



# 1SMB5921~1SMB5942

## SURFACE MOUNT SILICON ZENER DIODE

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

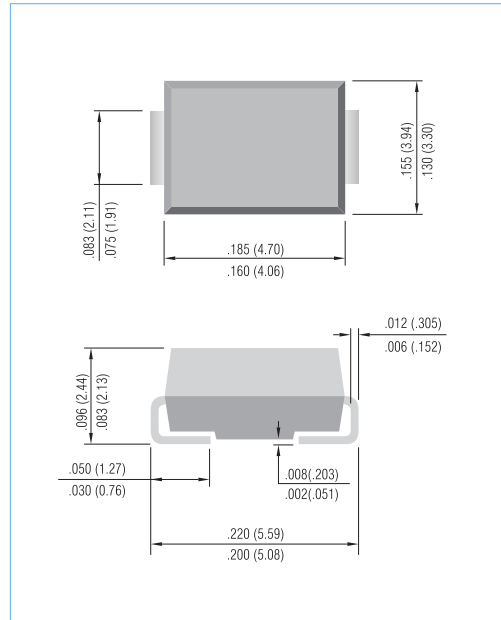
SMB / DO-214AA Unit: inch ( mm )

### 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.



## 1SMB5921~1SMB5942

Part Number	Nominal Zener Voltage			Maximum Zener Impedance				Max. Reverse Leakage Current		Marking Code
	V <sub>Z</sub> @ I <sub>ZT</sub>			Z <sub>ZT</sub> @ I <sub>ZT</sub>		Z <sub>ZK</sub> @ I <sub>ZK</sub>		I <sub>R</sub>	V <sub>R</sub>	
	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



# 1SMB5921~1SMB5942

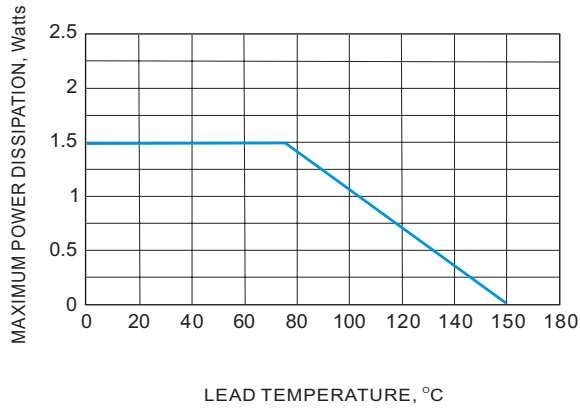


Fig. 1 Steady State Power Derating

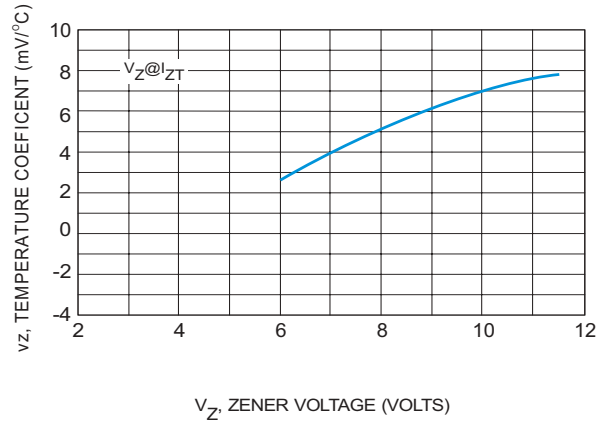


Fig. 2 Zener Voltage - to 12 volts

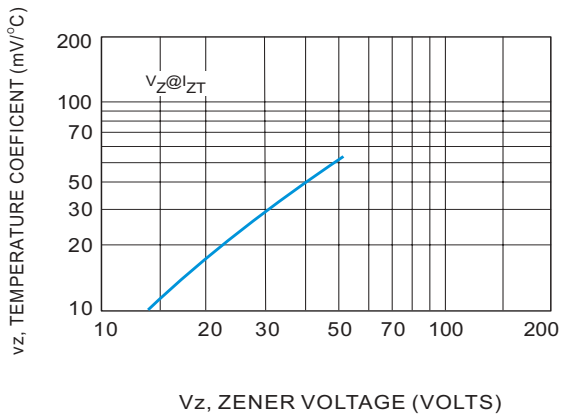


Fig. 3 Zener Voltage - 14 to 200 Volts

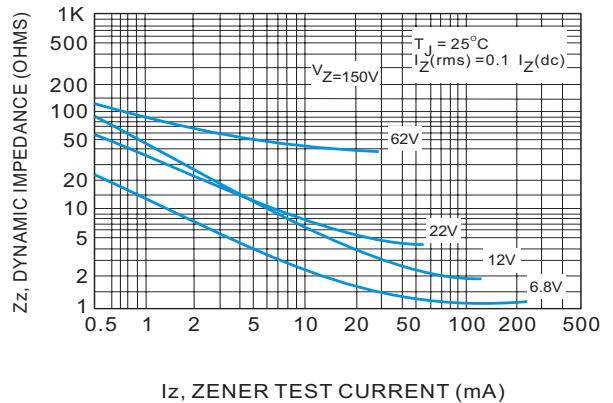


Fig. 4 Effect of Zener Current

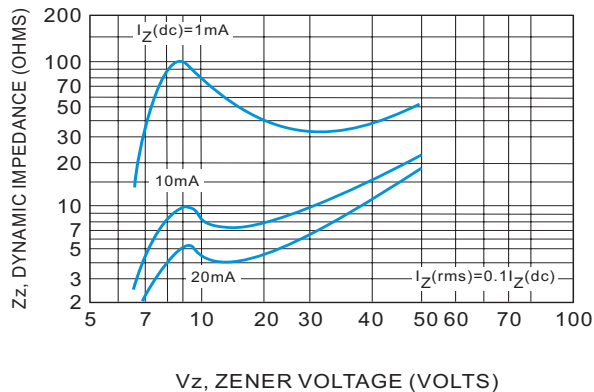


Fig. 5 Effect of Zener Voltage

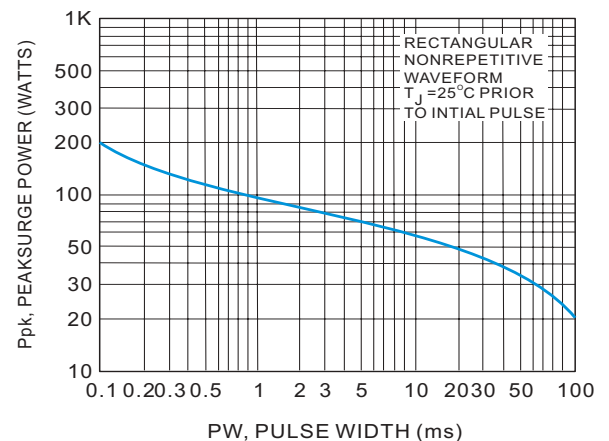


Fig. 6 Maximum Surge Power



## 1SMB5921~1SMB5942

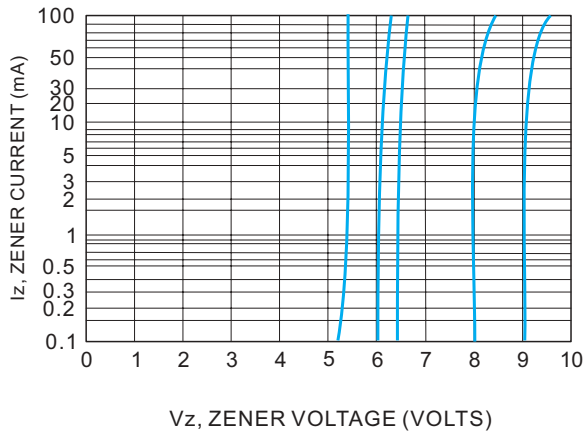


Fig.7  $V_z = 6.8$  thru 10 Volts

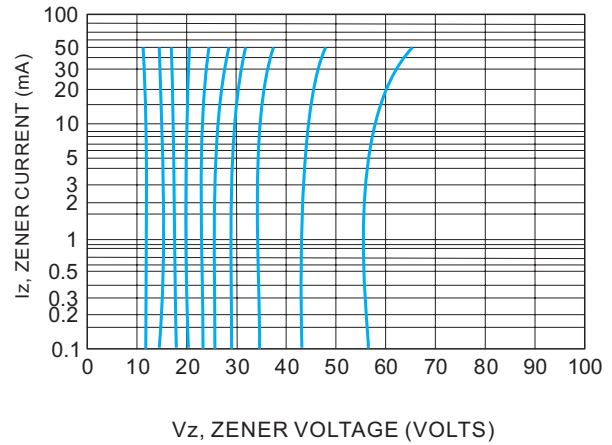


Fig.8  $V_z = 12$  thru 82 Volts

### 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

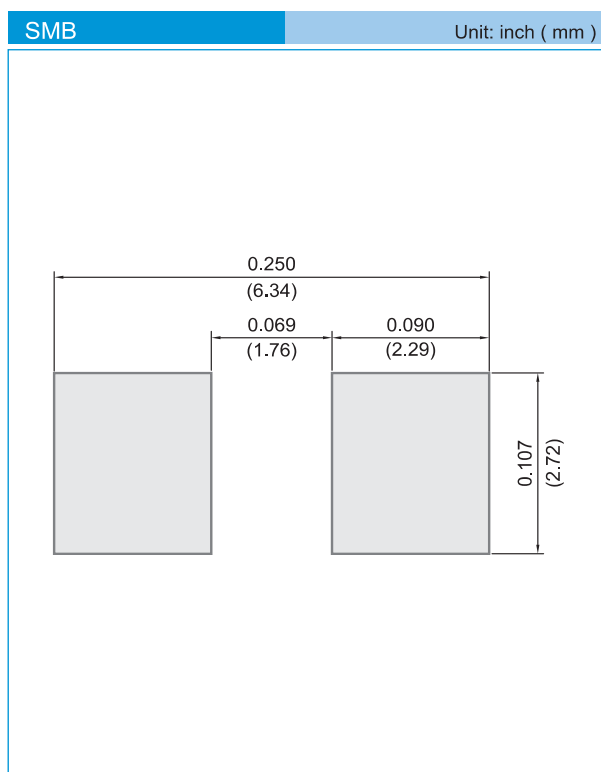
### NOTE 4. ZENER IMPEDANCE ( $Z_z$ ) DERIVATION

$Z_{zt}$  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



# 1SMB5921~1SMB5942

## MOUNTING PAD LAYOUT



## ORDER INFORMATION

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

## LEGAL STATEMENT

### Copyright PanJit International, Inc 2009

The information presented in this document is believed to be accurate and reliable. The specifications and information herein are subject to change without notice. Pan Jit makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose. Pan Jit products are not authorized for use in life support devices or systems. Pan Jit does not convey any license under its patent rights or rights of others.