0	294
1SMB5919B	5.320	5.6	5.880	2.0	66.9	250	1	5.0	3.0	267
1SMB5920B	5.890	6.2	6.510	2.0	60.5	200	1	5.0	4.0	241
1SMB5921B	6.460	6.8	7.140	2.5	55.1	200	1	5.0	5.2	220
1SMB5922B	7.125	7.5	7.875	3.0	50.0	400	0.5	5.0	6.0	200
1SMB5923B	7.790	8.2	8.610	3.5	45.7	400	0.5	5.0	6.5	182
1SMB5924B	8.645	9.1	9.555	4.0	41.2	500	0.5	5.0	7.0	164
1SMB5925B	9.500	10.0	10.50	4.5	37.5	500	0.25	5.0	8.0	150
1SMB5926B	10.45	11.0	11.55	5.5	34.1	550	0.25	1.0	8.4	136
1SMB5927B	11.40	12.0	12.60	6.5	31.2	550	0.25	1.0	9.1	125
1SMB5928B	12.35	13.0	13.65	7.0	28.8	550	0.25	1.0	9.9	115
1SMB5929B	14.25	15.0	15.75	9.0	25.0	600	0.25	1.0	11.4	100
1SMB5930B	15.20	16.0	16.80	10.0	23.4	600	0.25	1.0	12.2	93
1SMB5931B	17.10	18.0	18.90	12.0	20.8	650	0.25	1.0	13.7	83
1SMB5932B	19.00	20.0	21.00	14.0	18.7	650	0.25	1.0	15.2	75
1SMB5933B	20.90	22.0	23.10	17.5	17.0	650	0.25	1.0	16.7	68
1SMB5934B	22.80	24.0	25.20	19.0	15.6	700	0.25	1.0	18.2	62
1SMB5935B	25.65	27.0	28.35	23.0	13.9	700	0.25	1.0	20.5	55
1SMB5936B	28.50	30.0	31.50	28.0	12.5	750	0.25	1.0	22.8	50
1SMB5937B	31.35	33.0	34.65	33.0	11.4	800	0.25	1.0	25.1	45
1SMB5938B	34.20	36.0	37.80	38.0	10.4	850	0.25	1.0	27.4	41
1SMB5939B	37.05	39.0	40.95	45.0	9.6	900	0.25	1.0	29.6	38
1SMB5940B	40.85	43.0	45.15	53.0	8.7	950	0.25	1.0	32.7	34
1SMB5941B	44.65	47.0	49.35	67.0	8.0	1000	0.25	1.0	35.8	31
1SMB5942B	48.45	51.0	53.55	70.0	7.3	1100	0.25	1.0	38.8	29
1SMB5943B	53.20	56.0	58.80	86.0	6.7	1300	0.25	1.0	42.6	26
1SMB5944B	58.90	62.0	65.10	100	6.0	1500	0.25	1.0	47.1	24
1SMB5945B	64.60	68.0	71.40	120	5.5	1700	0.25	1.0	51.7	22
1SMB5946B	71.25	75.0	78.75	140	5.0	2000	0.25	1.0	56.0	20
1SMB5947B	77.90	82.0	86.10	160	4.6	2500	0.25	1.0	62.2	18
1SMB5948B	86.45	91.0	95.55	200	4.1	3000	0.25	1.0	69.2	16
1SMB5949B	95.00	100.0	105.0	250	3.7	3100	0.25	1.0	76.0	15
1SMB5950B	104.5	110.0	115.5	300	3.4	4000	0.25	1.0	83.6	13
1SMB5951B	114.0	120.0	126.0	380	3.1	4500	0.25	1.0	91.2	12
1SMB5952B	123.5	130.0	136.5	450	2.9	5000	0.25	1.0	98.8	11
1SMB5953B	142.5	150.0	157.5	600	2.5	6000	0.25	1.0	114.0	10
1SMB5954B	152.0	160.0	168.0	700	2.3	6500	0.25	1.0	121.6	9
1SMB5955B	171.0	180.0	189.0	900	2.1	7000	0.25	1.0	136.8	8
1SMB5956B	190.0	200.0	210.0	1200	1.9	8000	0.25	1.0	152.0	7

Note:

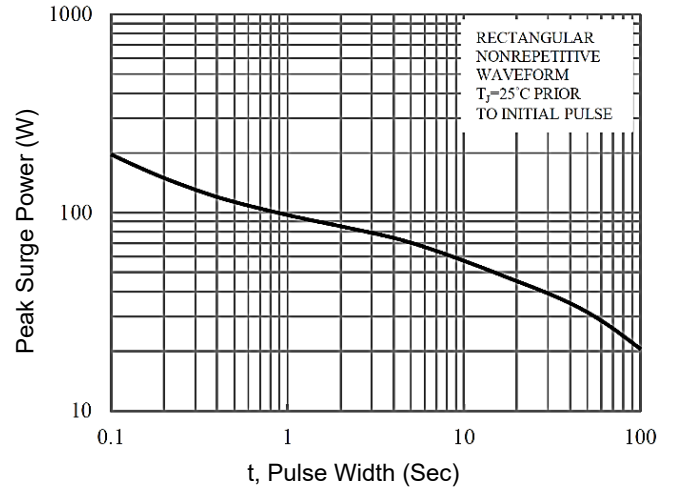
1. The type numbers listed have a standard tolerance on the nominal zener voltage of ±5%.
2. The reverse surge current is non-repetitive, 8.3ms pulse width square wave or equivalent sine-wave superimposed on I<sub>ZT</sub> per JEDEC method.

**CHARACTERISTIC CURVES**

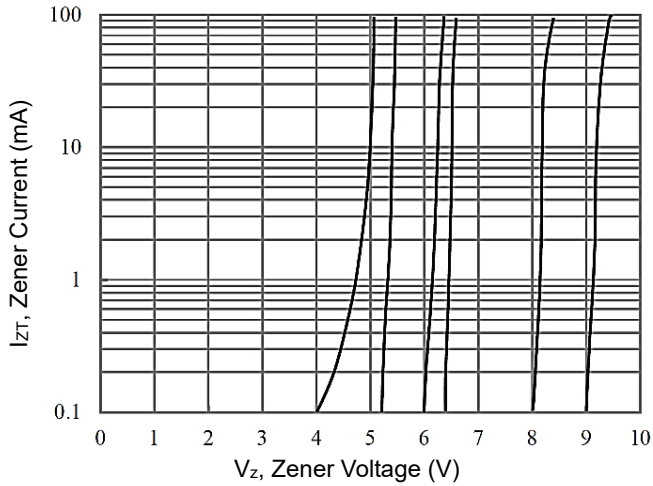
**Power Derating Curve**



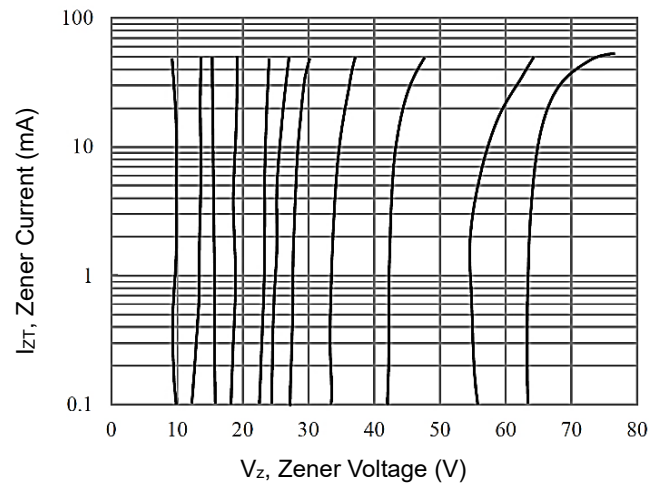
**Maximum Surge Power**



**Zener Breakdown Characteristic(5.1V thru 10V)**



**Zener Breakdown Characteristic(12V thru 68V)**



\*Specifications subject to change without notice.