

1SMB5914~1SMB5949

SURFACE MOUNT SILICON ZENER DIODE

VOLTAGE

3.6 to 100 Volts

POWER

1.5 Watts

SMB/DO-214AA

Unit: inch (mm)

FEATURES

- For surface mounted applications in order to optimize board space.
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- Typical I_R less than 1.0 μ A above 12V
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- High temperature soldering : 260°C /10 seconds at terminals
- Pb free product are available : 99% Sn above can meet RoHS environment substance request

MECHANICAL DATA

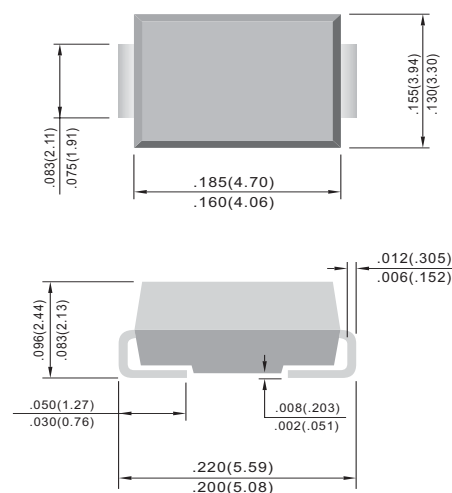
Case: JEDEC DO-214AA, Molded plastic over passivated junction.

Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

Polarity: Color band denotes positive end (cathode)

Standard Packaging: 12mm tape (EIA-481)

Weight: 0.003 ounce, 0.093 gram



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Units
DC Power Dissipation on $T_L=75^{\circ}\text{C}$,Measure at Zero Lead Length Derate above 75°C (NOTE 1)	P_D	1.5	Watts
Operating Junction and Storage Temperature Range	T_J , T_{STG}	-55 to +150	$^{\circ}\text{C}$

NOTES:

1. Mounted on 5.0mm² (.013mm thick) land areas.



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Part Number	V _Z @ I _{ZT}			Maximum Zener Impedance				Leakage Current		Marking Code
				Z _{ZT} @ I _{ZT}		Z _{ZK} @ I _{ZK}		I _R	V _R	
	Nom. V	Min. V	Max. V	Ω	mA	Ω	mA	μA	V	
1SMB5914	3.6	3.42	3.78	9	104.2	500	1.00	75.00	1.00	914B
1SMB5915	3.9	3.71	4.10	8	96.1	500	1.00	25.00	1.00	915B
1SMB5916	4.3	4.09	4.52	6	87.2	500	1.00	5.00	1.00	916B
1SMB5917	4.7	4.47	4.94	5	79.8	500	1.00	5.00	1.50	917B
1SMB5918	5.1	4.85	5.36	4	73.5	350	1.00	5.00	2.0	918B
1SMB5919	5.6	5.32	5.88	2	66.9	250	1.00	5.00	3.00	919B
1SMB5920	6.2	5.89	6.51	2	60.5	200	1.00	5.00	4.00	920B
1SMB5921	6.8	6.46	7.14	3	55.1	200	1.00	5.00	5.20	921B
1SMB5922	7.5	7.13	7.88	3	50.0	400	0.50	5.00	6.00	922B
1SMB5923	8.2	7.79	8.61	4	45.7	400	0.50	5.00	6.50	923B
1SMB5924	9.1	8.65	9.56	4	41.2	500	0.50	5.00	7.00	924B
1SMB5925	10	9.50	10.50	5	37.5	500	0.25	5.00	8.00	925B
1SMB5926	11	10.45	11.55	6	34.1	550	0.25	1.00	8.40	926B
1SMB5927	12	11.40	12.60	7	31.2	550	0.25	1.00	9.10	927B
1SMB5928	13	12.35	13.65	7	28.8	550	0.25	1.00	9.90	928B
1SMB5929	15	14.25	15.75	9	25.0	600	0.25	1.00	11.40	929B
1SMB5930	16	15.20	16.80	10	23.4	600	0.25	1.00	12.20	930B
1SMB5931	18	17.10	18.90	12	20.8	650	0.25	1.00	13.70	931B
1SMB5932	20	19.00	21.00	14	18.7	650	0.25	1.00	15.20	932B
1SMB5933	22	20.90	23.10	18	17.0	650	0.25	1.00	16.70	933B
1SMB5934	24	22.80	25.20	19	15.6	700	0.25	1.00	18.20	934B
1SMB5935	27	25.65	28.35	23	13.9	700	0.25	1.00	20.60	935B
1SMB5936	30	28.50	31.50	26	12.5	750	0.25	1.00	22.80	936B
1SMB5937	33	31.35	34.65	33	11.4	800	0.25	1.00	25.10	937B
1SMB5938	36	34.20	37.80	38	10.4	850	0.25	1.00	27.40	938B
1SMB5939	39	37.05	40.95	45	9.6	900	0.25	1.00	29.70	939B
1SMB5940	43	40.85	45.15	53	8.7	950	0.25	1.00	32.70	940B
1SMB5941	47	44.65	49.35	67	8.0	1000	0.25	1.00	35.80	941B
1SMB5942	51	48.45	53.55	70	7.3	1100	0.25	1.00	38.80	942B
1SMB5943	56	53.20	58.80	86	6.7	1300	0.25	1.00	42.60	943B
1SMB5944	62	58.90	65.10	100	6.0	1500	0.25	1.00	47.10	944B
1SMB5945	68	64.60	71.40	120	5.5	1700	0.25	1.00	51.70	945B
1SMB5946	75	71.25	78.75	140	5.0	2000	0.25	1.00	56.00	946B
1SMB5947	82	77.90	86.10	160	4.6	2500	0.25	1.00	62.20	947B
1SMB5948	91	86.45	95.55	200	4.1	3000	0.25	1.00	69.20	948B
1SMB5949	100	95.00	105.00	250	3.7	3100	0.25	1.00	76.00	949B

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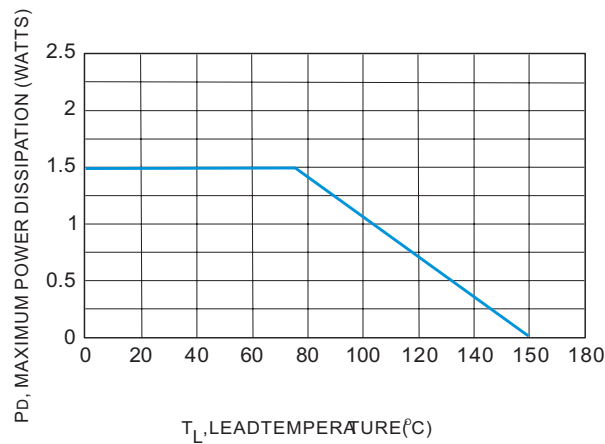


Fig.1 Steady State Power Derating

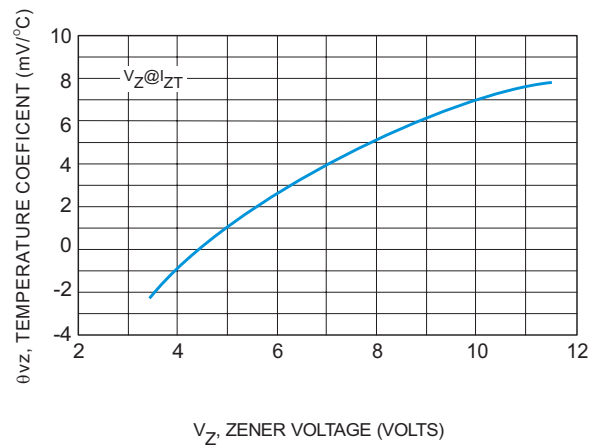


Fig.2 Zener Voltage - to 12 volts

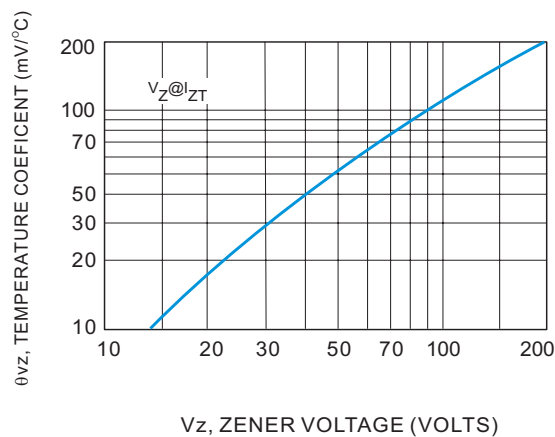


Fig.3 Zener Voltage - 14 to 200 Volts

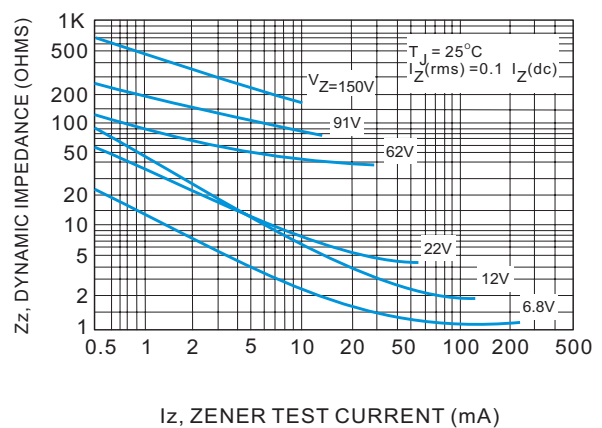


Fig.4 Effect of Zener Current

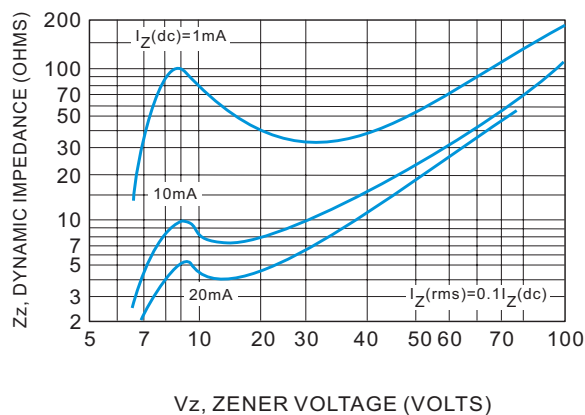


Fig.5 Effect of Zener Voltage

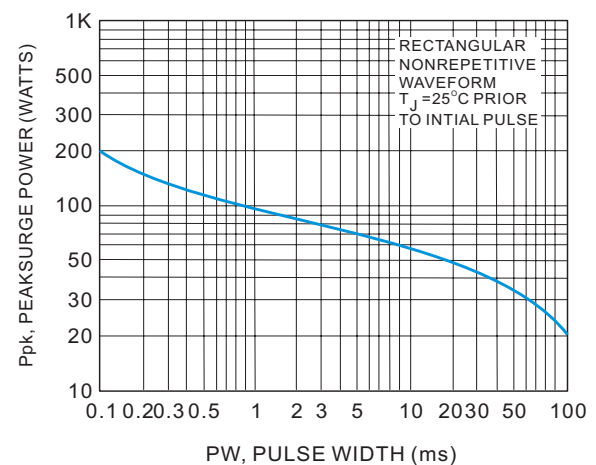


Fig.6 Maximum Surge Power

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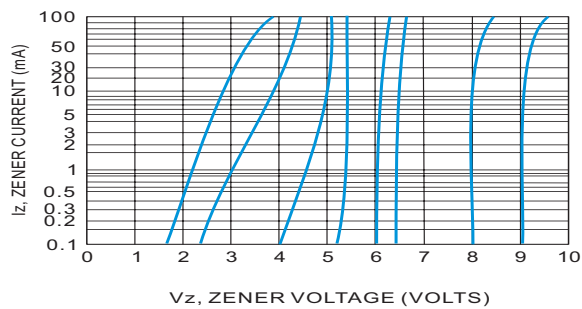


Fig.7 $V_z = 6.8$ thru 10 Volts

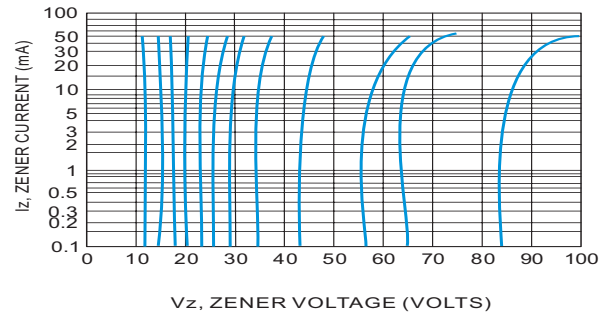


Fig.8 $V_z = 12$ thru 82 Volts

NOTE 3. ZENER VOLTAGE (V_z) MEASUREMENT

Nominal zener voltage is measured with the device function in thermal equilibrium with ambient temperature at 25°C

NOTE 4. ZENER IMPEDANCE (Z_z) DERIVATION

Z_{zt} and Z_{zk} are measured by dividing the ac voltage drop across the device by the accurent applied. The specified limits are for $I_z(ac) = 0.1 I_z, (dc)$ with the ac frequency = 60Hz