



# 1SMB5921-AU~1SMB5942-AU

## SURFACE MOUNT SILICON ZENER DIODE

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

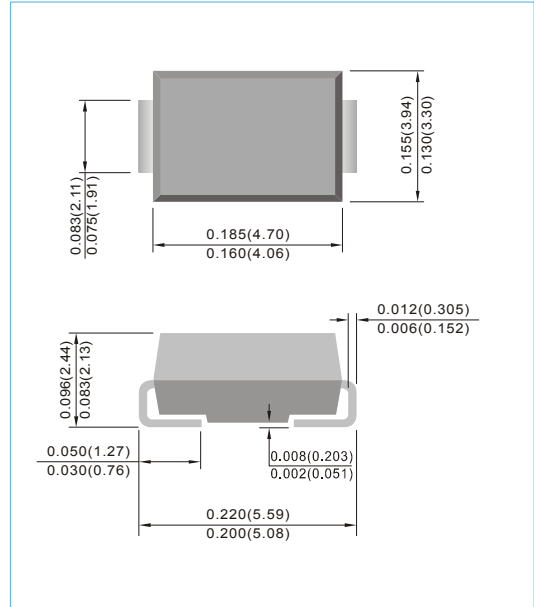
**SMB / DO-214AA** Unit : inch(mm)

### 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-0
- High temperature soldering : 260°C /10 seconds at terminals
- Acquire quality system certificate : TS16949
- AEC-Q101 qualified
- Lead free in comply 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 cathode end
- Standard Packaging: 12mm tape (EIA-481)
- Weight: 0.0032 ounce, 0.092 gram



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Units
Peak Pulse Power Dissipation on $T_L=75^\circ\text{C}$ (Note A) Derate above $75^\circ\text{C}$	$P_D$	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	$^\circ\text{C}$

### NOTES:

- Mounted on 5.0mm2 (.013mm thick) land areas.
- Measured on 8.3ms, and single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.

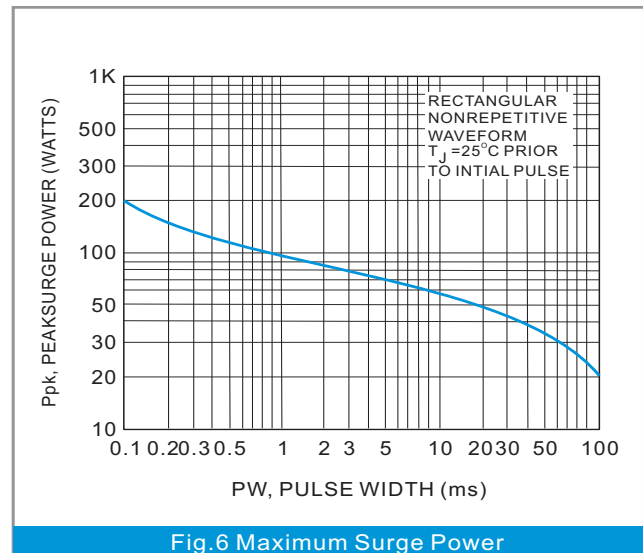
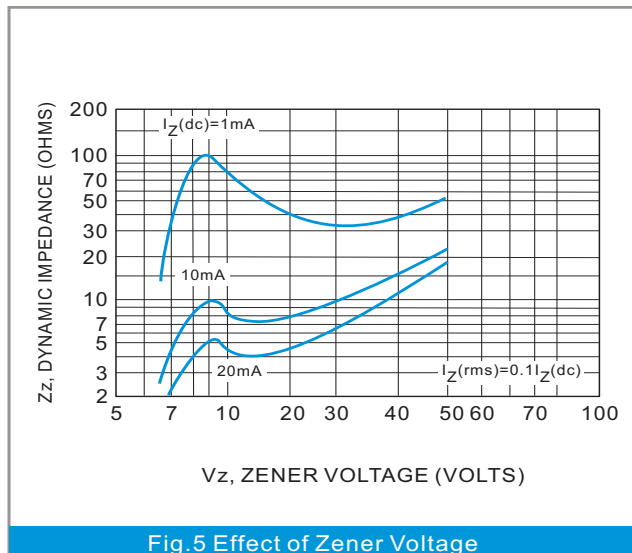
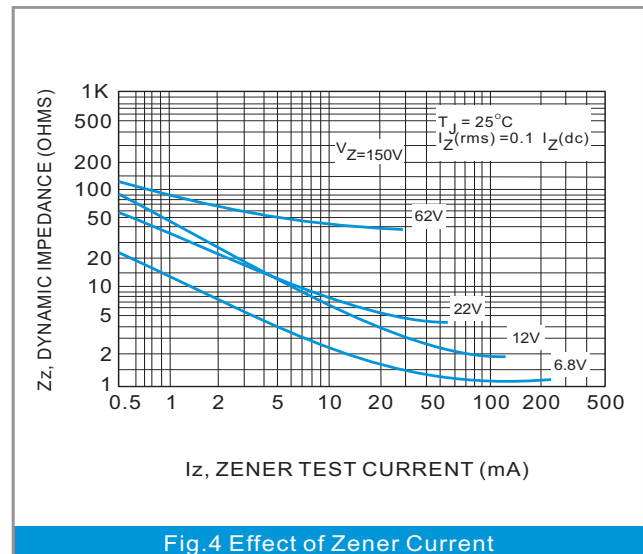
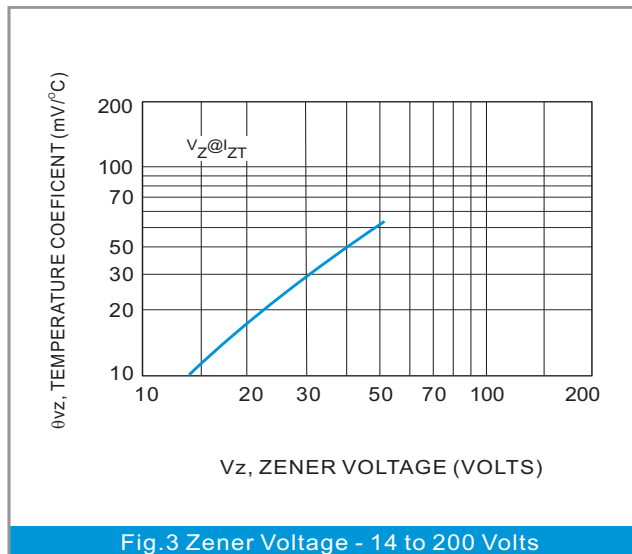
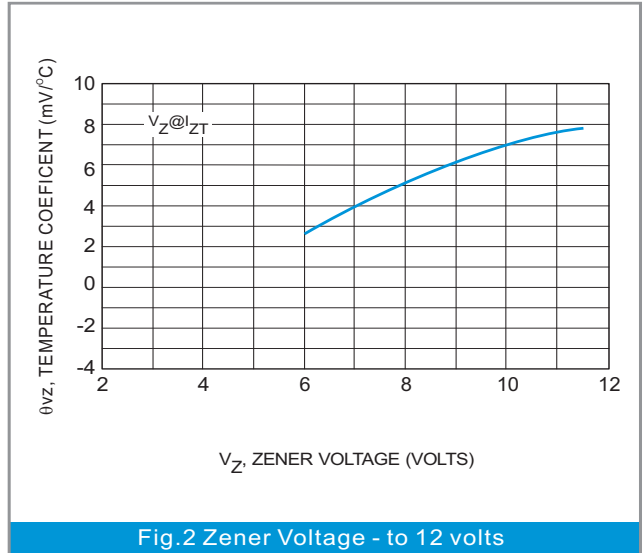
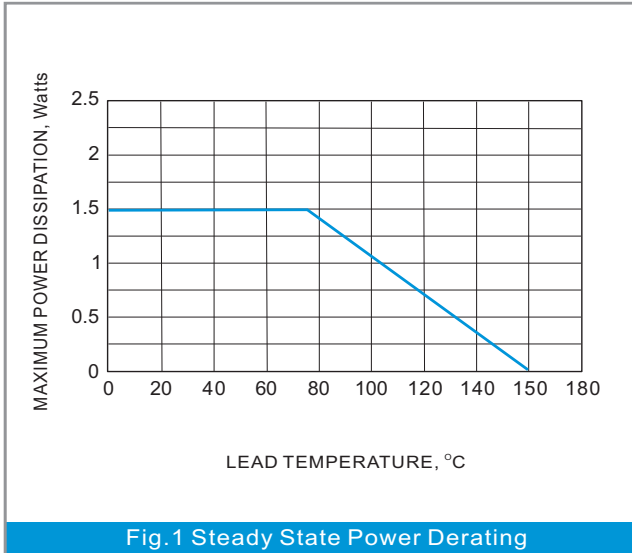


## 1SMB5921-AU~1SMB5942-AU

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



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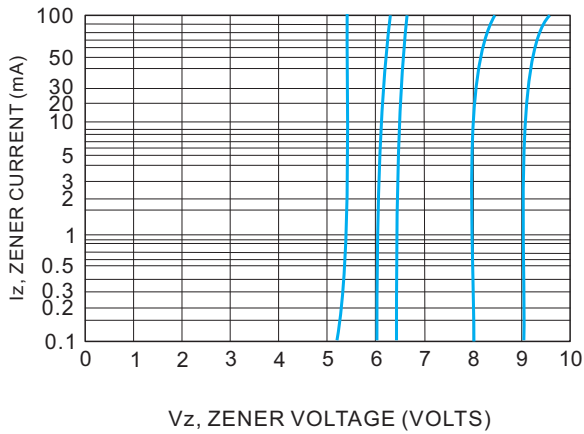


Fig.7  $V_z = 6.8$  thru 10 Volts

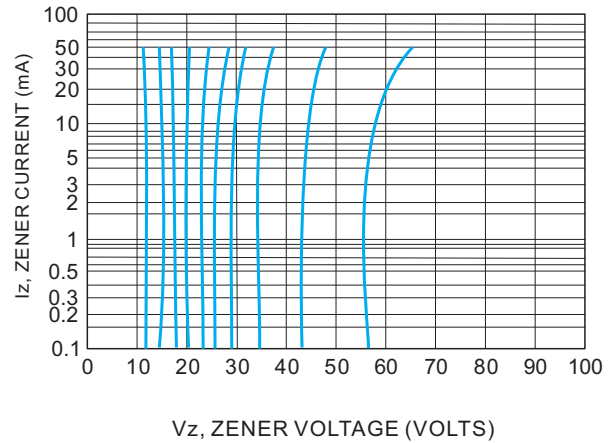


Fig.8  $V_z = 12$  thru 82 Volts

### 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

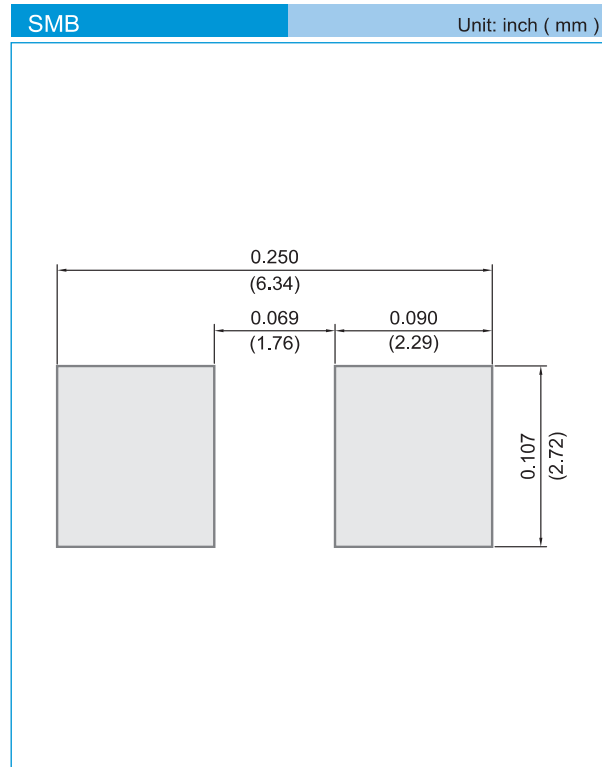
### NOTE 4. ZENER IMPEDANCE ( $Z_z$ ) DERIVATION

$Z_{zt}$  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



## 1SMB5921-AU~1SMB5942-AU

### Part No\_packing code\_Version

1SMB5921-AU\_R1\_000A1  
 1SMB5921-AU\_R1\_100A1  
 1SMB5921-AU\_R2\_000A1  
 1SMB5921-AU\_R2\_100A1

For example :

**RB500V-40\_R2\_00001**



Packing Code <b>XX</b>				Version Code <b>XXXXX</b>		
Packing type	1 <sup>st</sup> Code	Packing size code	2 <sup>nd</sup> Code	HF or RoHS	1 <sup>st</sup> Code	2 <sup>nd</sup> ~5 <sup>th</sup> Code
Tape and Ammunition Box (T/B)	<b>A</b>	N/A	<b>0</b>	<b>HF</b>	<b>0</b>	serial number
Tape and Reel (T/R)	<b>R</b>	7"	<b>1</b>	<b>RoHS</b>	<b>1</b>	serial number
Bulk Packing (B/P)	<b>B</b>	13"	<b>2</b>			
Tube Packing (T/P)	<b>T</b>	26mm	<b>X</b>			
Tape and Reel (Right Oriented) (TRR)	<b>S</b>	52mm	<b>Y</b>			
Tape and Reel (Left Oriented) (TRL)	<b>L</b>	PANASERT T/B CATHODE UP (PBCU)	<b>U</b>			
FORMING	<b>F</b>	PANASERT T/B CATHODE DOWN (PBCD)	<b>D</b>			



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