



# 1SMA5914~1SMA5949

## SURFACE MOUNT SILICON ZENER DIODE

**VOLTAGE** 3.6 to 100 Volts **POWER** 1.5 Watts

**SMA/DO-214AC**

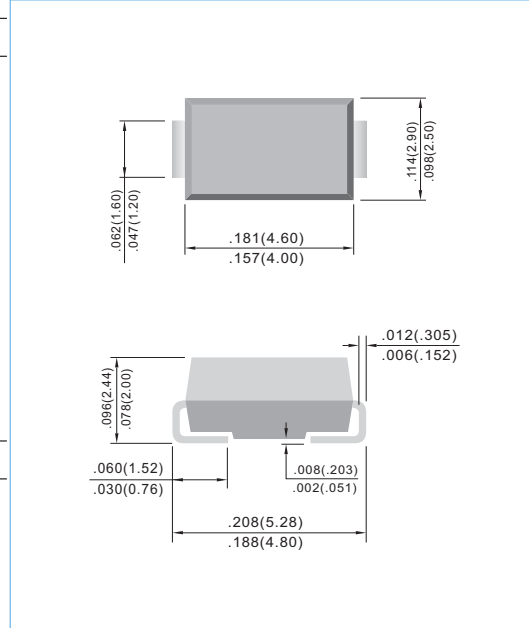
Unit: inch (mm)

### 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°C /10 seconds at terminals
- Pb free product : 99% Sn above can meet RoHS environment substance directive request

### 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 positive end (cathode)
- Standard Packaging: 12mm tape (EIA-481)
- Weight: 0.002 ounce, 0.064 gram



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

	SYMBOLS	VALUE	UNITS
Pwak Pulse Power Dissipation on TA=70°C (Notes A) Derate above 70°C	$P_D$	1.5 15.0	Watts mW / °C
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	10	Amps
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	°C

### NOTES:

A. Mounted on 5.0mm<sup>2</sup> (.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
	Vz@Izt			Zzt @ Izt		Zzk@Izk		IR@VR		
	Nom.V	Min.V	Max.V	Ω	mA	Ω	mA	μA	V	
1SMA5914	3.6	3.42	3.78	9	104.2	500	1.00	75.00	1.00	914A
1SMA5915	3.9	3.71	4.10	8	96.1	500	1.00	25.00	1.00	915A
1SMA5916	4.3	4.09	4.52	6	87.2	500	1.00	5.00	1.00	916A
1SMA5917	4.7	4.47	4.94	5	79.8	500	1.00	5.00	1.50	917A
1SMA5918	5.1	4.85	5.36	4	73.5	350	1.00	5.00	2.00	918A
1SMA5919	5.6	5.32	5.88	2	66.9	250	1.00	5.00	3.00	919A
1SMA5920	6.2	5.89	6.51	2	60.5	200	1.00	5.00	4.00	920A
1SMA5921	6.8	6.46	7.14	3	55.1	200	1.00	5.00	5.20	921A
1SMA5922	7.5	7.13	7.88	3	50.0	400	0.50	5.00	6.00	922A
1SMA5923	8.2	7.79	8.61	4	45.7	400	0.50	5.00	6.50	923A
1SMA5924	9.1	8.65	9.56	4	41.2	500	0.50	5.00	7.00	924A
1SMA5925	10	9.50	10.50	5	37.5	500	0.25	5.00	8.00	925A
1SMA5926	11	10.45	11.55	6	34.1	550	0.25	1.00	8.40	926A
1SMA5927	12	11.40	12.60	7	31.2	550	0.25	1.00	9.10	927A
1SMA5928	13	12.35	13.65	7	28.8	550	0.25	1.00	9.90	928A
1SMA5929	15	14.25	15.75	9	25.0	600	0.25	1.00	11.40	929A
1SMA5930	16	15.20	16.80	10	23.4	600	0.25	1.00	12.20	930A
1SMA5931	18	17.10	18.90	12	20.8	650	0.25	1.00	13.70	931A
1SMA5932	20	19.00	21.00	14	18.7	650	0.25	1.00	15.20	932A
1SMA5933	22	20.90	23.10	18	17.0	650	0.25	1.00	16.70	933A
1SMA5934	24	22.80	25.20	19	15.6	700	0.25	1.00	18.20	934A
1SMA5935	27	25.65	28.35	23	13.9	700	0.25	1.00	20.60	935A
1SMA5936	30	28.50	31.50	26	12.5	750	0.25	1.00	22.80	936A
1SMA5937	33	31.35	34.65	33	11.4	800	0.25	1.00	25.10	937A
1SMA5938	36	34.20	37.80	38	10.4	850	0.25	1.00	27.40	938A
1SMA5939	39	37.05	40.95	45	9.6	900	0.25	1.00	29.70	939A
1SMA5940	43	40.85	45.15	53	8.7	950	0.25	1.00	32.70	940A
1SMA5941	47	44.65	49.35	67	8.0	1000	0.25	1.00	35.80	941A
1SMA5942	51	48.45	53.55	70	7.3	1100	0.25	1.00	38.80	942A
1SMA5943	56	53.20	58.80	86	6.7	1300	0.25	1.00	42.60	943A
1SMA5944	62	58.90	65.10	100	6.0	1500	0.25	1.00	47.10	944A
1SMA5945	68	64.60	71.40	120	5.5	1700	0.25	1.00	51.70	945A
1SMA5946	75	71.25	78.75	140	5.0	2000	0.25	1.00	56.00	946A
1SMA5947	82	77.90	86.10	160	4.6	2500	0.25	1.00	62.20	947A
1SMA5948	91	86.45	95.55	200	4.1	3000	0.25	1.00	68.20	948A
1SMA5949	100	95.00	105.00	250	3.7	3100	0.25	1.00	76.00	949A



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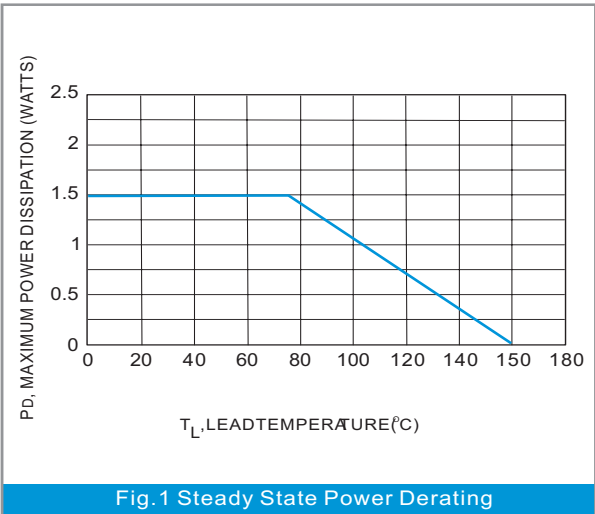


Fig.1 Steady State Power Derating

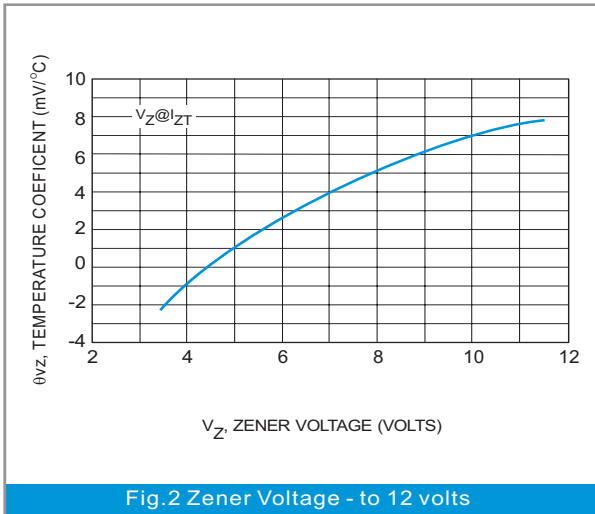


Fig.2 Zener Voltage - to 12 volts

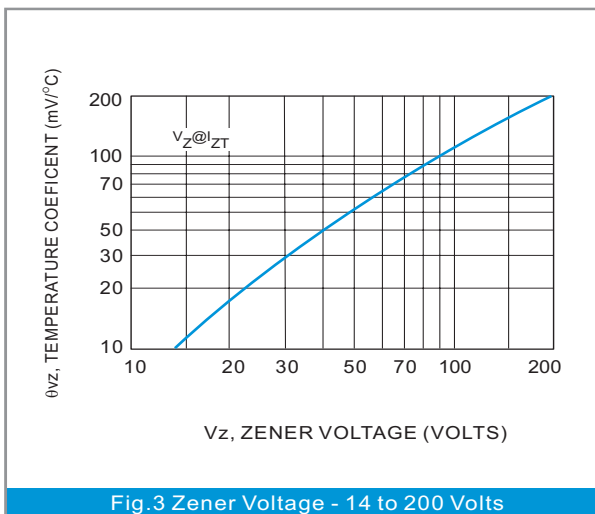


Fig.3 Zener Voltage - 14 to 200 Volts

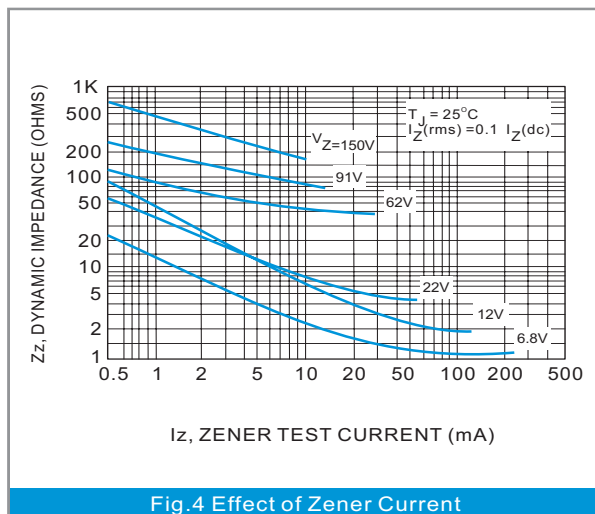


Fig.4 Effect of Zener Current

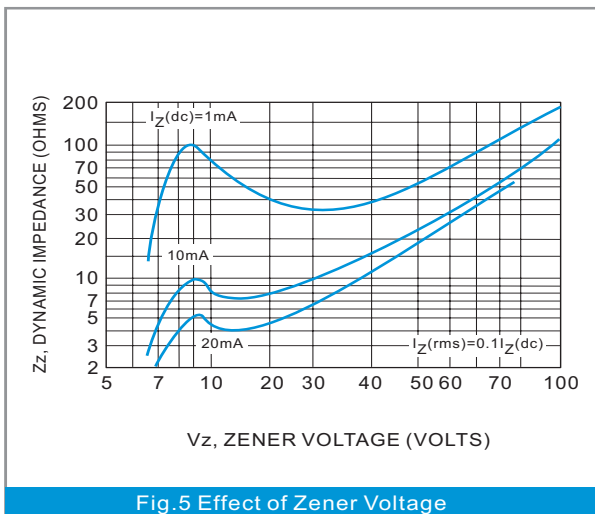


Fig.5 Effect of Zener Voltage

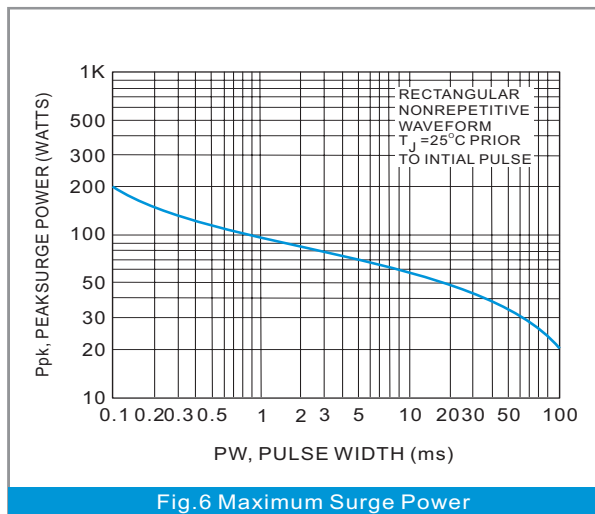
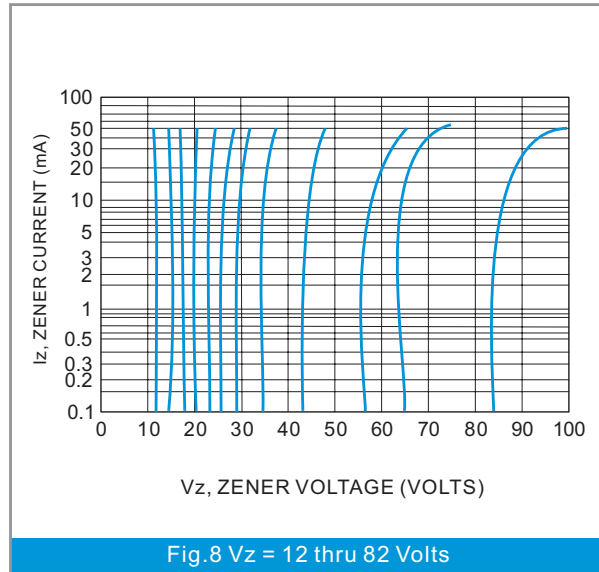
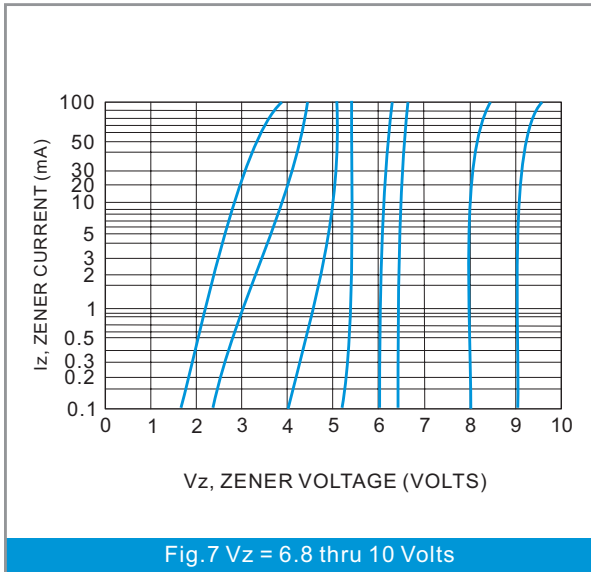


Fig.6 Maximum Surge Power



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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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## LEGAL STATEMENT

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