



1SMB5921~1SMB5942

SURFACE MOUNT SILICON ZENER DIODE

VOLTAGE 6.8 to 51 Volts **POWER** 1.5 Watts

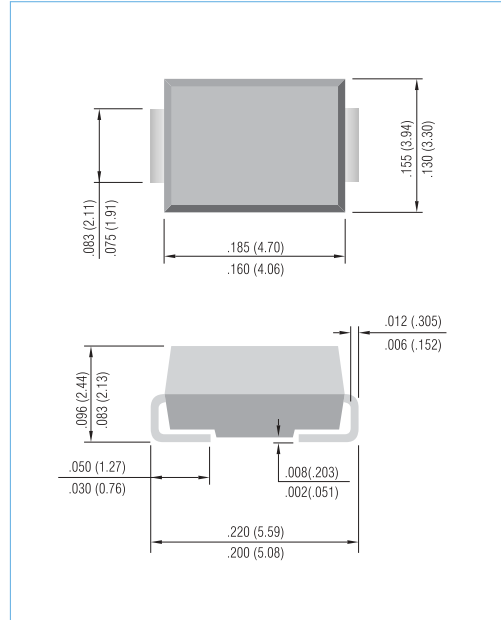
SMB / DO-214AA Unit: inch (mm)

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 $1.0\mu A$ above 12V
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- High temperature soldering : $260^{\circ}C$ /10 seconds at terminals
- In compliance with EU RoHS 2002/95/EC directives

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: 0.0032 ounce, 0.092 gram



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at $25^{\circ}C$ ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Units
Peak Pulse Power Dissipation on $T_L=75^{\circ}C$ (Note A) Derate above $75^{\circ}C$	P_D	1.5	Watts
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	10	Amps
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^{\circ}C$

NOTES:

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

B. Measured on 8.3ms, and single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.



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Part Number	Nominal Zener Voltage			Maximum Zener Impedance				Max. Reverse Leakage Current		Marking Code
	V _Z @ I _{ZT}			Z _{ZT} @ I _{ZT}		Z _{ZK} @ I _{ZK}		I _R	V _R	
	Nom V	Min V	Max V	Ω	mA	Ω	mA	μA	V	
1SMB5921	6.8	6.46	7.14	3	55.1	200	1	5	5.2	921B
1SMB5922	7.5	7.13	7.88	3	50	400	0.5	5	6	922B
1SMB5923	8.2	7.79	8.61	4	45.7	400	0.5	5	6.5	923B
1SMB5924	9.1	8.65	9.56	4	41.2	500	0.5	5	7	924B
1SMB5925	10	9.5	10.5	5	37.5	500	0.25	5	8	925B
1SMB5926	11	10.45	11.55	6	34.1	550	0.25	1	8.4	926B
1SMB5927	12	11.4	12.6	7	31.2	550	0.25	1	9.1	927B
1SMB5928	13	12.35	13.65	7	28.8	550	0.25	1	9.9	928B
1SMB5929	15	14.25	15.75	9	25	600	0.25	1	11.4	929B
1SMB5930	16	15.2	16.8	10	23.4	600	0.25	1	12.2	930B
1SMB5931	18	17.1	18.9	12	20.8	650	0.25	1	13.7	931B
1SMB5932	20	19	21	14	18.7	650	0.25	1	15.2	932B
1SMB5933	22	20.9	23.1	18	17	650	0.25	1	16.7	933B
1SMB5934	24	22.8	25.2	19	15.6	700	0.25	1	18.2	934B
1SMB5935	27	25.65	28.35	23	13.9	700	0.25	1	20.6	935B
1SMB5936	30	28.5	31.5	26	12.5	750	0.25	1	22.8	936B
1SMB5937	33	31.35	34.65	33	11.4	800	0.25	1	25.1	937B
1SMB5938	36	34.2	37.8	38	10.4	850	0.25	1	27.4	938B
1SMB5939	39	37.05	40.95	45	9.6	900	0.25	1	29.7	939B
1SMB5940	43	40.85	45.15	53	8.7	950	0.25	1	32.7	940B
1SMB5941	47	44.65	49.35	67	8	1000	0.25	1	35.8	941B
1SMB5942	51	48.45	53.55	70	7.3	1100	0.25	1	38.8	942B



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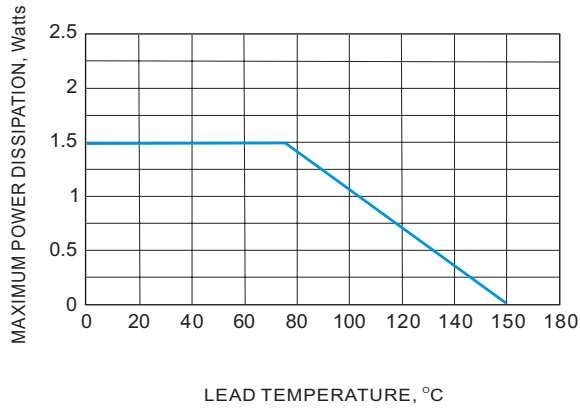


Fig. 1 Steady State Power Derating

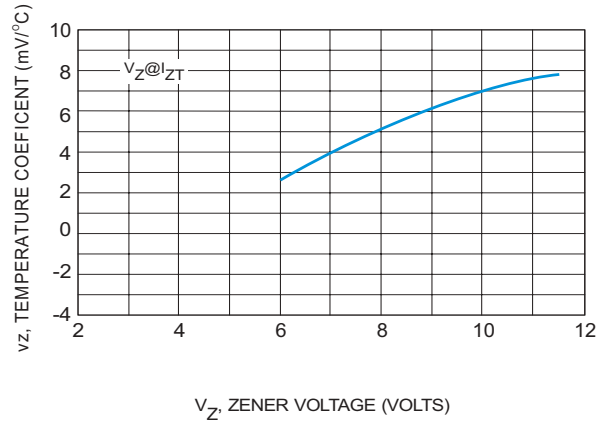


Fig. 2 Zener Voltage - to 12 volts

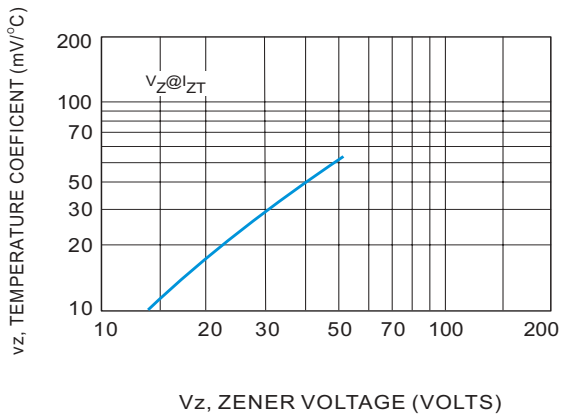


Fig. 3 Zener Voltage - 14 to 200 Volts

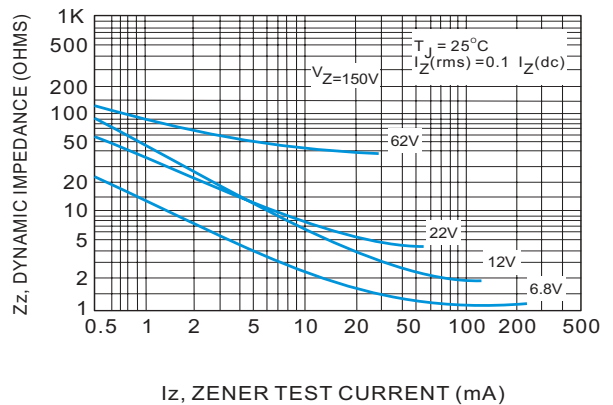


Fig. 4 Effect of Zener Current

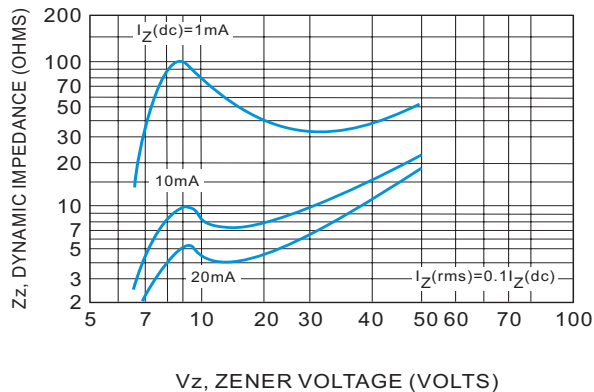


Fig. 5 Effect of Zener Voltage

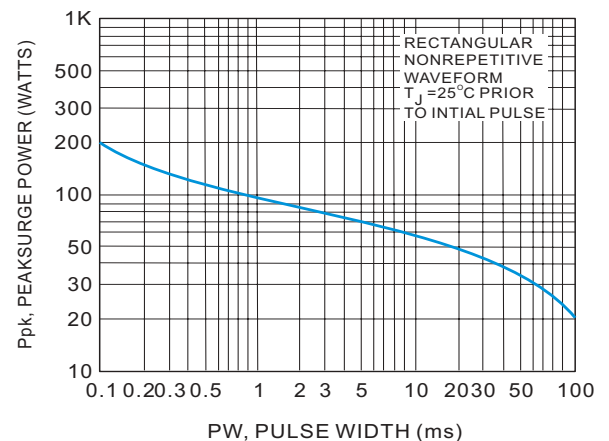


Fig. 6 Maximum Surge Power



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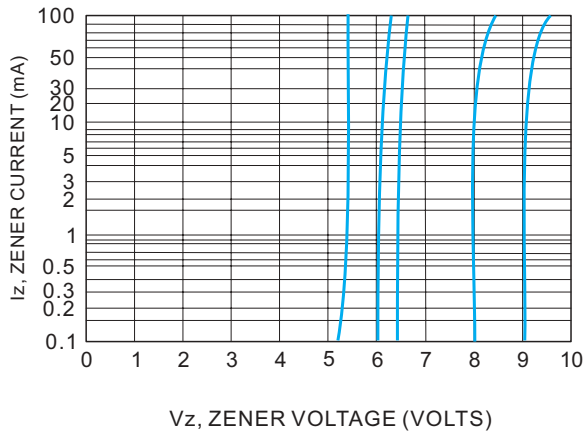


Fig.7 $V_z = 6.8$ thru 10 Volts

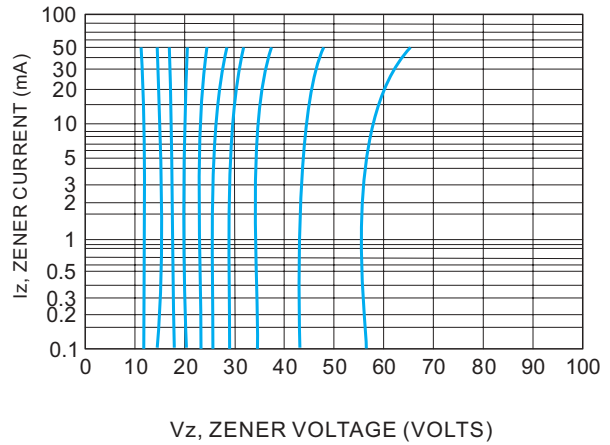


Fig.8 $V_z = 12$ thru 82 Volts

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

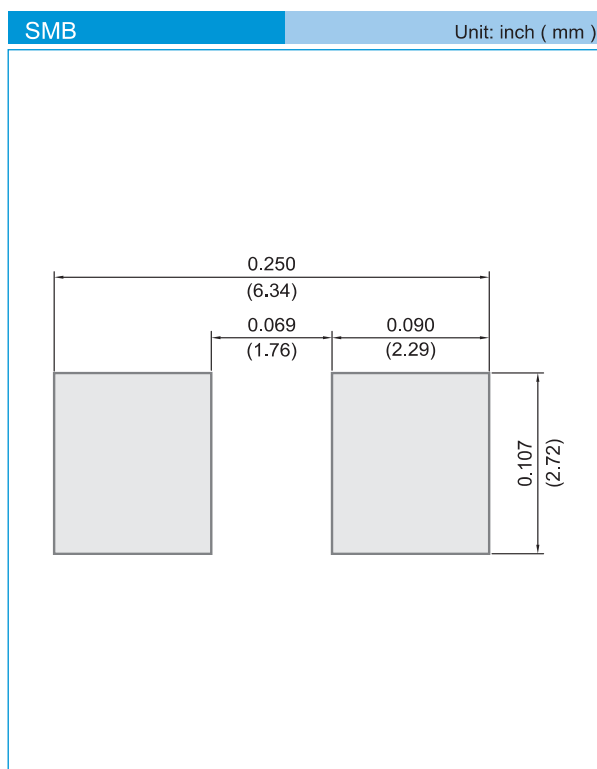
NOTE 4. ZENER IMPEDANCE (Z_z) DERIVATION

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



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MOUNTING PAD LAYOUT



ORDER INFORMATION

- Packing information
 - T/R - 3K per 13" plastic Reel
 - T/R - 0.5Kper 7" plastic Reel

LEGAL STATEMENT

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