GOOD-ARK SEMICONDUCTOR

1SMA4738A thru 1SMA4764A

Surface Mount Zener Diodes

Vz Range:8.2V to 100V Power Dissipation:1W

Features

- Silicon power zener diodes
- For use in stabilizing and clipping circuits with high power rating.
- Suffix"A" for ±5% tolerance.

Package:
DO-214AC (SMA)

RoHS COMPLIANT

Maximum Rating (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Zener Current		See Next Page	
Power Dissipation at T_L=70°C	P_{tot}	1	W
JunctionTemperature	T_J	150	°C
Storage Temperature Range	T_S	-55to+150	°C
Typical Thermal Resistance (Note1)	$R_{\theta JA}$	125	°C/W
	$R_{\theta JL}$	30	°C/W

Note1: Thermal resistance from junction to ambient & lead, mounted on PCB with 5.0×5.0mm copper pads

Electrical Charateristics (T_A=25°C unless otherwise specified)

Part number	Device Marking Code	Nominal Zener Voltage at I_{ZT} Vz (Volts)(1)	Test Current I_{ZT}(mA)	Maximum Zener Impedance(2)			Maximum Reverse Leakage Current		Maximum Surge Current(3)	Maximum Regulator Current(4) at T_A=50°C
				Z_{ZT} at I_{ZT} (Ω)	Z_{ZK} (Ω)	At I_{ZK} (mA)	I_R(uA)	at V_R (Volts)	I_{RM}(mApk)	I_{ZM}(mA)
1SMA4738A	4738A	8.2	31	4.5	700	0.5	10	6	550	122
1SMA4739A	4739A	9.1	28	5.0	700	0.5	10	7	500	110
1SMA4740A	4740A	10	25	7	700	0.25	10	7.6	454	100
1SMA4741A	4741A	11	23	8	700	0.25	5	8.4	414	83
1SMA4742A	4742A	12	21	9	700	0.25	5	9.1	380	76
1SMA4743A	4743A	13	19	10	700	0.25	5	9.9	344	69
1SMA4744A	4744A	15	17	14	700	0.25	5	11.4	304	61
1SMA4745A	4745A	16	15.5	16	700	0.25	5	12.2	285	57
1SMA4746A	4746A	18	14	20	750	0.25	5	13.7	250	50
1SMA4747A	4747A	20	12.5	22	750	0.25	5	15.2	225	45
1SMA4748A	4748A	22	11.5	23	750	0.25	5	16.7	205	41
1SMA4749A	4749A	24	10.5	25	750	0.25	5	18.2	190	38

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				Z_{ZT} at I_{ZT} (Ω)	Z_{ZK} (Ω)	At I_{ZK} (mA)	I_R(uA)	at V_R (Volts)	I_{RM}(mApk)	I_{ZM}(mA)
1SMA4750A	4750A	27	9.5	35	750	0.25	5	20.6	170	34
1SMA4751A	4751A	30	8.5	40	1000	0.25	5	22.8	150	30
1SMA4752A	4752A	33	7.5	45	1000	0.25	5	25.1	135	27
1SMA4753A	4553A	36	7.0	50	1000	0.25	5	27.4	125	25
1SMA4754A	4754A	39	6.5	60	1000	0.25	5	29.7	115	23
1SMA4755A	4755A	43	6.0	70	1500	0.25	5	32.7	110	22
1SMA4756A	4756A	47	5.5	80	1500	0.25	5	35.8	95	19
1SMA4757A	4757A	51	5.0	95	1500	0.25	5	38.8	90	18
1SMA4758A	4758A	56	4.5	110	2000	0.25	5	42.6	80	16
1SMA4759A	4759A	62	4.0	125	2000	0.25	5	47.1	70	14
1SMA4760A	4760A	68	3.7	150	2000	0.25	5	51.7	65	13
1SMA4761A	4761A	75	3.3	175	2000	0.25	5	56.0	60	12
1SMA4762A	4762A	82	3.0	200	3000	0.25	5	62.2	55	11
1SMA4763A	4763A	91	2.8	250	3000	0.25	5	69.2	50	10
1SMA4764A	4764A	100	2.5	350	3000	0.25	5	76	45	9

Notes: (1) Measured under thermal equilibrium and DC test conditions , Standard voltage tolerance is 10%, suffix A±5%.

(2) The Zener impedance is derived from the 1KHZ AC voltage which results when an AC current having an RMS value equal to 10% of the Zener current (IZT or IZK) is superimposed on IZT or IZK. Zener impedance is measure at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units.

(3) Maximum surge current: Surge current is a non-repetitive,8.3ms pulse width square wave or equivalent sine-wave superimposed on IZT per JEDEC method.

(4) Valid provided that electrodes at a distance of 10 mm from case are kept at ambient temperature.

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Ratings and Characteristic Curves (at 25°C unless otherwise specified)

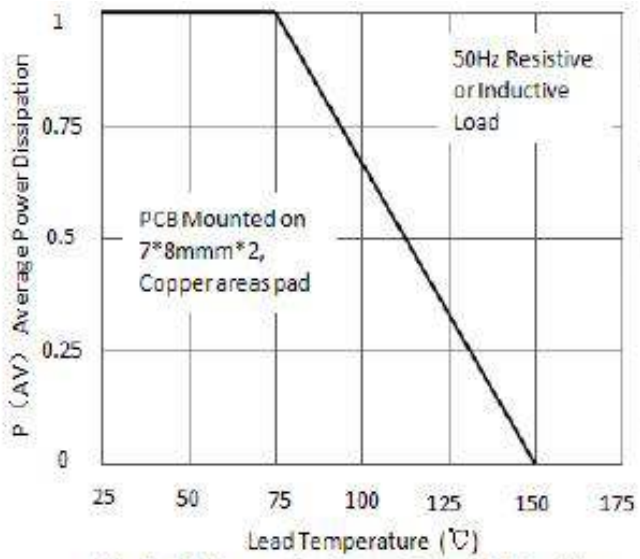

Fig.1 Maximum Continous Power Dissipation

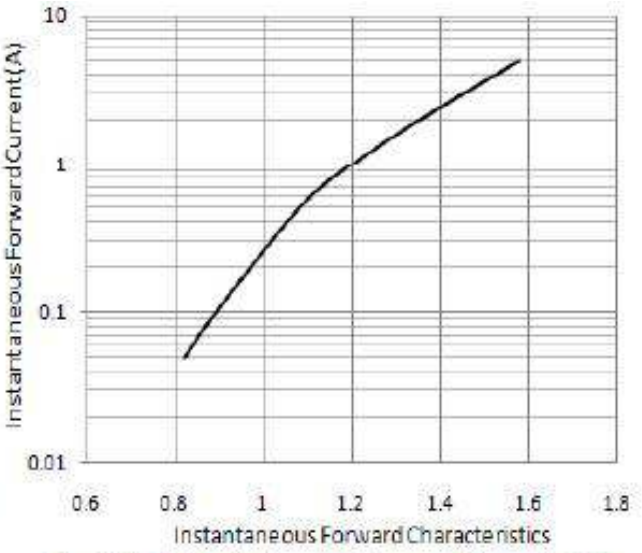

Fig.2 Typical Instantaneous Forward Characteristics

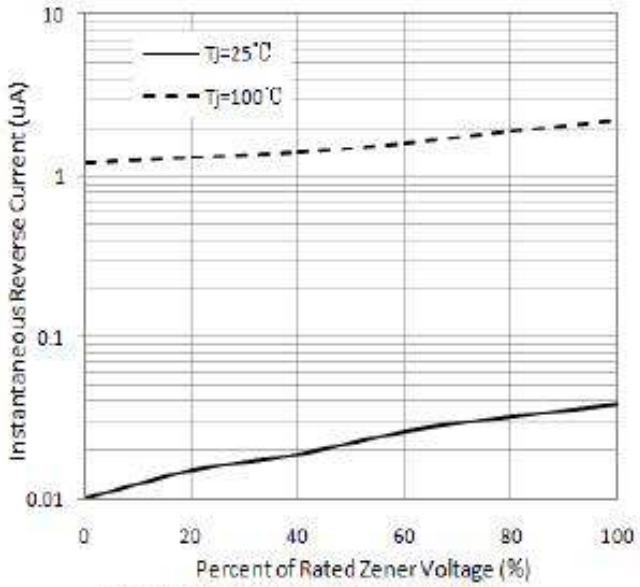

Fig.3 Typical Reverse Characteristics

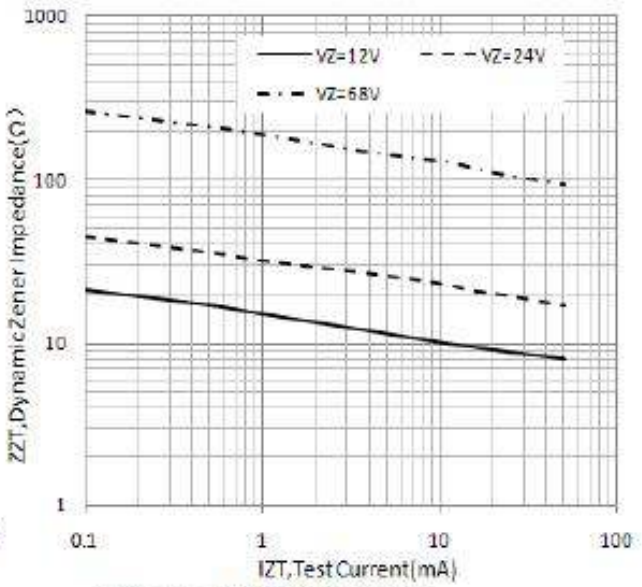

Fig.4 Typical Zener Impedance

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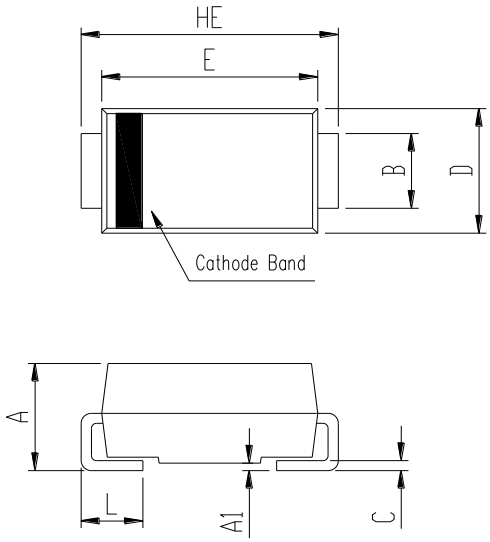
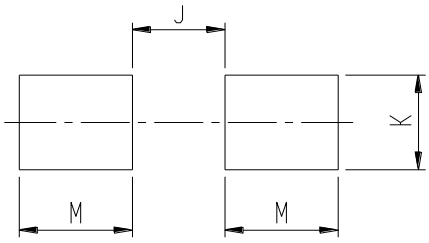
Package Outline Dimensions DO-214AC (SMA)



SMA (DO-214AC)				
DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.90	2.25	0.075	0.089
A1	0.00	0.20	0.000	0.008
B	1.27	1.63	0.050	0.064
C	0.15	0.31	0.006	0.012
D	2.40	2.65	0.094	0.104
E	4.00	4.60	0.157	0.181
HE	4.80	5.20	0.189	0.205
L	0.80	1.50	0.031	0.059

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	-