

1SMA4728A thru GSZ1220A

Surface Mount Zener Diodes
Vz Range: 3.3V to 220V Power Dissipation: 1W

Features

- Photo glass passivated junction
- Ideal for automated placement
- Low inductance
- Typical I_R less than 1 μ A above 11V
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21



DO-214AC (SMA)

Mechanical Data

- Case: DO-214AC (SMA)
- Molding compound meets UL 94V-0 flammability rating
- Moisture sensitivity level: Level 1, per J-STD-020
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked

Applications

For general purpose regulation and protection applications

Maximum Rating ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Forward Voltage @ $I_F=500\text{mA}$	V_F	1.5	V
Total Power Dissipation at $T_A=50^{\circ}\text{C}$, Derate Above 50°C ¹	P_{tot}	1.25	W
Total Power Dissipation at $T_A=75^{\circ}\text{C}$	P_{tot}	1	W
Thermal Resistance, Junction to Lead ¹	$R_{\theta\text{JL}}$	29	$^{\circ}\text{C/W}$
Thermal Resistance, Junction to Ambient ¹	$R_{\theta\text{JA}}$	120	$^{\circ}\text{C/W}$
Thermal Resistance, Junction to Case ¹	$R_{\theta\text{JC}}$	31	$^{\circ}\text{C/W}$
Junction Temperature	T_J	-55 to +150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}\text{C}$

Note:

1. Mounted on 5mm x 5mm Cu pad test board

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Electrical Characteristics

Part Number	Device Marking Code	V _Z @ I _{ZT}			Maximum Zener Impedance				Maximum Leakage Current	
					Z _{ZT} @ I _{ZT}		Z _{ZK} @ I _{ZK}		I _R @ V _R	
		Min. (V)	Nom. (V)	Max. (V)	Ω	mA	Ω	mA	uA	V
1SMA4728A	4728A	3.1	3.3	3.5	10.0	76.0	400	1.00	100	1.0
1SMA4729A	4729A	3.4	3.6	3.8	10.0	69.0	400	1.00	100	1.0
1SMA4730A	4730A	3.7	3.9	4.1	9.0	64.0	400	1.00	50	1.0
1SMA4731A	4731A	4.1	4.3	4.5	9.0	58.0	400	1.00	10	1.0
1SMA4732A	4732A	4.5	4.7	4.9	8.0	53.0	500	1.00	10	1.0
1SMA4733A	4733A	4.8	5.1	5.4	7.0	49.0	550	1.00	10	1.0
1SMA4734A	4734A	5.3	5.6	5.9	5.0	45.0	600	1.00	10	2.0
1SMA4735A	4735A	5.9	6.2	6.5	2.0	41.0	700	1.00	10	3.0
1SMA4736A	4736A	6.5	6.8	7.1	3.5	37.0	700	1.00	10	4.0
1SMA4737A	4737A	7.1	7.5	7.9	4.0	34.0	700	0.50	10	5.0
1SMA4738A	4738A	7.8	8.2	8.6	4.5	31.0	700	0.50	10	6.0
1SMA4739A	4739A	8.6	9.1	9.6	5.0	28.0	700	0.50	10	7.0
1SMA4740A	4740A	9.5	10.0	10.5	7.0	25.0	700	0.25	10	7.6
1SMA4741A	4741A	10.5	11.0	11.6	8.0	23.0	700	0.25	0.1	8.4
1SMA4742A	4742A	11.4	12.0	12.6	9.0	21.0	700	0.25	0.1	9.1
1SMA4743A	4743A	12.4	13.0	13.7	10.0	19.0	700	0.25	0.1	9.9
1SMA4744A	4744A	14.3	15.0	15.8	14.0	17.0	700	0.25	0.1	11.4
1SMA4745A	4745A	15.2	16.0	16.8	16.0	15.5	700	0.25	0.1	12.2
1SMA4746A	4746A	17.1	18.0	18.9	20.0	14.0	750	0.25	0.1	13.7
1SMA4747A	4747A	19.0	20.0	21.0	22.0	12.5	750	0.25	0.1	15.2
1SMA4748A	4748A	20.9	22.0	23.1	23.0	11.5	750	0.25	0.1	16.7
1SMA4749A	4749A	22.8	24.0	25.2	25.0	10.5	750	0.25	0.1	18.2
1SMA4750A	4750A	25.7	27.0	28.4	35.0	9.5	750	0.25	0.1	20.6
1SMA4751A	4751A	28.5	30.0	31.5	40.0	8.5	1000	0.25	0.1	22.8
1SMA4752A	4752A	31.4	33.0	34.7	45.0	7.5	1000	0.25	0.1	25.1
1SMA4753A	4753A	34.2	36.0	37.8	50.0	7.0	1000	0.25	0.1	27.4
1SMA4754A	4754A	37.1	39.0	41	60.0	6.5	1000	0.25	0.1	29.7
1SMA4755A	4755A	40.9	43.0	45.2	70.0	6.0	1500	0.25	0.1	32.7
1SMA4756A	4756A	44.7	47.0	49.4	80.0	5.5	1500	0.25	0.1	35.8
1SMA4757A	4757A	48.5	51.0	53.6	95.0	5.0	1500	0.25	0.1	38.8
1SMA4758A	4758A	53.2	56.0	58.8	110	4.5	2000	0.25	0.1	42.6
1SMA4759A	4759A	58.9	62.0	65.1	125	4.0	2000	0.25	0.1	47.1
1SMA4760A	4760A	64.6	68.0	71.4	150	3.7	2000	0.25	0.1	51.7
1SMA4761A	4761A	71.3	75.0	78.8	175	3.3	2000	0.25	0.1	56.0
1SMA4762A	4762A	77.9	82.0	86.1	200	3.0	3000	0.25	0.1	62.2
1SMA4763A	4763A	86.5	91.0	95.6	250	2.8	3000	0.25	0.1	69.2
1SMA4764A	4764A	95.0	100	105	350	2.5	3000	0.25	0.1	76.0

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

Part Number	Device Marking Code	Nominal Zener Voltage (V _Z @ I _{ZT}) ²			Test Current I _{ZT}	Maximum Dynamic Impedance Resistance			Maximum Reverse Leakage Current		Maximum Surge Current ³ I _{RM}	Maximum DC Zener Current I _{ZM}
		Min	Typ.	Max		Z _{ZT} at I _{ZT}	Z _{ZK} at I _{ZK}	I _{ZK}	I _R	V _R		
		(V)	(V)	(V)		(Ω)	(Ω)	(mA)	(μA)	(V)		
GSZ1110A	1110A	104.50	110.0	115.50	2.3	450.0	4000	0.25	5.0	83.6	40	8.6
GSZ1120A	1120A	114.00	120.0	126.00	2.0	550.0	4500	0.25	5.0	91.2	37	7.8
GSZ1130A	1130A	123.50	130.0	136.50	1.9	700.0	5000	0.25	5.0	98.8	34	7.0
GSZ1150A	1150A	142.50	150.0	157.50	1.7	1000.0	6000	0.25	5.0	114.0	30	6.4
GSZ1160A	1160A	152.00	160.0	168.00	1.6	1100.0	6500	0.25	5.0	121.6	28	5.8
GSZ1180A	1180A	171.00	180.0	189.00	1.4	1200.0	7000	0.25	5.0	136.8	25	5.2
GSZ1200A	1200A	190.00	200.0	210.00	1.2	1900.0	9990	0.25	5.0	152.0	22	4.7
GSZ1220A	1220A	209.00	220.0	231.00	1.0	1600.0	8000	0.25	5.0	167.2	20	4.0

Note:

2. Nominal zener voltage range: 95% Typ.V_Z @ I_{ZT} to 105% Typ.V_Z @ I_{ZT}

3. Surge current is a non-repetitive, 8.3ms pulse width square wave or equivalent sine-wave superimposed on I_{ZT} per JEDEC method

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Ratings and Characteristic Curves ($T_A=25^\circ\text{C}$ unless otherwise specified)

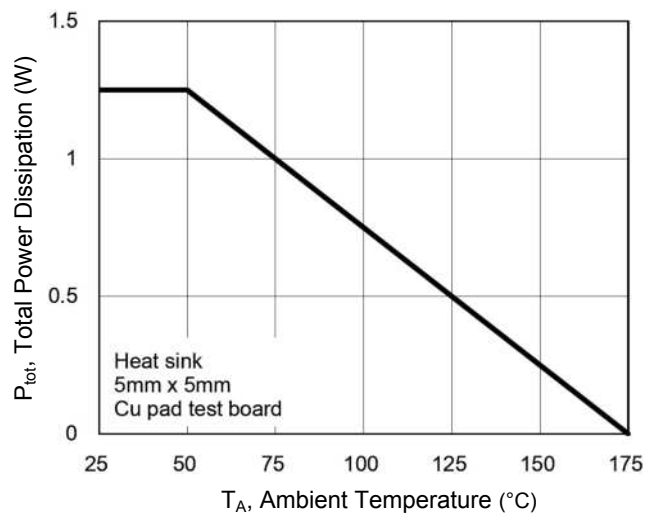


Figure 1. Steady State Power Derating

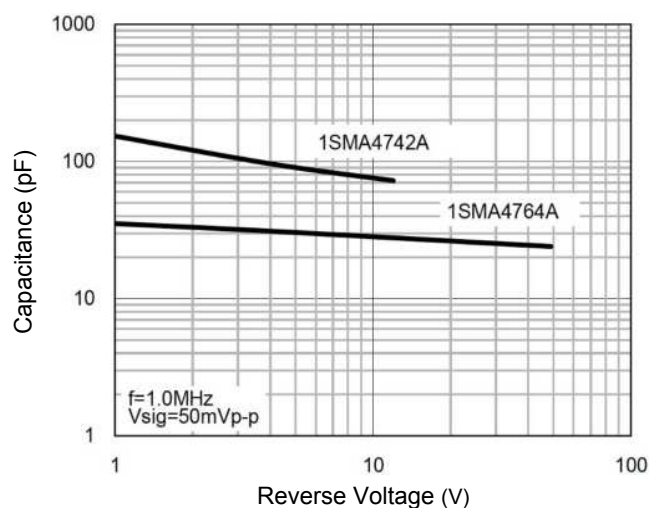


Figure 2. Typical Junction Capacitance

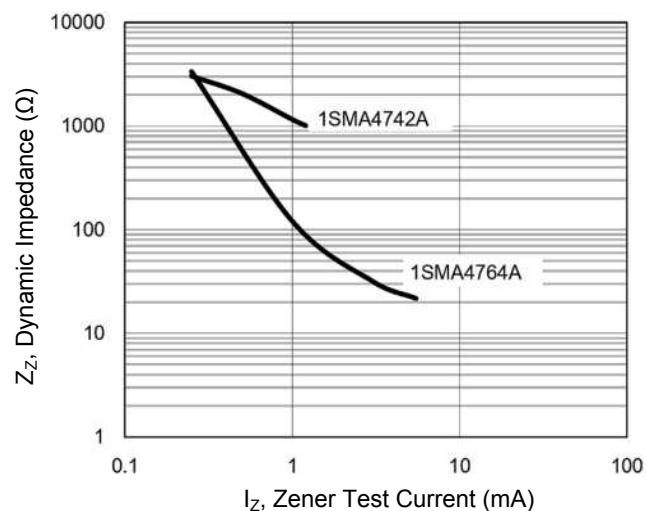


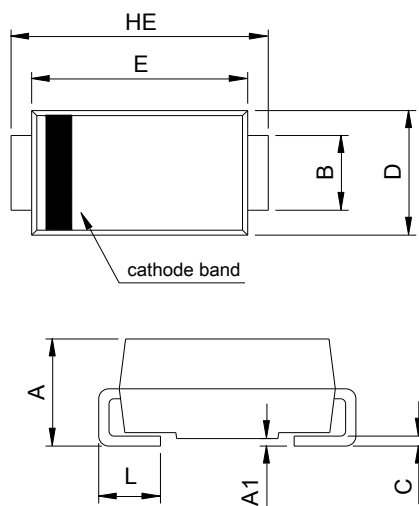
Figure 3. Typical Zener Impedance

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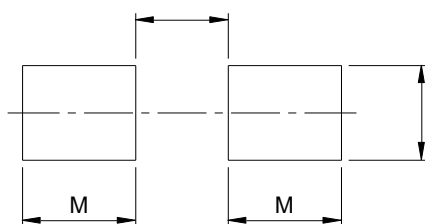
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Package Outline Dimensions DO-214AC (SMA)



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	-

Order Information

Device	Package	Carrier	Quantity
1SMA4728A thru GSZ1220A	DO-214AC (SMA)	Tape & Reel	7,500 Pcs / Reel