



# 1SMA5921~1SMA5945

## SURFACE MOUNT SILICON ZENERDIODE

**VOLTAGE** 6.8 to 68 Volt **POWER** 1.5 Watt

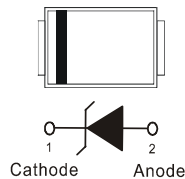
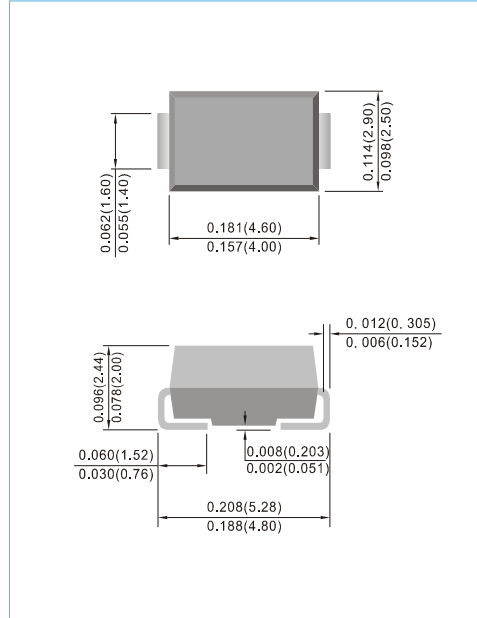
**SMA / DO-214AC** Unit : inch(mm)

### FEATURES

- For surface mounted applications in order to optimize board space
- Glass passivated junction
- Low inductance
- Typical  $I_R$  less than  $1\mu A$  above 12V
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- High temperature soldering :  $260^{\circ}C$  /10 seconds at terminals
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### MECHANICAL DATA

- Case: JEDEC DO-214AC, 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: 0.0023 ounces, 0.0679 grams



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

Parameter	Symbol	Value	Units
Pwak Pulse Power Dissipation on $T_L=75^{\circ}C$ (Notes A) Derate above $75^{\circ}C$	$P_D$	1.5 20	W atts mW/ $^{\circ}C$
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (Notes B)	$I_{FSM}$	10	Amps
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to + 150	$^{\circ}C$

### NOTES :

A.Mounted on  $5mm^2$  (0.013mm 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 <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	
1SMA5921	6.8	6.46	7.14	3	55.1	200	1	5	5.2	921A
1SMA5922	7.5	7.13	7.88	3	50	400	0.5	5	6	922A
1SMA5923	8.2	7.79	8.61	4	45.7	400	0.5	5	6.5	923A
1SMA5924	9.1	8.65	9.56	4	41.2	500	0.5	5	7	924A
1SMA5925	10	9.5	10.5	5	37.5	500	0.25	5	8	925A
1SMA5926	11	10.45	11.55	6	34.1	550	0.25	1	8.4	926A
1SMA5927	12	11.4	12.6	7	31.2	550	0.25	1	9.1	927A
1SMA5928	13	12.35	13.65	7	28.8	550	0.25	1	9.9	928A
1SMA5929	15	14.25	15.75	9	25	600	0.25	1	11.4	929A
1SMA5930	16	15.2	16.8	10	23.4	600	0.25	1	12.2	930A
1SMA5931	18	17.1	18.9	12	20.8	650	0.25	1	13.7	931A
1SMA5932	20	19	21	14	18.7	650	0.25	1	15.2	932A
1SMA5933	22	20.9	23.1	18	17	650	0.25	1	16.7	933A
1SMA5934	24	22.8	25.2	19	15.6	700	0.25	1	18.2	934A
1SMA5935	27	25.65	28.35	23	13.9	700	0.25	1	20.6	935A
1SMA5936	30	28.5	31.5	26	12.5	750	0.25	1	22.8	936A
1SMA5937	33	31.35	34.65	33	11.4	800	0.25	1	25.1	937A
1SMA5938	36	34.2	37.8	38	10.4	850	0.25	1	27.4	938A
1SMA5939	39	37.05	40.95	45	9.6	900	0.25	1	29.7	939A
1SMA5940	43	40.85	45.15	53	8.7	950	0.25	1	32.7	940A
1SMA5941	47	44.65	49.35	67	8	1000	0.25	1	35.8	941A
1SMA5942	51	48.45	53.55	70	7.3	1100	0.25	1	38.8	942A
1SMA5943	56	53.2	58.8	86	6.7	1300	0.25	1	42.6	943A
1SMA5944	62	58.9	65.1	100	6	1500	0.25	1	47.1	944A
1SMA5945	68	64.6	71.4	120	5.5	1700	0.25	1	51.7	945A



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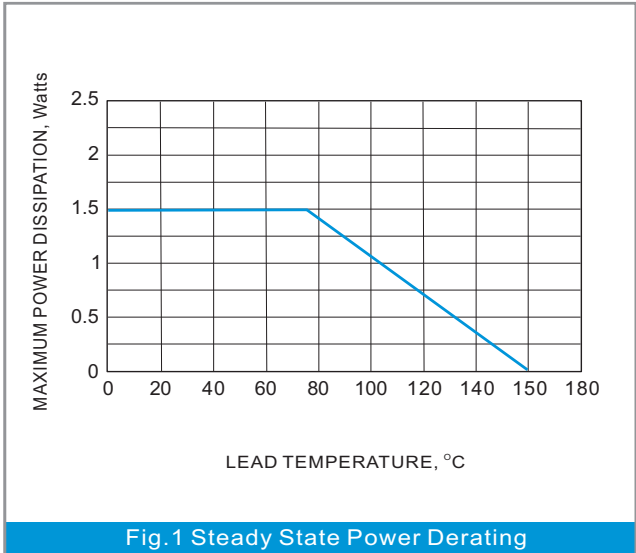


Fig. 1 Steady State Power Derating

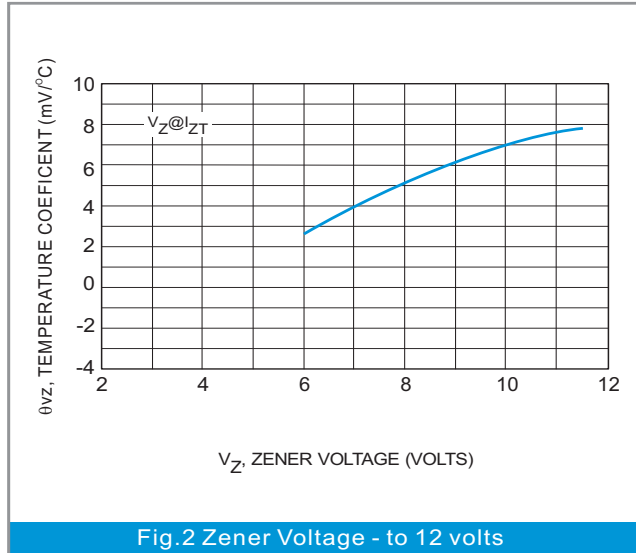


Fig. 2 Zener Voltage - to 12 volts

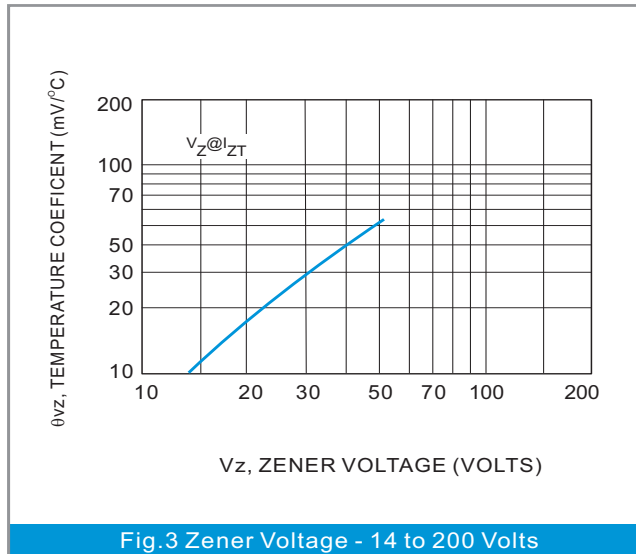


Fig. 3 Zener Voltage - 14 to 200 Volts

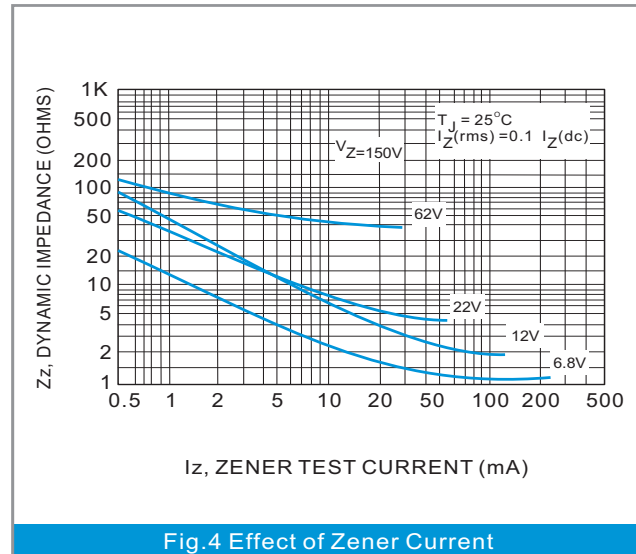


Fig. 4 Effect of Zener Current

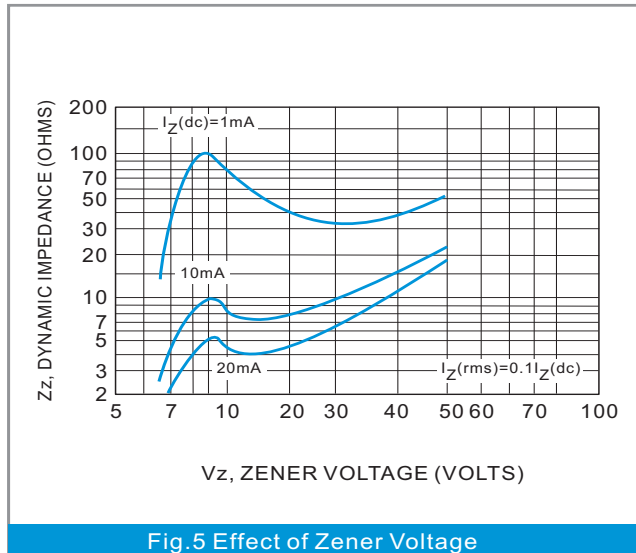


Fig. 5 Effect of Zener Voltage

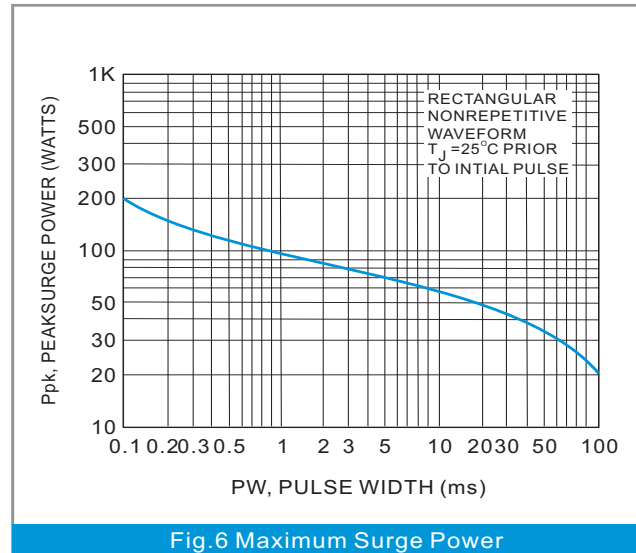
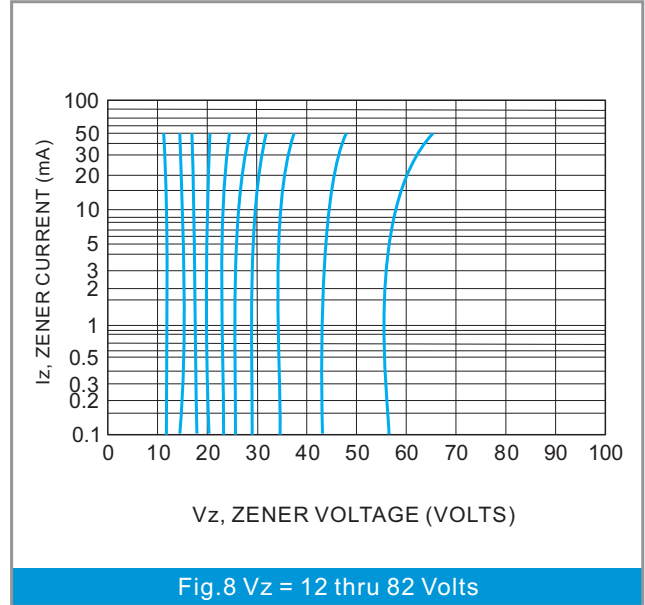
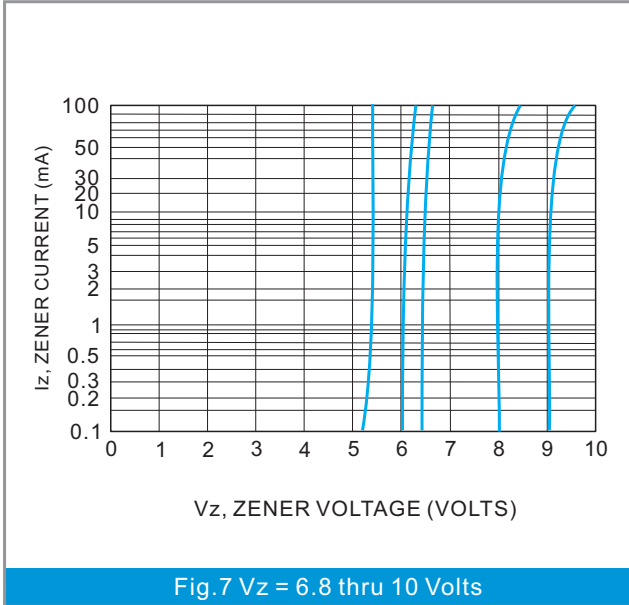


Fig. 6 Maximum Surge Power



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**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

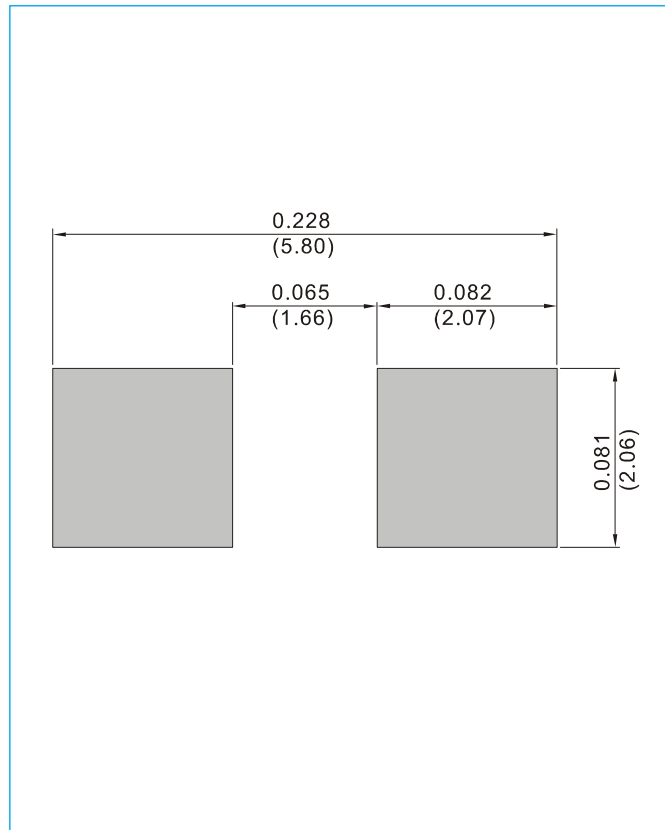


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## MOUNTING PAD LAYOUT

**SMA / DO-214AC**

Unit : inch(mm)



## ORDER INFORMATION

- Packing information
  - T/R - 7.5K per 13" plastic Reel
  - T/R - 1.8K per 7" plastic Reel



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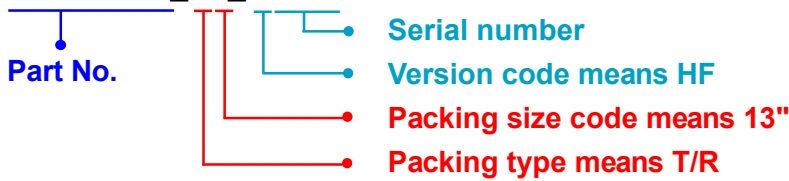
**Part No\_packing code\_Version**

1SMA5921\_R1\_00001

1SMA5921\_R2\_00001

**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>			