

# Zener Diodes

## DO-214AC SMA AEC-Q101

1SMA47xx-A series

**MERITEK**

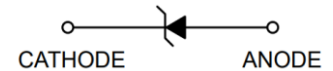
### FEATURE

- Zener Voltage Range: 3.3V to 51V
- Zener Voltage Tolerance:  $\pm 5\%$
- Power Dissipation: 1W
- Glass Passivation Junction
- Built-In Strain Relief, Low Inductance
- High Peak Reverse Power Dissipation
- Flammability Classification Rating UL 94V-0
- AEC-Q101 Qualified



### MECHANICAL DATA

- Case: DO-214AC, Molded Plastic
- Solderable Per MIL-STD-750, Method 2026
- Polarity: Color Band Denoted Cathode End



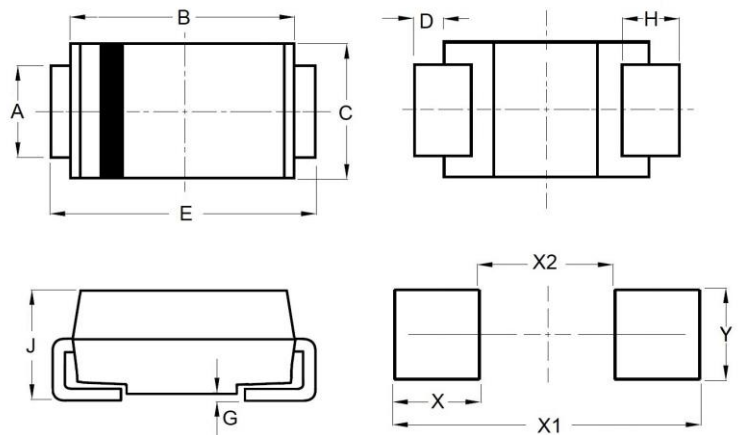
### ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at $T_L = 50^\circ\text{C}$	$P_D$	1.0	W
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed on Rated Load	$I_{FSM}$	10	A
Junction Temperature Range	$T_J$	-55 to +150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^\circ\text{C}$

Note:  $T_A = 25^\circ\text{C}$  unless otherwise noted

### DIMENSIONS

Item	DO-214AC (SMA)	
	Min(mm)	Max(mm)
A	1.40	1.60
B	4.00	4.60
C	2.50	2.90
D	0.152	0.305
E	4.80	5.28
G	0.051	0.203
H	0.76	1.52
J	2.00	2.44
X	2.07	
X1	5.80	
X2	1.66	
Y	2.06	



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### ELECTRICAL CHARACTERISTICS

Part Number	Nominal Zener Voltage			Maximum Zener Impedance				Max Reverse Leakage Current	
	$V_Z @ I_{ZT}$			$Z_{ZT} @ I_{ZT}$		$Z_{ZK} @ I_{ZK}$		$I_R @ V_R$	
	Nom V	Min V	Max V	$\Omega$	mA	$\Omega$	mA	$\mu A$	V
1SMA4728-A	3.3	3.10	3.50	10	76	400	1	100	1
1SMA4730-A	3.9	3.70	4.10	9.0	64	400	1	50	1
1SMA4731-A	4.3	4.10	4.50	9.0	58	400	1	10	1
1SMA4732-A	4.7	4.50	4.90	8.0	53	500	1	10	1
1SMA4733-A	5.1	4.80	5.40	7.0	49	550	1	10	1
1SMA4734-A	5.6	5.30	5.90	5.0	45	600	1	10	2
1SMA4735-A	6.2	5.90	6.50	2.0	41	700	1	10	3
1SMA4736-A	6.8	6.46	7.14	3.5	37	700	1	5	4
1SMA4737-A	7.5	7.13	7.88	4.0	34	700	0.5	5	5
1SMA4738-A	8.2	7.79	8.61	4.5	31	700	0.5	5	6
1SMA4739-A	9.1	8.65	9.56	5.0	28	700	0.5	0.5	7
1SMA4740-A	10	9.50	10.50	7.0	25	700	0.25	0.5	7.6
1SMA4741-A	11	10.45	11.55	8.0	23	700	0.25	0.1	8.4
1SMA4742-A	12	11.40	12.60	9.0	21	700	0.25	0.1	9.1
1SMA4743-A	13	12.35	13.65	10	19	700	0.25	0.1	9.9
1SMA4744-A	15	14.25	15.75	14	17	700	0.25	0.1	11.4
1SMA4745-A	16	15.20	16.80	16	15.5	700	0.25	0.1	12.2
1SMA4746-A	18	17.10	18.90	20	14.0	750	0.25	0.1	13.7
1SMA4747-A	20	19.00	21.00	22	12.5	750	0.25	0.1	15.2
1SMA4748-A	22	20.90	23.10	23	11.5	750	0.25	0.1	16.7
1SMA4749-A	24	22.80	25.20	25	10.5	750	0.25	0.1	18.2
1SMA4750-A	27	25.65	28.35	35	9.5	750	0.25	0.1	20.6
1SMA4751-A	30	28.50	31.50	40	8.5	1000	0.25	0.1	22.8
1SMA4752-A	33	31.35	34.65	45	7.5	1000	0.25	0.1	25.1
1SMA4753-A	36	34.20	37.80	50	7.0	1000	0.25	0.1	27.4
1SMA4754-A	39	37.05	40.95	60	6.5	1000	0.25	0.1	29.7
1SMA4755-A	43	40.85	45.15	70	6.0	1500	0.25	0.1	32.7
1SMA4756-A	47	44.65	49.35	80	5.5	1500	0.25	0.1	35.8
1SMA4757-A	51	48.45	53.55	95	5.0	1500	0.25	0.1	38.8

Note:

- $T_A = 25^\circ C$  unless otherwise noted
- Standard tolerance on the nominal Zener voltage:  $\pm 5\%$
- Mounted on 5mm<sup>2</sup> land areas.
- Measured on 8.3ms, and single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.

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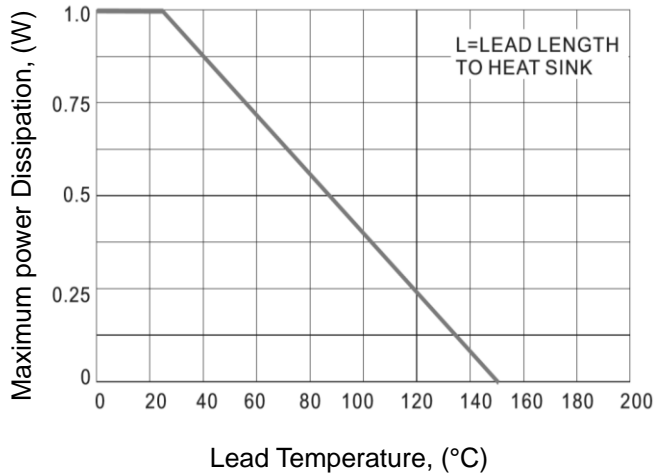
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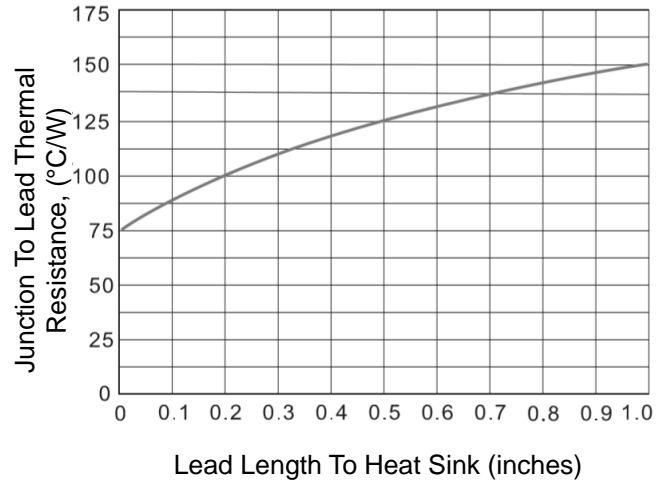
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### CHARACTERISTIC CURVES

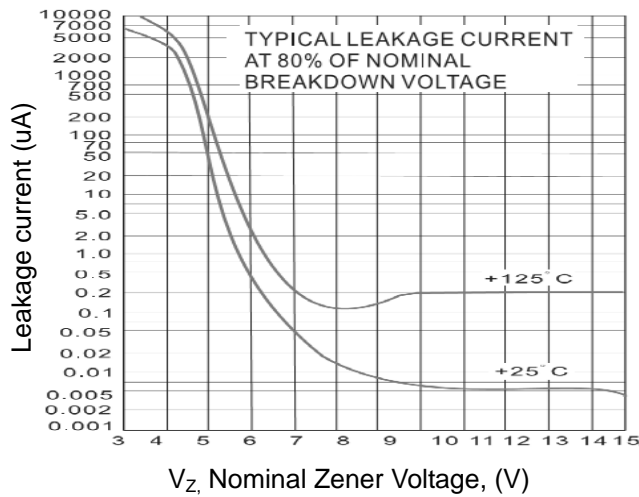
**Power Temperature Derating Curve**



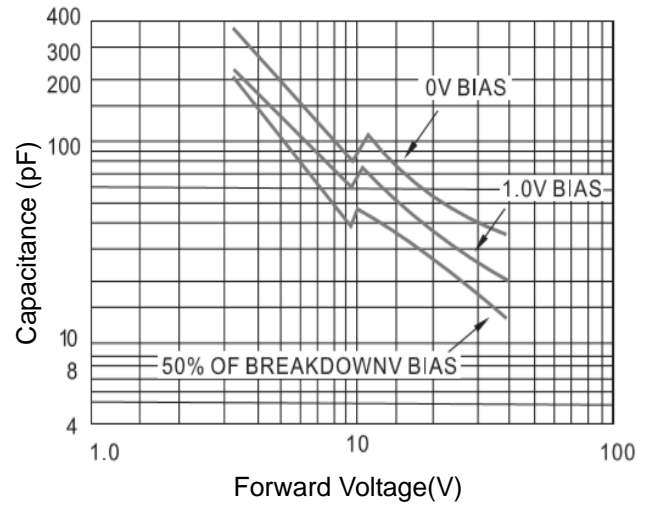
**Typical Thermal Resistance versus Lead Length**



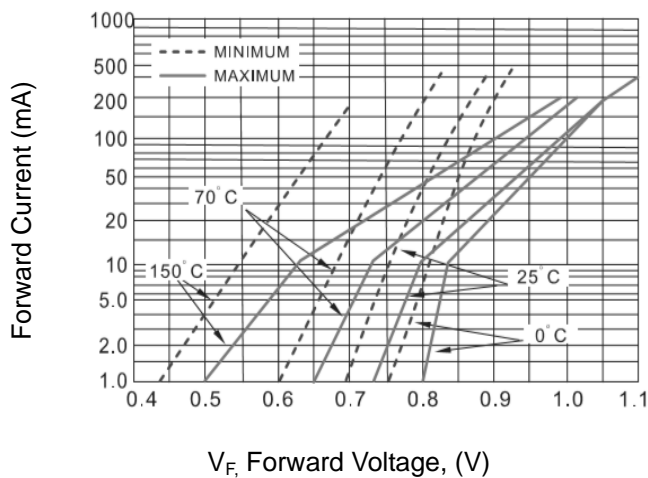
**Typical Leakage Current**



**Typical Capacitance versus V<sub>Z</sub>**



**Typical Forward Characteristics**



\*Specifications subject to change without notice