



DESCRIPTION

The 1SMB5913 ~ 1SMB5956 are available in SMB Package

FEATURES

- Total Power Dissipation: Max. 3 W.
- Wide zener reverse voltage range 3.3V to 200V.
- Small plastic package suitable for surface mounted design.

ORDERING INFORMATION

Package Type	Part Number	
SMB	1SMB5913	1SMB5935
	1SMB5914	1SMB5936
	1SMB5915	1SMB5937
	1SMB5916	1SMB5938
	1SMB5917	1SMB5939
	1SMB5918	1SMB5940
	1SMB5919	1SMB5941
	1SMB5920	1SMB5942
	1SMB5921	1SMB5943
	1SMB5922	1SMB5944
	1SMB5923	1SMB5945
	1SMB5924	1SMB5946
	1SMB5925	1SMB5947
	1SMB5926	1SMB5948
	1SMB5927	1SMB5949
	1SMB5928	1SMB5950
	1SMB5929	1SMB5951
	1SMB5930	1SMB5952
	1SMB5931	1SMB5953
	1SMB5932	1SMB5954
1SMB5933	1SMB5955	
1SMB5934	1SMB5956	
Note	3,000pcs/Reel	
AiT provides all RoHS Compliant Products		

MECHANICAL DATA

Case: SMB

Terminals: Solderable per MIL-STD-750,
Method 2026

Approx. Weight: 95mg/0.0034oz

PIN DESCRIPTION



SMB Package



PIN#	DESCRIPTION
1	CATHODE
2	ANODE



ABSOLUTE MAXIMUM RATINGS

T_A=25°C unless otherwise specified

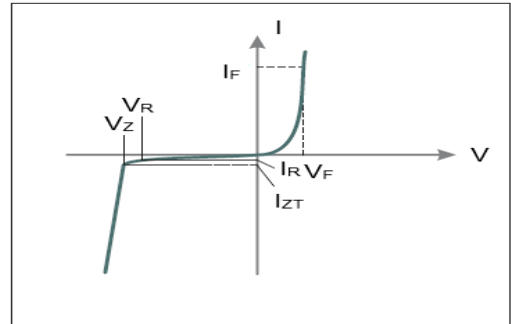
PD, Maximum Steady State Power Dissipation @T _L =75°C Measure at zero lead length* Derate above 75°C	3.0 40	W mW/°C
RθJL, Thermal Resistance from Junction-to-Lead	25	°C /W
PD, Maximum Steady State Power Dissipation @T _A =25°C Measure at zero lead length* Derate above 25°C	550 4.4	mW mW/°C
RθJA, Thermal Resistance from Junction-to-Ambient	226	°C /W
T _J , Junction Temperature	-55°C ~ 150	°C
T _{STG} , Storage Temperature Range	-55°C ~ 150	°C

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

*Mounted on Cu-Pad size 5mm x 5mm on PCB.

T_A=25°C unless otherwise specified

Parameter	Symbol	Conditions
Reverse Zener Voltage	V _Z	@ I _{ZT}
Reverse Current	I _{ZT}	
Maximum Zener Impedance	Z _{ZT}	@ I _{ZT}
Reverse Current	I _{ZK}	
Maximum Zener Impedance	Z _{ZK}	@ I _{ZK}
Reverse Leakage Current	I _R	@ V _R
Reverse Voltage	V _R	
Forward Current	I _F	
Forward Voltage	V _F	@ I _F
Maximum DC Zener Current	I _{ZM}	



Zener Voltage Regulator

TYPICAL PERFORMANCE CHARACTERISTICS

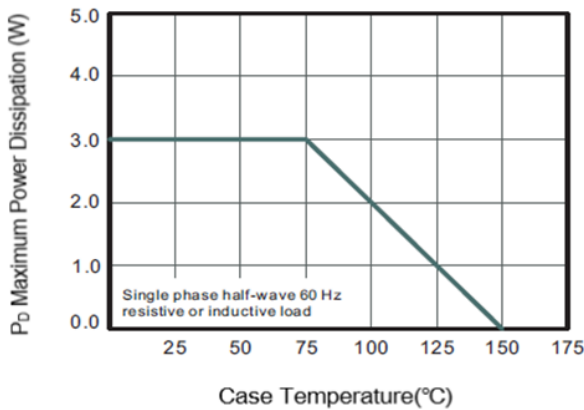


Fig1 Forward Current Derating Curve

**ELECTRICAL CHARACTERISTICS**

$T_A = 25^\circ\text{C}$, $T_L = 30^\circ\text{C}$ unless otherwise noted, $V_F = 1.5\text{ V Max.}$ @ $I_F = 200\text{ mA (DC)}$ for all types

Part Number	Zener Voltage ⁽²⁾			Zener Impedance ⁽³⁾			Leakage Current		Maximum DC Zener Current	
	V _Z			I _{ZT}	Z _{ZT} @ I _{ZT}	Z _{ZK} @ I _{ZK}	I _R @ V _R			
	Min	Nom ⁽¹⁾	Max	mA	Ω	Ω	mA	μA	Volts	I _{ZM} (mA)(DC)
1SMB5913	3.13	3.3	3.47	113.6	10	500	1	100	1	454
1SMB5914	3.42	3.6	3.78	104.2	9	500	1	75	1	416
1SMB5915	3.70	3.9	4.10	96.1	7.5	500	1	25	1	384
1SMB5916	4.08	4.3	4.52	87.2	6	500	1	5	1	348
1SMB5917	4.46	4.7	4.94	79.8	5	500	1	5	1.5	319
1SMB5918	4.54	5.1	5.36	73.5	4	350	1	5	2	294
1SMB5919	5.32	5.6	5.88	66.9	2	250	1	5	3	267
1SMB5920	5.89	6.2	6.51	60.5	2	200	1	5	4	241
1SMB5921	6.46	6.8	7.14	55.1	2.5	200	1	5	5.2	220
1SMB5922	7.12	7.5	7.88	50.0	3	400	0.5	5	6	200
1SMB5923	7.79	8.2	8.61	45.7	3.5	400	0.5	5	6.5	182
1SMB5924	8.64	9.1	9.56	41.2	4	500	0.5	5	7	164
1SMB5925	9.50	10	10.50	37.5	4.5	500	0.25	5	8	150
1SMB5926	10.45	11	11.55	34.1	5.5	550	0.25	1	8.4	136
1SMB5927	11.40	12	12.60	31.2	6.5	550	0.25	1	9.1	125
1SMB5928	12.35	13	13.65	28.8	7	550	0.25	1	9.9	115
1SMB5929	14.25	15	15.75	25.0	9	600	0.25	1	11.4	100
1SMB5930	15.20	16	16.80	23.4	10	600	0.25	1	12.2	93
1SMB5931	17.10	18	18.90	20.8	12	650	0.25	1	13.7	83
1SMB5932	19.00	20	21.00	18.7	14	650	0.25	1	15.2	75
1SMB5933	20.90	22	23.10	17.0	17.5	650	0.25	1	16.8	68
1SMB5934	22.80	24	25.2	15.6	19	700	0.25	1	18.2	62
1SMB5935	25.65	27	28.35	13.9	23	700	0.25	1	20.6	55

(1) Tolerance and Nom number designation the type numbers listed indicate a tolerance of 5%

(2) Zener Voltage (V_Z) measurement Nominal Zener voltage is measured with the device junction in thermal equilibrium with ambient temperature 25°C

(3) Zener Impedance derivation : Z_{ZT} and Z_{ZK} are measured by dividing the AC voltage drop across the device by the AC current applied. The specified limits are for I_{Z(AC)} = 0.1 I_{Z(DC)} with the AC frequency = 60 Hz



T_A = 25°C, T_L = 30°C unless otherwise noted, V_F = 1.5 V Max. @ I_F = 200 mA (DC) for all types

Part Number	Zener Voltage ⁽²⁾			Zener Impedance ⁽³⁾			Leakage Current		Maximum DC Zener Current	
	V _Z			I _{ZT}	Z _{ZT} @ I _{ZT}	Z _{ZK} @ I _{ZK}		I _R @ V _R		
	Min	Nom ⁽¹⁾	Max	mA	Ω	Ω	mA	μA	Volts	I _{ZM} (mA)(DC)
1SMB5936	28.50	30	31.50	12.5	28	750	0.25	1	22.8	50
1SMB5937	31.35	33	34.65	11.4	33	800	0.25	1	25.1	45
1SMB5938	34.20	36	37.80	10.4	38	850	0.25	1	27.4	41
1SMB5939	37.05	39	40.95	9.6	45	900	0.25	1	29.7	38
1SMB5940	40.85	43	45.15	8.7	53	950	0.25	1	32.7	34
1SMB5941	44.65	47	49.35	8.0	67	1000	0.25	1	35.8	31
1SMB5942	48.45	51	53.55	7.3	40	1100	0.25	1	38.8	29
1SMB5943	53.20	56	58.80	6.7	86	1300	0.25	1	42.6	26
1SMB5944	58.90	62	65.10	6.0	100	1500	0.25	1	47.1	24
1SMB5945	64.60	68	71.40	5.5	120	1700	0.25	1	51.7	22
1SMB5946	71.25	75	78.75	5.0	140	2000	0.25	1	56	20
1SMB5947	77.90	82	86.10	4.6	160	2500	0.25	1	62.2	18
1SMB5948	86.45	91	95.55	4.1	200	3000	0.25	1	69.2	16
1SMB5949	95.00	100	105	3.7	250	3100	0.25	1	76	15
1SMB5950	104.5	110	115.5	3.4	300	4000	0.25	1	83.6	13
1SMB5951	114.0	120	126	3.1	380	4500	0.25	1	91.2	12
1SMB5952	123.5	130	136.5	2.9	450	5000	0.25	1	98.8	11
1SMB5953	142.5	150	157.5	2.5	600	6000	0.25	1	114	10
1SMB5954	152.0	160	168	2.3	700	6500	0.25	1	121.6	9
1SMB5955	171.0	180	189	2.1	900	7000	0.25	1	136.8	8
1SMB5956	190.0	200	210	1.9	1200	8000	0.25	1	152	7

(1) Tolerance and Nom number designation the type numbers listed indicate a tolerance of 5%

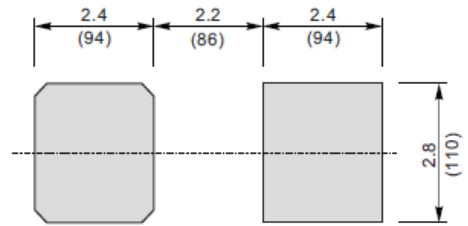
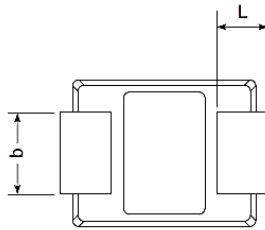
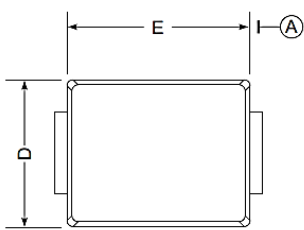
(2) Zener voltage (V_Z) measurement Nominal Zener voltage is measured with the device junction in thermal equilibrium with ambient temperature 25°C

(3) Zener impedance (Z_Z) derivation : Z_{ZT} and Z_{ZK} are measured by dividing the AC voltage drop across the device by the AC current applied. The specified limits are for I_Z(AC) = 0.1 I_Z(DC) with the AC frequency = 60 Hz



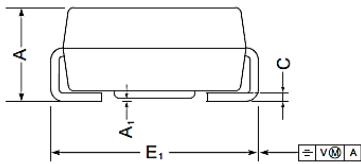
PACKAGE INFORMATION

Dimension in SMB Package (Unit: mm)



Unit : $\frac{\text{mm}}{\text{(mil)}}$

The recommended mounting pad size



UNIT	MIN	MAX
A	2.13	2.44
E	4.06	4.70
D	3.3	3.94
E1	5.08	5.59
A1	0.05	0.20
L	0.8	1.5
C	0.152	0.305
b	1.9	2.2



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