

ZENER DIODES

FEATURES

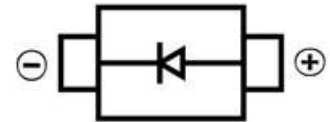
- 3W power dissipation
- Zener voltage from 3.3V~47V
- $\pm 5\%$ standard V_z tolerance
- Surface mount device



SMB

MECHANICAL DATA

- Case: SMB(DO-214AA)
- Case material: Molded plastic, UL flammability
- Classification rating: 94V-0
- Terminal: Tin plated, solderable per MIL-STD-750, method 2026
- Weight: 0.088 grams (approximate)



MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Power dissipation ($T_A=50^\circ\text{C}$, noted 1)	P_{tot}	3	W
Maximum forward voltage at $I_f=200\text{mA}$	V_F	1.2	V
Operating junction temperature	T_j	-50 ~ +150	$^\circ\text{C}$
Storage temperature	T_s	-50 ~ +175	$^\circ\text{C}$

1. Mounted on P.C. board with 50mm^2 copper pads at each terminal;
2. Tested with pulses;
3. Z2SMB1 is a diode operated in forward. Hence, the index of all parameters should be "F" instead of "Z". The cathode, indicated by a white band, has to be connected to the negative pole.

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ELECTRICAL CHARACTERISTICS (T =25°C unless otherwise specified)

Part Number	Device Marking Code	Nominal Zener Voltage @I _T			I _{ZT} (mA)	Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current
		V _{Z AVE.} (V)	V _{Z MIN.} (V)	V _{Z MAX.} (V)		Z _{ZT MAX.} (Ω) @I _{ZT}	Z _{ZK MAX.} (Ω) @I _{ZK}	I _{ZK} (mA)	I _R (uA)@V _R	V _R (V)	
1SMB5913B	913B	3.3	3.14	3.47	227.3	10.0	500.0	1.00	100.0	1.0	817.0
1SMB5914B	914B	3.6	3.42	3.78	208.3	9.0	500.0	1.00	100.0	1.0	749.0
1SMB5915B	915B	3.9	3.71	4.10	192.0	4.5	400.0	1.00	100.0	1.0	691.0
1SMB5916B	916B	4.3	4.09	4.52	174.0	4.5	400.0	1.00	50.0	1.0	627.0
1SMB5917B	917B	4.7	4.47	4.94	160.0	4.0	500.0	1.00	50.0	1.0	573.0
1SMB5918B	918B	5.1	4.85	5.36	147.0	3.5	550.0	1.00	10.0	1.0	528.0
1SMB5919B	919B	5.6	5.32	5.88	134.0	2.5	600.0	1.00	10.0	2.0	481.0
1SMB5920B	920B	6.2	5.89	6.51	121.0	1.5	700.0	1.00	10.0	3.0	435.0
1SMB5921B	921B	6.8	6.46	7.14	110.0	2.0	700.0	1.00	10.0	4.0	393.0
1SMB5922B	922B	7.5	7.13	7.88	100.0	2.0	700.0	0.50	10.0	5.0	360.0
1SMB5923B	923B	8.2	7.79	8.61	91.0	2.3	700.0	0.50	10.0	6.0	330.0
1SMB5924B	924B	9.1	8.65	9.56	82.0	2.5	700.0	0.50	10.0	7.0	297.0
1SMB5925B	925B	10.0	9.50	10.50	75.0	3.5	700.0	0.25	10.0	7.6	270.0
1SMB5926B	926B	11.0	10.45	11.55	68.0	4.0	700.0	0.25	0.5	8.4	225.0
1SMB5927B	927B	12.0	11.40	12.60	63.0	4.5	700.0	0.25	0.5	9.1	246.0
1SMB5928B	928B	13.0	12.35	13.65	58.0	4.5	700.0	0.25	0.5	9.9	208.0
1SMB5929B	929B	15.0	14.25	15.75	50.0	5.5	700.0	0.25	0.5	11.4	180.0
1SMB5930B	930B	16.0	15.20	16.80	47.0	5.5	700.0	0.25	0.5	12.2	169.0
1SMB5931B	931B	18.0	17.10	18.90	42.0	6.0	750.0	0.25	0.5	13.7	150.0
1SMB5932B	932B	20.0	19.00	21.00	37.0	7.0	750.0	0.25	0.5	15.2	135.0
1SMB5933B	933B	22.0	20.90	23.10	34.0	8.0	750.0	0.25	0.5	16.7	123.0
1SMB5934B	934B	24.0	22.80	25.20	31.0	9.0	750.0	0.25	0.5	18.2	112.0
1SMB5935B	935B	27.0	25.65	28.35	28.0	10.0	750.0	0.25	0.5	20.6	100.0
1SMB5936B	936B	30.0	28.50	31.50	25.0	16.0	1000.0	0.25	0.5	22.5	90.0
1SMB5937B	937B	33.0	31.35	34.65	23.0	20.0	1000.0	0.25	0.5	25.1	82.0
1SMB5938B	938B	36.0	34.20	37.80	21.0	22.0	1000.0	0.25	0.5	27.4	75.0
1SMB5939B	939B	39.0	37.05	40.95	19.0	28.0	1000.0	0.25	0.5	29.7	69.0
1SMB5940B	940B	43.0	40.85	45.15	17.0	33.0	1500.0	0.25	0.5	32.7	63.0
1SMB5941B	941B	47.0	44.65	49.35	16.0	38.0	1500.0	0.25	0.5	35.6	57.0

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TYPICAL CHARACTERISTICS

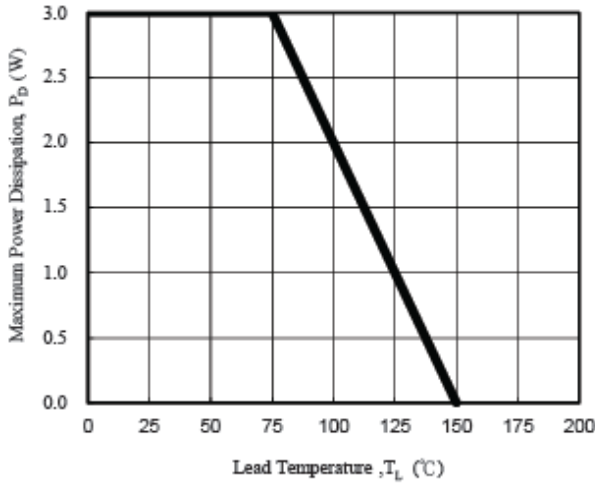


Fig. 1 - Power Temperature Derating Curve

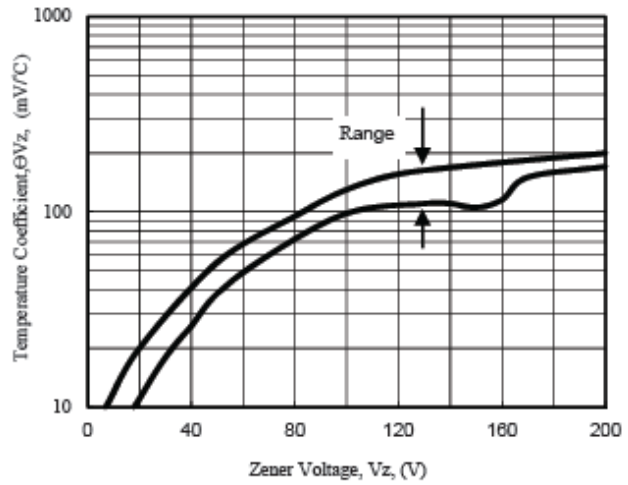


Fig. 2 - Temperature Coefficients v.s. Zener Voltage

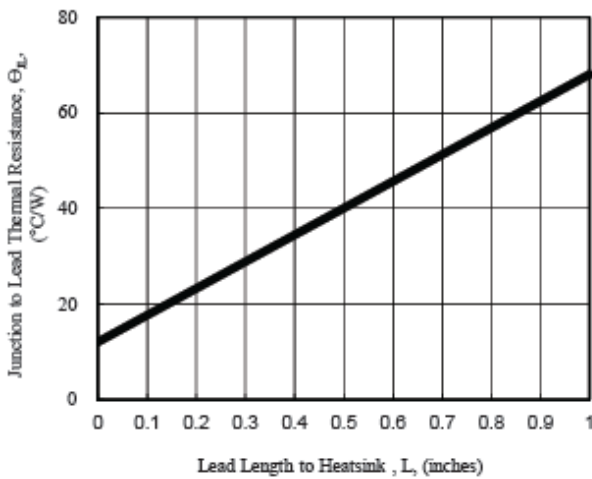


Fig. 3 - Typical Thermal Resistance v.s. Lead Length

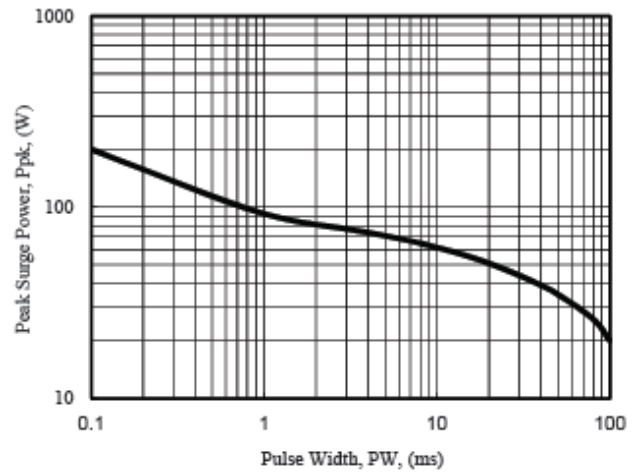


Fig. 4 - Maximum Surge Power

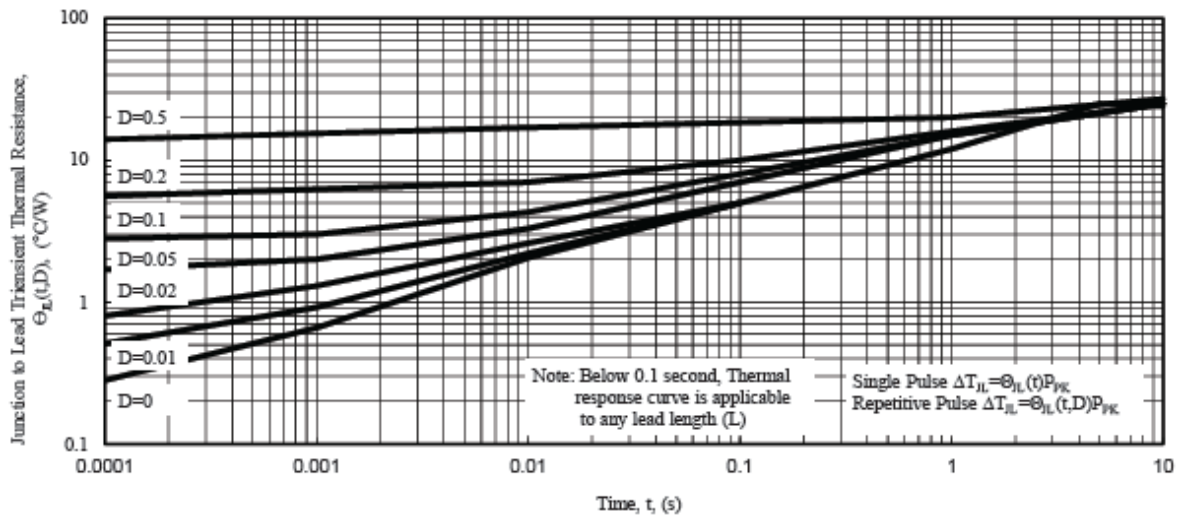
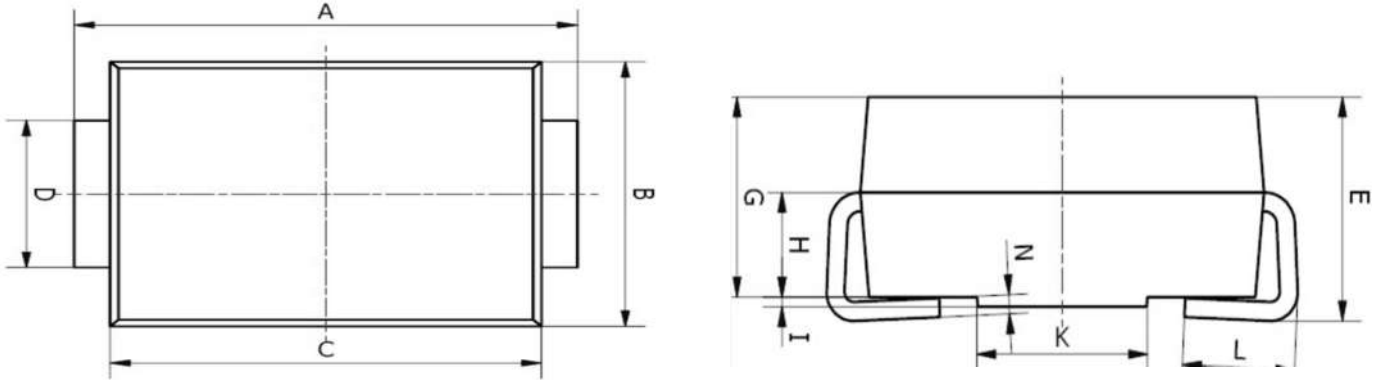


Fig. 5 - Typical Thermal Response L, Lead Length=3/8inch

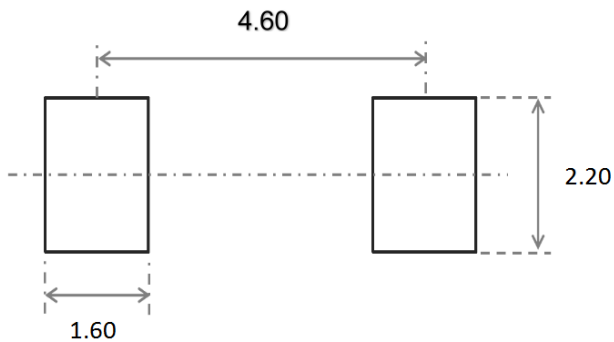
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SMB Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	5.00	5.45	0.197	0.215
B	3.20	4.00	0.126	0.157
C	4.30	4.70	0.169	0.185
D	1.80	2.20	0.071	0.087
E	2.20	2.50	0.087	0.098
G	1.90	2.30	0.075	0.090
H	0.95	1.25	0.037	0.049
I	0.05	0.15	0.002	0.006
K	1.70	2.10	0.067	0.083
L	0.90	1.60	0.035	0.063
N	0.10	0.30	0.004	0.012

SMB Suggested Pad Layout



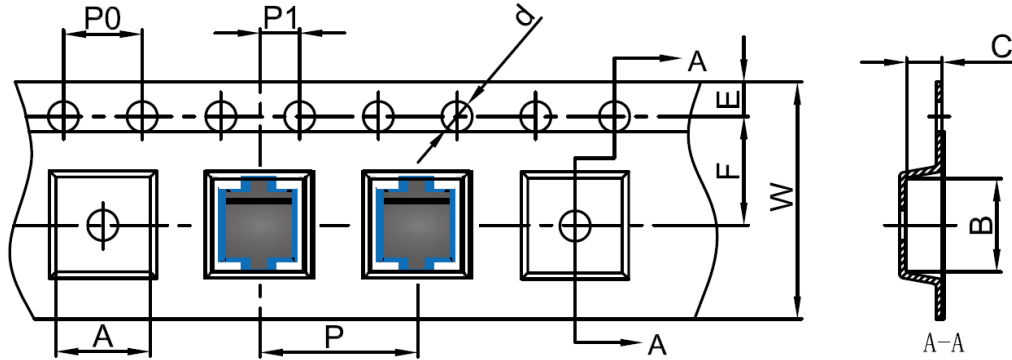
Note:

1. Controlling dimension: in millimeters
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

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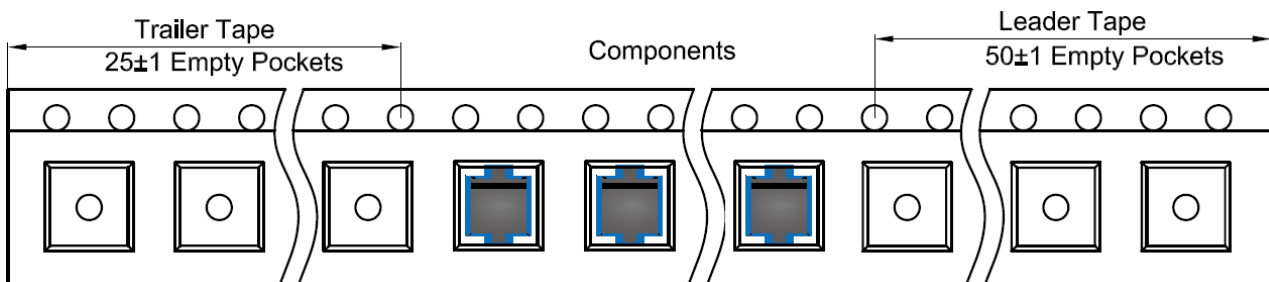
SMB Tape and Reel

SMB Embossed Carrier Tape

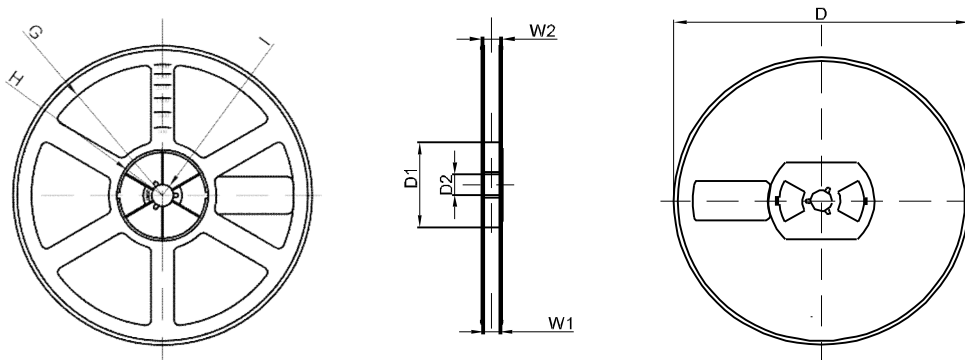


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SMB	4.10	5.50	2.58	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SMB Tape Leader and Trailer



SMB Reel



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
13" DIA	Ø330	75.0	13.00	R165	R37.50	R6.50	12.40	17.60
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1