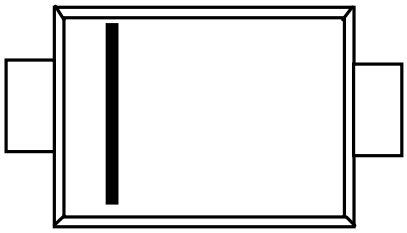
1SMB59 Series

3W SURFACE MOUNT ZENER DIODES

»Features

- Low profile package.
- Low Zener impedance.
- High reliability chips
- Halogen free and RoHS compliant
- Lead-free finish



SMB(DO-214AA)

»General Description

- CASE: SMB(DO-214AA) Molded Plastic
- Mounting Position: Any
- Polarity: cathodeby color band
- Terminal: Solder plated

» Maximum Ratings @T_A=25℃ unless otherwise noted

Parameter	Symbol	Value	Units
Power Dissipation @TL=75°C	PD	3	W
Thermal Resistance Junction To Ambient Air	RθJA	100	°C/W
Thermal Resistance Junction To Leads	RθJL	25	°C/W
Storage Temperature Range	TSTG	-55 to 150	°C
Max Forward Voltage @IF=200MA	VF	1.2	V
Operating Junction Temperature Range	TJ	-55 to 150	°C

»Electrical Characteristics @T_A=25℃ unless otherwise noted

Part Number	Zener voltage		Test current	Dynamic impedance	Knee current	Knee impedance	Reverse current	Reverse voltage	Max. DC current
	VZ /V		IZT	ZZT	IZK	ZZK	IR(Max.)	VR	IZM
	Vz(MIN)	Vz(MAX)	m A	Ω	m A	Ω	μAdc	V	m A
1SMB5913B	3.135	3.465	113.6	10	1	500	100	1	454
1SMB5914B	3.42	3.78	104.2	9	1	500	75	1	416
1SMB5915B	3.705	4.095	96.1	7.5	1	500	25	1	384
1SMB5916B	4.085	4.515	87.2	6	1	500	5	1	348
1SMB5917B	4.465	4.935	79.8	5	1	500	5	1.5	319
1SMB5918B	4.845	5.355	73.5	4	1	350	5	2	294
1SMB5919B	5.32	5.88	66.9	2	1	250	5	3	267
1SMB5920B	5.89	6.51	60.5	2	1	200	5	4	241
1SMB5921B	6.46	7.14	55.1	2.5	1	200	5	5.2	220
1SMB5922B	7.125	7.875	50	3	0.5	400	5	6	200
1SMB5923B	7.79	8.61	45.7	3.5	0.5	400	5	6.5	182
1SMB5924B	8.645	9.555	41.2	4	0.5	500	5	7	164
1SMB5925B	9.5	10.5	37.5	4.5	0.25	500	5	8	150
1SMB5926B	10.45	11.55	34.1	5.5	0.25	550	1	8.4	136
1SMB5927B	11.4	12.6	31.2	6.5	0.25	550	1	9.1	125
1SMB5928B	12.35	13.65	28.8	7	0.25	550	1	9.9	115
1SMB5929B	14.25	15.75	25	9	0.25	600	1	11.4	100
1SMB5930B	15.2	16.8	23.4	10	0.25	600	1	12.2	93
1SMB5931B	17.1	18.9	20.8	12	0.25	650	1	13.7	83
1SMB5932B	19	21	18.7	14	0.25	650	1	15.2	75
1SMB5933B	20.9	23.1	17	17.5	0.25	650	1	16.7	68
1SMB5934B	22.8	25.2	15.6	19	0.25	700	1	18.2	62
1SMB5935B	25.65	28.35	13.9	23	0.25	700	1	20.6	55
1SMB5936B	28.5	31.5	12.5	28	0.25	750	1	22.8	50
1SMB5937B	31.35	34.65	11.4	33	0.25	800	1	25.1	45
1SMB5938B	34.2	37.8	10.4	38	0.25	850	1	27.4	41
1SMB5939B	37.05	40.95	9.6	45	0.25	900	1	29.7	38
1SMB5940B	40.85	45.15	8.7	53	0.25	950	1	32.7	34
1SMB5941B	44.65	49.35	8	67	0.25	1000	1	35.8	31
1SMB5942B	48.45	53.55	7.3	70	0.25	1100	1	38.8	29
1SMB5943B	53.2	58.8	6.7	86	0.25	1300	1	42.6	26
1SMB5944B	58.9	65.1	6	100	0.25	1500	1	47.1	24

»Electrical Characteristics @T_A=25℃ unless otherwise noted

Part Number	Zener voltage		Test current	Dynamic impedance	Knee current	Knee impedance	Reverse current	Reverse voltage	Max. DC current
	VZ /V		IZT	ZZT	IZK	ZZK	IR(Max.)	VR	IZM
	Vz(MIN)	Vz(MAX)	m A	Ω	m A	Ω	μAdc	V	m A
1SMB5945B	64.6	71.4	5.5	120	0.25	1700	1	51.7	22
1SMB5946B	71.25	78.8	5	140	0.25	2000	1	56	20
1SMB5947B	77.9	86.1	4.6	160	0.25	2500	1	62.2	18
1SMB5948B	86.45	95.6	4.1	200	0.25	3000	1	69.2	16
1SMB5949B	95	105	3.7	250	0.25	3100	1	76	15
1SMB5950B	104.5	115.5	3.4	300	0.25	4000	1	83.6	13
1SMB5951B	114	126	3.1	380	0.25	4500	1	91.2	12
1SMB5952B	123.5	136.5	2.9	450	0.25	5000	1	98.8	11
1SMB5953B	142.5	157.5	2.5	600	0.25	6000	1	114	10
1SMB5954B	152	168	2.3	700	0.25	6500	1	121.6	9
1SMB5955B	171	189	2.1	900	0.25	7000	1	136.8	8
1SMB5956B	190	210	1.9	1200	0.25	8000	1	152	7

»Typical Performance Characteristics ((TJ = 25 °C, unless otherwise noted))

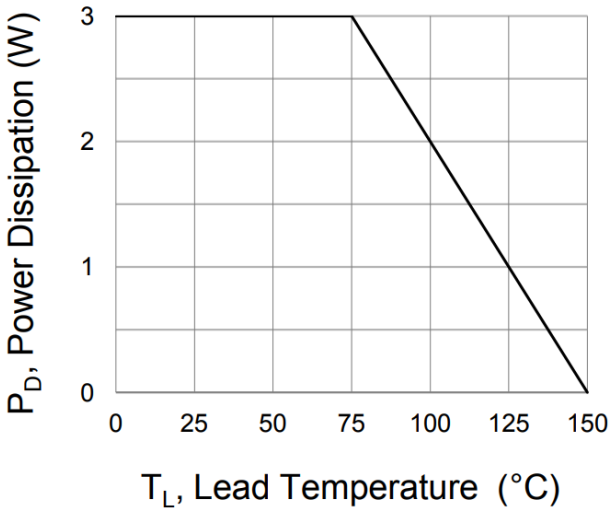


Figure 1 Steady State Power Derating

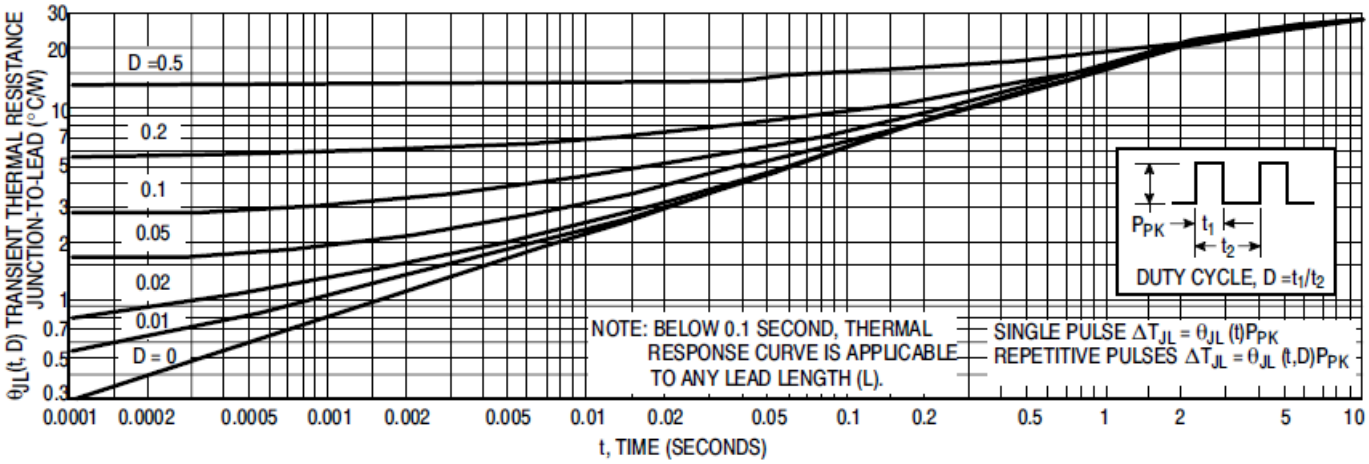


Figure 2. Typical Thermal Response L, Lead Length = 3/8 Inch

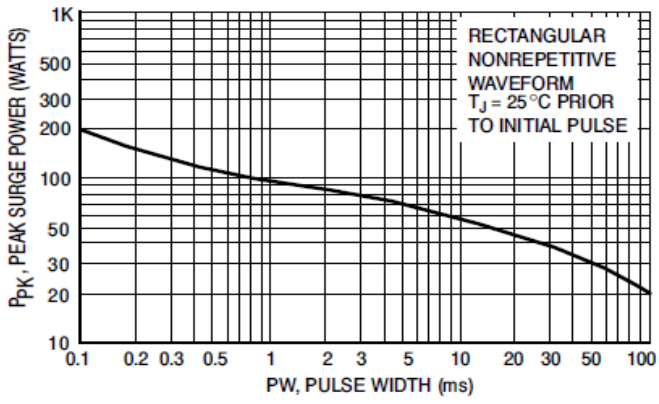


Figure 3. Maximum Surge Power

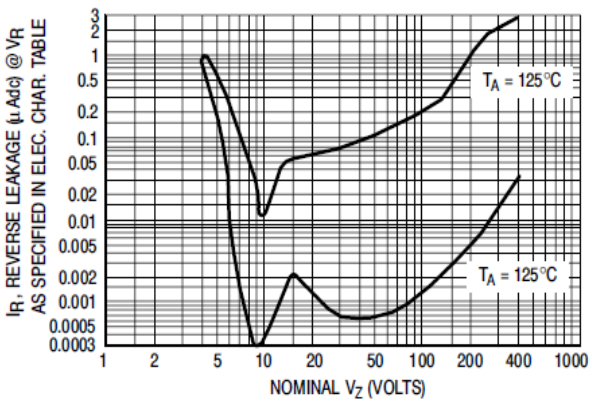
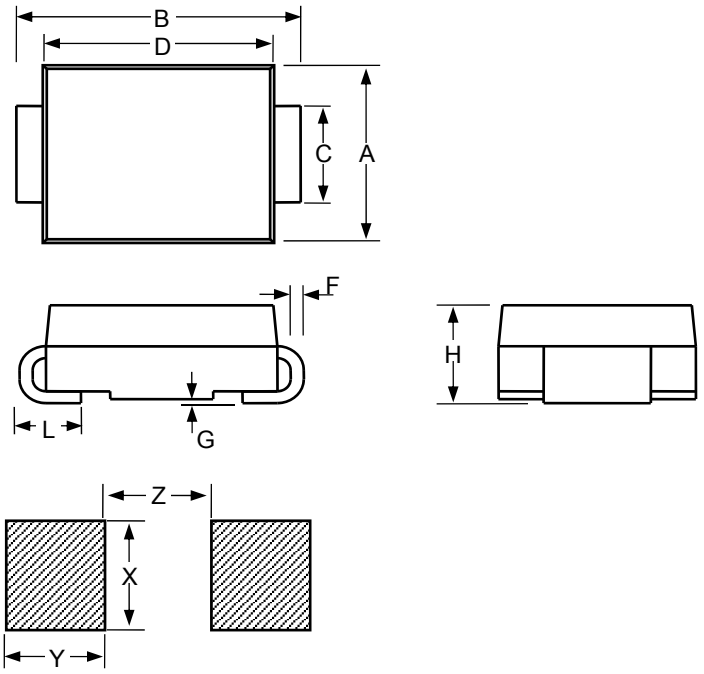


Figure 4. Typical Reverse Leakage

»Package Information

SMB



SMB						
Dimension	Inches			Millimeters		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.134	0.144	0.155	3.4	3.67	3.94
B	0.205	0.213	0.22	5.21	5.4	5.59
C	0.075	0.079	0.083	1.9	2	2.1
D	0.169		0.185	4.3		4.7
F	0.006		0.012	0.152		0.305
G	-		0.008	-		0.203
H	0.085	0.091	0.096	2.15	2.3	2.45
L	0.03		0.06	0.76		1.52
X		0.11			2.8	
Y		0.079			2	
Z		0.079			2	