

# 3.0SMAZ5918B thru 3.0SMAZ5956B

Surface Mount Zener Diodes

$V_Z$  Range: 5.1V to 200V Power Dissipation: 3W

## Features

- Total power dissipation: 3.0W
- For use in stabilizing and clipping circuits with high power ratings
- Low leakage current
- Moisture sensitivity: level 1, per J-STD-020
- Solder dip 260°C, 10s



DO-214AC (SMA)

## Applications

Protection from high voltage, high energy transients.

## Mechanical Data

- Case: DO-214AC (SMA)  
Molded epoxy body meeting UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102
- Polarity: Indicated by cathode band

## Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum Steady State Power Dissipation @ $T_L=75^\circ\text{C}$	$P_D$	3.0	W
Maximum Instantaneous Forward Voltage @ $I_F=200\text{mA}$	$V_F$	1.5	V
Thermal Resistance from Junction to Lead <sup>1</sup>	$R_{\theta JL}$	30	$^\circ\text{C/W}$
Thermal Resistance from Junction to Ambient <sup>1</sup>	$R_{\theta JA}$	170	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

Note:

1. Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0mm x 5.0mm) copper pad areas.

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## Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

Part Number	Marking Code	Zener Voltage <sup>2</sup>	Test Current	Maximum Dynamic Impedance	Knee Current	Knee Impedance	Maximum Reverse Current	Reverse Voltage	Maximum DC Zener Current
		V <sub>Z</sub>	I <sub>ZT</sub>	Z <sub>ZT</sub> @I <sub>ZT</sub>	I <sub>ZK</sub>	Z <sub>ZK</sub>	I <sub>R</sub>	V <sub>R</sub>	I <sub>ZM</sub>
		V	mA	Ω	mA	Ω	μA	V	mA
3.0SMAZ5918B	H18B	5.1	73.5	4	1	350	5	2	588
3.0SMAZ5919B	H19B	5.6	66.9	2	1	250	5	3	534
3.0SMAZ5920B	H20B	6.2	60.5	2	1	200	5	4	482
3.0SMAZ5921B	H21B	6.8	55.1	2.5	1	200	5	5.2	440
3.0SMAZ5922B	H22B	7.5	50	3	0.5	400	5	6	400
3.0SMAZ5923B	H23B	8.2	45.7	3.5	0.5	400	5	6.5	364
3.0SMAZ5924B	H24B	9.1	41.2	4	0.5	500	5	7	328
3.0SMAZ5925B	H25B	10	37.5	4.5	0.25	500	5	8	300
3.0SMAZ5926B	H26B	11	34.1	5.5	0.25	550	1	8.4	272
3.0SMAZ5927B	H27B	12	31.2	6.5	0.25	550	1	9.1	250
3.0SMAZ5928B	H28B	13	28.8	7	0.25	550	1	9.9	230
3.0SMAZ5929B	H29B	15	25	9	0.25	600	1	11.4	200
3.0SMAZ5930B	H30B	16	23.4	10	0.25	600	1	12.2	186
3.0SMAZ5931B	H31B	18	20.8	12	0.25	650	1	13.7	166
3.0SMAZ5932B	H32B	20	18.7	14	0.25	650	1	15.2	150
3.0SMAZ5933B	H33B	22	17	17.5	0.25	650	1	16.7	136
3.0SMAZ5934B	H34B	24	15.6	19	0.25	700	1	18.2	124
3.0SMAZ5935B	H35B	27	13.9	23	0.25	700	1	20.6	110
3.0SMAZ5936B	H36B	30	12.5	28	0.25	750	1	22.8	100
3.0SMAZ5937B	H37B	33	11.4	33	0.25	800	1	25.1	90
3.0SMAZ5938B	H38B	36	10.4	38	0.25	850	1	27.4	82
3.0SMAZ5939B	H39B	39	9.6	45	0.25	900	1	29.7	76
3.0SMAZ5940B	H40B	43	8.7	53	0.25	950	1	32.7	68
3.0SMAZ5941B	H41B	47	8	67	0.25	1000	1	35.8	62
3.0SMAZ5942B	H42B	51	7.3	70	0.25	1100	1	38.8	58
3.0SMAZ5943B	H43B	56	6.7	86	0.25	1300	1	42.6	52
3.0SMAZ5944B	H44B	62	6	100	0.25	1500	1	47.1	48
3.0SMAZ5945B	H45B	68	5.5	120	0.25	1700	1	51.7	44
3.0SMAZ5946B	H46B	75	5	140	0.25	2000	1	56	40
3.0SMAZ5947B	H47B	82	4.6	160	0.25	2500	1	62.2	36
3.0SMAZ5948B	H48B	91	4.1	200	0.25	3000	1	69.2	32
3.0SMAZ5949B	H49B	100	3.7	250	0.25	3100	1	76	30
3.0SMAZ5950B	H50B	110	3.4	300	0.25	4000	1	83.6	26
3.0SMAZ5951B	H51B	120	3.1	380	0.25	4500	1	91.2	24
3.0SMAZ5952B	H52B	130	2.9	450	0.25	5000	1	98.8	22
3.0SMAZ5953B	H53B	150	2.5	600	0.25	6000	1	114	20
3.0SMAZ5954B	H54B	160	2.3	700	0.25	6500	1	121.6	18
3.0SMAZ5955B	H55B	180	2.1	900	0.25	7000	1	136.8	16
3.0SMAZ5956B	H56B	200	1.9	1200	0.25	8000	1	152	14

Note:

2. Zener voltage tolerance is ±5%.

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## Typical Electrical Characteristic Curves

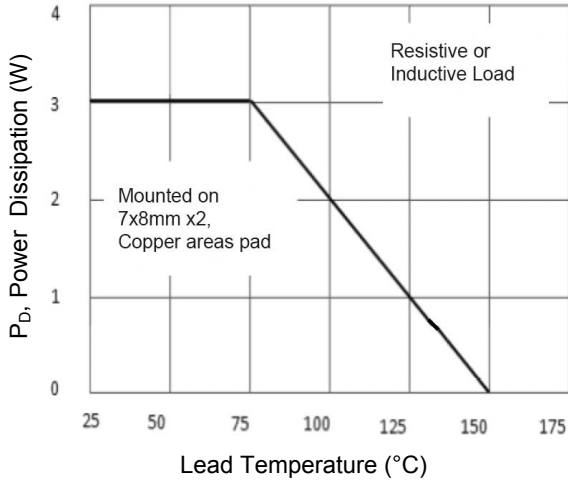


Figure 1. Maximum Continuous Power Dissipation

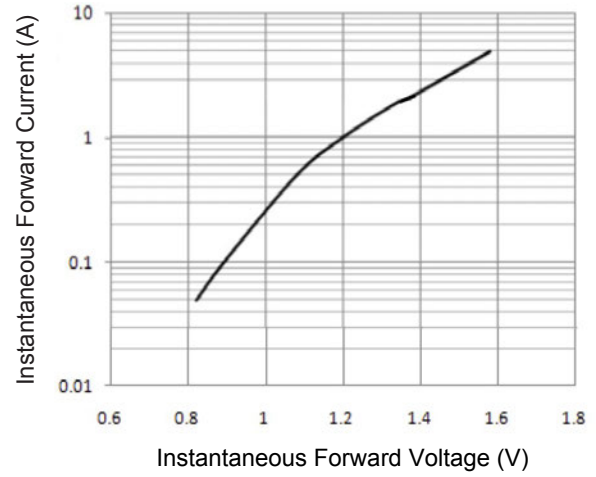


Figure 2. Typical Instantaneous Forward Characteristics

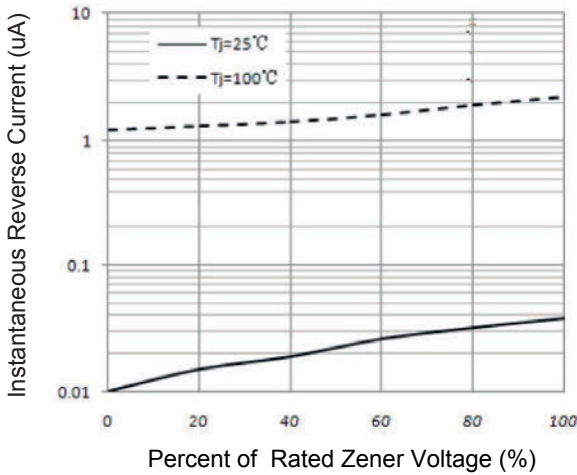


Figure 3. Typical Reverse Characteristics

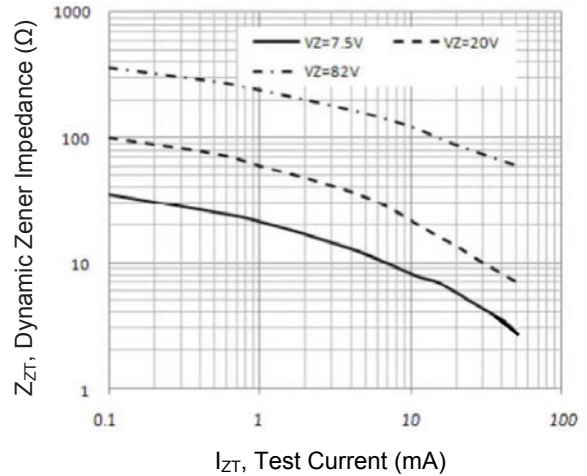


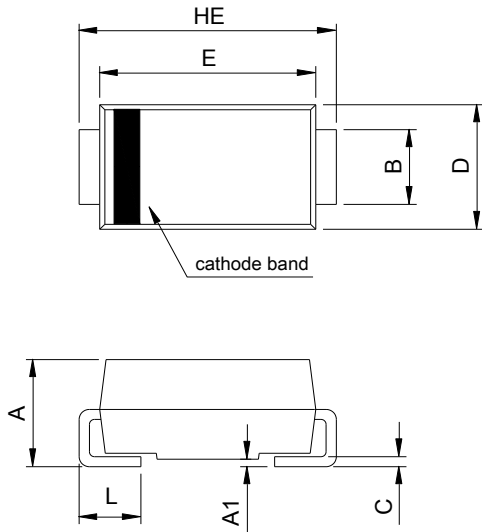
Figure 4. Typical Zener Impedance

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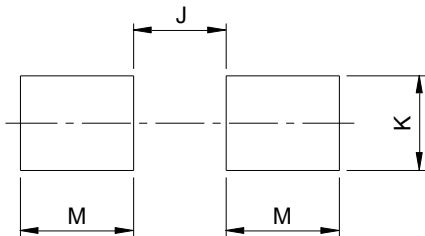
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## Package Outline Dimensions DO-214AC (SMA)



SMA (DO-214AC)				
DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.90	2.30	0.075	0.091
A1	0.00	0.20	0.000	0.008
B	1.25	1.65	0.049	0.065
C	0.15	0.31	0.006	0.012
D	2.35	2.90	0.093	0.114
E	3.99	4.60	0.157	0.181
HE	4.80	5.30	0.189	0.209
L	0.76	1.52	0.030	0.060

## Recommended Pad Layout



Recommended Pad Layout (Reference ONLY)				
DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	-	2.20	-	0.087
K	1.72	-	0.068	-
M	2.00	-	0.079	-

## Ordering information

Device	Package	Quantity	HSF Status
3.0SMAZ59xxB	DO-214AC (SMA)	7,500pcs / Reel	RoHS Compliant