

SMBK Plastic-Encapsulate Diodes

Zener Diodes

Features

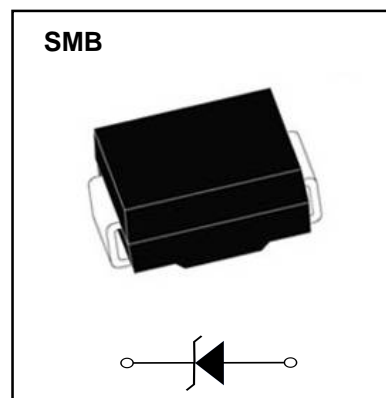
- P_d 1.5W
- V_z 3.3V-200V

Applications

- Stabilizing Voltage

Marking

- 1SMB59XXA
XX : From 13 To 56



Limiting Values (Absolute Maximum Rating)

Item	Symbol	Unit	Conditions	Max
Power dissipation	P_d	W	$T_L=75^\circ\text{C}$	1.5
Zener current	I_z	mA		P_v / V_z
Maximum junction temperature	T_j	$^\circ\text{C}$		150
Storage temperature range	T_{stg}	$^\circ\text{C}$		-65 to +150

Electrical Characteristics ($T_a=25^\circ\text{C}$ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Max
Thermal resistance	$R_{\theta JL}$	$^\circ\text{C}/\text{W}$	Between junction and lead	170
Forward voltage	V_F	V	$I_F=200\text{mA}$	1.5

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

Part Number	Device Marking Code	Nominal Zener Voltage		Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current
		$V_Z @ I_{ZT}$	I_{ZT}	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	I_{ZK}	$I_R @ V_R$		I_{ZM}
		(V)	(mA)	(Ω)	(Ω)	(mA)	(μA)	(V)	(mA)
1SMB5913A	13A	3.3	113.6	10.0	500	1.00	100.0	1.0	454
1SMB5914A	14A	3.6	104.2	9.0	500	1.00	75.0	1.0	416
1SMB5915A	15A	3.9	96.1	7.5	500	1.00	25.0	1.0	384
1SMB5916A	16A	4.3	87.2	6.0	500	1.00	5.0	1.0	348
1SMB5917A	17A	4.7	79.8	5.0	500	1.00	5.0	1.5	319
1SMB5918A	18A	5.1	73.5	4.0	350	1.00	5.0	2.0	294
1SMB5919A	19A	5.6	66.9	2.0	250	1.00	5.0	3.0	267
1SMB5920A	20A	6.2	60.5	2.0	200	1.00	2.5	4.0	240
1SMB5921A	21A	6.8	55.1	2.5	200	1.00	2.5	5.2	220
1SMB5922A	22A	7.5	50.0	3.0	400	0.50	2.5	6.0	200
1SMB5923A	23A	8.2	45.7	3.5	400	0.50	2.5	6.5	182
1SMB5924A	24A	9.1	41.2	4.0	500	0.50	2.5	7.0	164
1SMB5925A	25A	10.0	37.5	4.5	500	0.25	2.5	8.0	150
1SMB5926A	26A	11.0	34.1	5.5	550	0.25	0.5	8.4	136
1SMB5927A	27A	12.0	31.2	6.5	550	0.25	0.5	9.1	125
1SMB5928A	28A	13.0	28.8	7.0	550	0.25	0.5	9.9	115
1SMB5929A	29A	15.0	25.0	9.0	600	0.25	0.5	11.4	100
1SMB5930A	30A	16.0	23.4	10.0	600	0.25	0.5	12.2	93
1SMB5931A	31A	18.0	20.8	12.0	650	0.25	0.5	13.7	83
1SMB5932A	32A	20.0	18.7	14.0	650	0.25	0.5	15.2	75
1SMB5933A	33A	22.0	17.0	17.5	650	0.25	0.5	16.7	68
1SMB5934A	34A	24.0	15.6	19.0	700	0.25	0.5	18.2	62
1SMB5935A	35A	27.0	13.9	23.0	700	0.25	0.5	20.6	55
1SMB5936A	36A	30.0	12.5	26.0	750	0.25	0.5	22.8	50
1SMB5937A	37A	33.0	11.4	33.0	800	0.25	0.5	25.1	45
1SMB5938A	38A	36.0	10.4	38.0	850	0.25	0.5	27.4	41
1SMB5939A	39A	39.0	9.6	45.0	900	0.25	0.5	29.7	38
1SMB5940A	40A	43.0	8.7	53.0	950	0.25	0.5	32.7	34
1SMB5941A	41A	47.0	8.0	67.0	1000	0.25	0.5	35.8	31
1SMB5942A	42A	51.0	7.3	70.0	1100	0.25	0.5	38.8	29
1SMB5943A	43A	56.0	6.7	86.0	1300	0.25	0.5	42.6	26
1SMB5944A	44A	62.0	6.0	100.0	1500	0.25	0.5	47.1	24
1SMB5945A	45A	68.0	5.5	120.0	1700	0.25	0.5	51.7	22
1SMB5946A	46A	75.0	5.0	140.0	2000	0.25	0.5	56.0	20
1SMB5947A	47A	82.0	4.6	160.0	2500	0.25	0.5	62.2	18
1SMB5948A	48A	91.0	4.1	200.0	3000	0.25	0.5	69.2	16
1SMB5949A	49A	100.0	3.7	250.0	3100	0.25	0.5	76.0	15
1SMB5950A	50A	110.0	3.4	300.0	4000	0.25	0.5	83.6	13
1SMB5951A	51A	120.0	3.1	380.0	4500	0.25	0.5	91.2	12
1SMB5952A	52A	130.0	2.9	450.0	5000	0.25	0.5	98.8	11
1SMB5953A	53A	150.0	2.5	600.0	6000	0.25	0.5	114.0	10
1SMB5954A	54A	160.0	2.3	700.0	6500	0.25	0.5	121.6	9
1SMB5955A	55A	180.0	2.1	900.0	7000	0.25	0.5	136.8	8
1SMB5956A	56A	200.0	1.9	1200.0	8000	0.25	0.5	152.0	7

Notes :

- (1) The type number listed have a standard tolerance on the nominal zener voltage of $\pm 5\%$
- (2) The reverse surge current is a non-repetitive, 8.3ms pulse width square wave or equivalent sine-wave superimposed on I_{ZT} per method.

Typical Characteristics

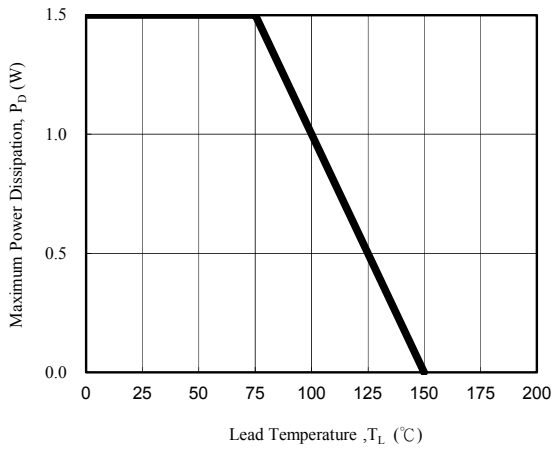


Fig. 1 - Power Temperature Derating Curve

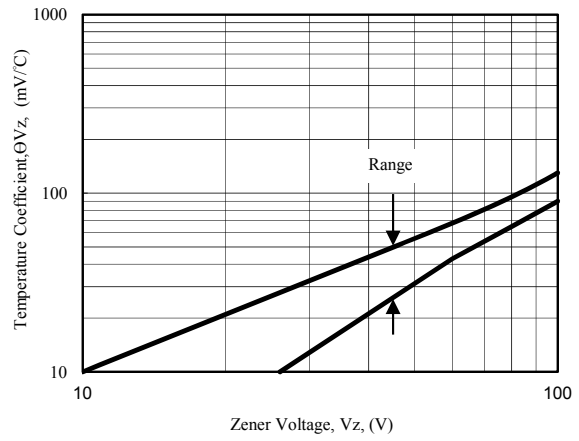


Fig. 2 - Temperature Coefficients v.s. Zener Voltage

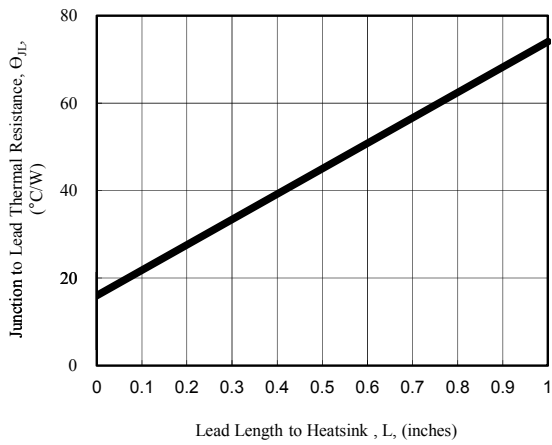


Fig. 3 - Typical Thermal Resistance v.s. Lead Length

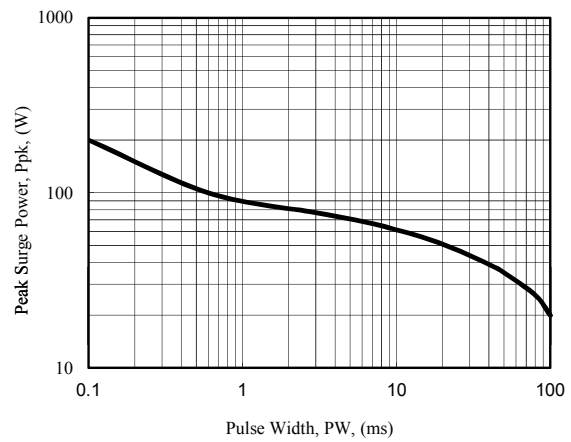


Fig. 4 - Maximum Surge Power

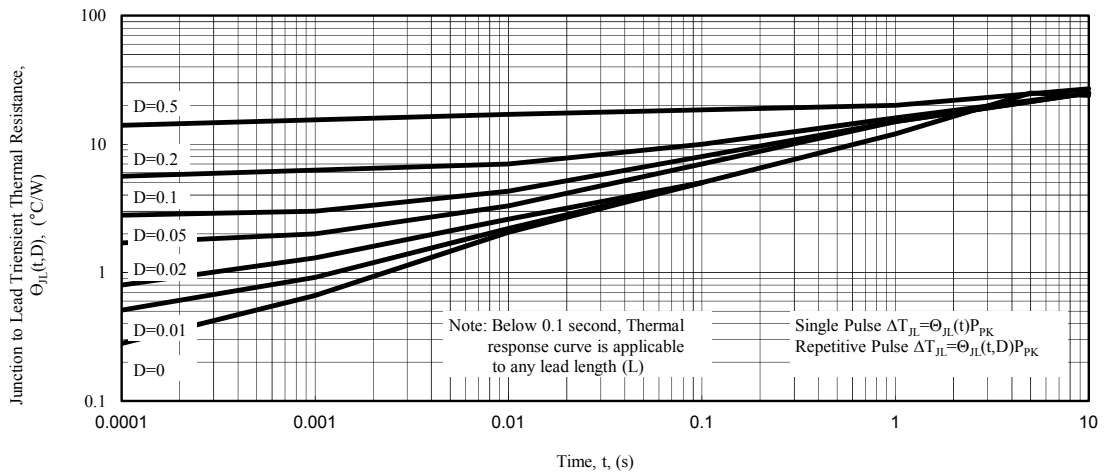
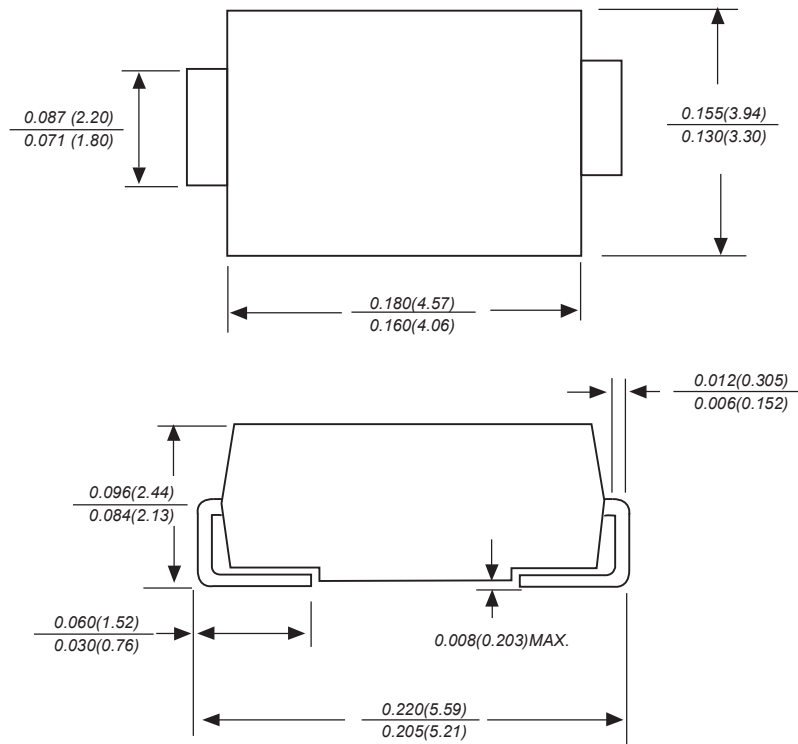


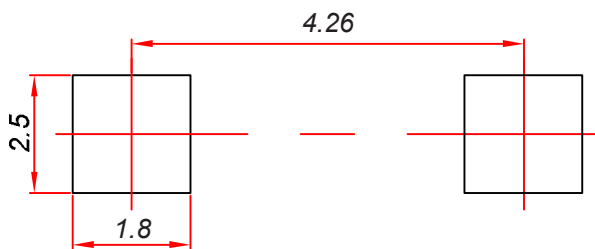
Fig. 5 - Typical Thermal Response L, Lead Length=3/8inch

SMB Package Outline Dimensions



Dimensions in inches and (millimeters)

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.

NOTICE

JSHD reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JSHD does not assume any liability arising out of the application or use of any product described herein.

Reel Taping Specifications For Surface Mount Devices-SMB

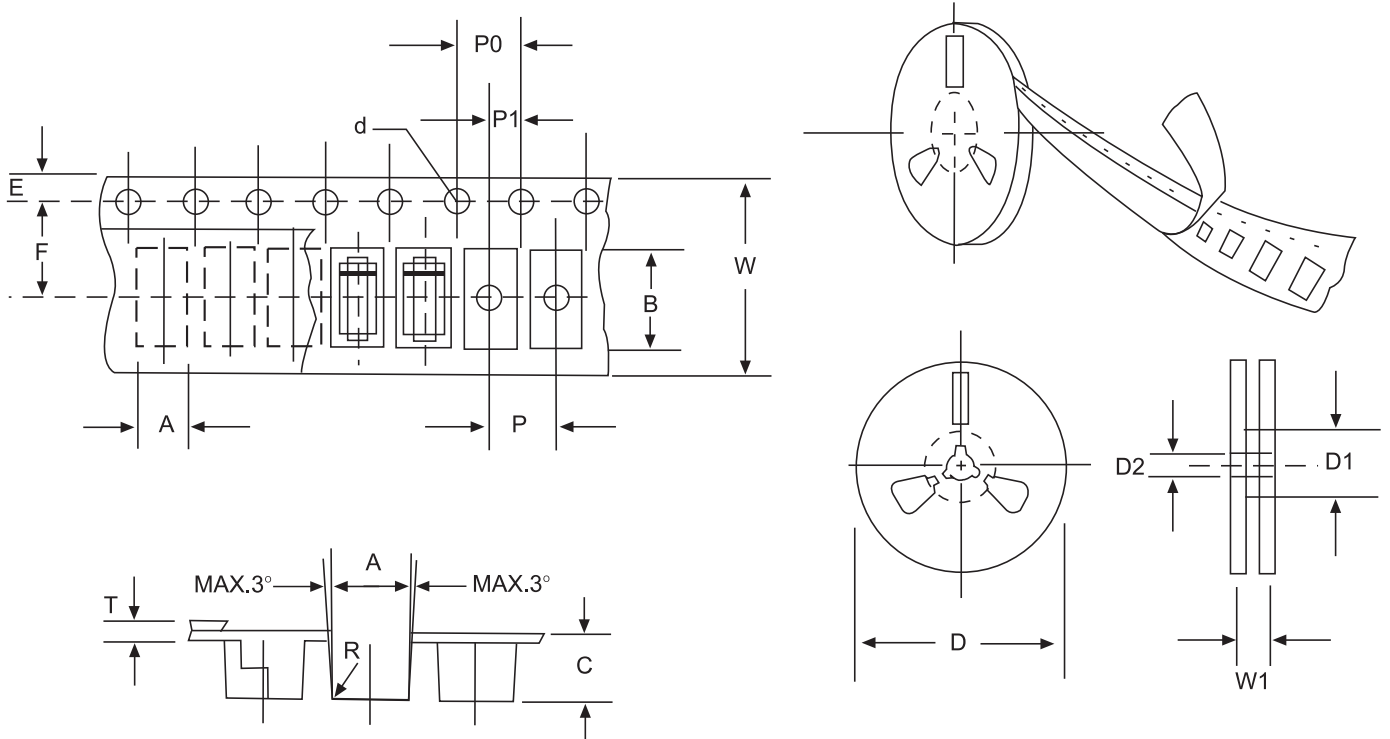


FIG:CONFIGURATION OF AXIAL TAPING

ITEM	SYMBOL	SMB mm(inch)
Carrier width	A	4.09±0.1(0.161±0.004)
Carrier length	B	5.82±0.1(0.229±0.004)
Carrier depth	C	3.33±0.1(0.131±0.004)
Sprocket hole	d	1.55±0.05(0.061±0.0002)
Reel outside diameter	D	330/178±2.0(13/7.0±0.79)
Reel inner diameter	D1	8.0±0.2(0.315±0.008)
Feed hole diameter	D2	13±0.5(0.512±0.020)
Sprocket hole position	E	1.75±0.1(0.069±0.004)
Punch hole position	F	5.65±0.05(0.222±0.002)
Punch hole pitch	P	8.0±0.1(0.315±0.004)
Sprocket hole pitch	P0	4.0±0.1(0.157±0.004)
Embossment center	P1	2.0±0.1(0.079±0.004)
Total tape thickness	T	0.32±0.1(0.013±0.004)
Tape width	W	12.0±0.2(0.472±0.008)
Reel width	W1	16.8±2.0(0.661±0.079)

NOTE:Devices are packde in accordance with EIA standard RS-481-A and specification given above.