

Surface Mount Silicon Zener Diode

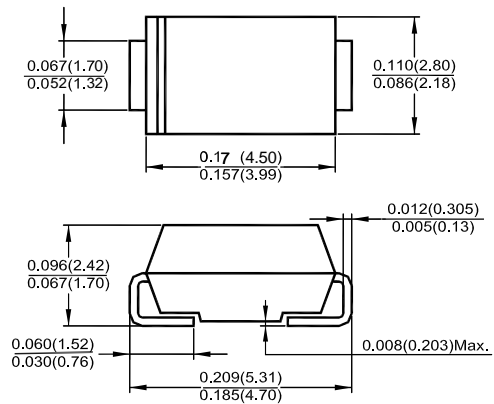
1SMA4728A---1SMA4764A

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 $5.0 \mu A$ above 11V
- ✧ High temperature soldering guaranteed: $260^{\circ}C / 10$ seconds at terminals
- ✧ Plastic package has Underwriters Laboratory Flammability Classification 94V-0

Mechanical Data

- ✧ Case: Molded plastic over passivated junction
- ✧ Terminals: Solder plated solderable per MIL-STD-750, Method 2025
- ✧ Polarity: Color Band denotes positive end (cathode)
- ✧ Standard packaging: 12mm tape (EIA-481)
- ✧ Weight: 0.002 ounces, 0.064 gram



Dimensions in inches and (millimeters)
DO-214AC (SMA)

Maximum Ratings and Electrical Characteristics

Rating at $25^{\circ}C$ ambient temperature unless otherwise specified.

Type Number	Symbol	Value	Units
Peak Power Dissipation at $T_A=50^{\circ}C$, Derate above $50^{\circ}C$ (Note 1)	P_D	1.0 6.67	Watts $mW/^{\circ}C$
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (Note 2)	I_{FSM}	10.0	Amps
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	$^{\circ}C$

Notes: 1. Mounted on $5.0mm^2$ (0.013mm thick) land areas.

2. Measured on 8.3ms Single Half Sine-wave or Equivalent Square Wave,
Duty Cycle=4 Pulses Per Minute Maximum.

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ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

Type	Device Marking	Nominal Zener Voltage		Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current	Maximum Surge Current
		$V_Z @ I_{ZT}$	I_{ZT}	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	I_{ZK}	$I_R @ V_R$		I_{ZM}	$I_{RM}^{(2)}$
		(V)	(mA)	(Ω)	(Ω)	(mA)	(μ A)	(V)	(mA)	(mApk)
1SMA4728A	728A	3.3	76.0	10	400	1.0	100	1.0	276	1380
1SMA4729A	729A	3.6	69.0	10	400	1.0	100	1.0	252	1260
1SMA4730A	730A	3.9	64.0	9.0	400	1.0	50	1.0	234	1190
1SMA4731A	731A	4.3	58.0	9.0	400	1.0	10	1.0	217	1070
1SMA4732A	732A	4.7	53.0	8.0	500	1.0	10	1.0	193	970
1SMA4733A	733A	5.1	49.0	7.0	550	1.0	10	1.0	178	890
1SMA4734A	734A	5.6	45.0	5.0	600	1.0	10	2.0	162	810
1SMA4735A	735A	6.2	41.0	2.0	700	1.0	10	3.0	146	730
1SMA4736A	736A	6.8	37.0	3.5	700	1.0	10	4.0	133	660
1SMA4737A	737A	7.5	34.0	4.0	700	0.5	10	5.0	121	605
1SMA4738A	738A	8.2	31.0	4.5	700	0.5	10	6.0	110	550
1SMA4739A	739A	9.1	28.0	5.0	700	0.5	10	7.0	100	500
1SMA4740A	740A	10	25.0	7.0	700	0.25	10	7.6	91	454
1SMA4741A	741A	11	23.0	8.0	700	0.25	5.0	8.4	83	414
1SMA4742A	742A	12	21.0	9.0	700	0.25	5.0	9.1	76	380
1SMA4743A	743A	13	19.0	10	700	0.25	5.0	9.9	69	344
1SMA4744A	744A	15	17.0	14	700	0.25	5.0	11.4	61	305
1SMA4745A	745A	16	15.5	16	700	0.25	5.0	12.2	57	285
1SMA4746A	746A	18	14.0	20	750	0.25	5.0	13.7	50	250
1SMA4747A	747A	20	12.5	22	750	0.25	5.0	15.2	45	225
1SMA4748A	748A	22	11.5	23	750	0.25	5.0	16.7	41	205
1SMA4749A	749A	24	10.5	25	750	0.25	5.0	18.2	38	190
1SMA4750A	750A	27	9.5	35	750	0.25	5.0	20.6	34	170
1SMA4751A	751A	30	8.5	40	1000	0.25	5.0	22.8	30	150
1SMA4752A	752A	33	7.5	45	1000	0.25	5.0	25.1	27	135
1SMA4753A	753A	36	7.0	50	1000	0.25	5.0	27.4	25	125
1SMA4754A	754A	39	6.5	60	1000	0.25	5.0	29.7	23	115
1SMA4755A	755A	43	6.0	70	1500	0.25	5.0	32.7	22	110
1SMA4756A	756A	47	5.5	80	1500	0.25	5.0	35.8	19	95
1SMA4757A	757A	51	5.0	95	1500	0.25	5.0	38.8	18	90
1SMA4758A	758A	56	4.5	110	2000	0.25	5.0	42.6	16	80
1SMA4759A	759A	62	4.0	125	2000	0.25	5.0	47.1	14	70
1SMA4760A	760A	68	3.7	150	2000	0.25	5.0	51.7	13	65
1SMA4761A	761A	75	3.3	175	2000	0.25	5.0	56.0	12	60
1SMA4762A	762A	82	3.0	200	3000	0.25	5.0	62.2	11	55
1SMA4763A	763A	91	2.8	250	3000	0.25	5.0	69.2	10	50
1SMA4764A	764A	100	2.5	350	3000	0.25	5.0	76.0	9.0	45

Notes :

 (1) The type number listed have a standard tolerance on the nominal zener voltage of $\pm 5\%$.

 (2) The reverse 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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FIG.1- POWER TEMPERATURE DERATING CURVE

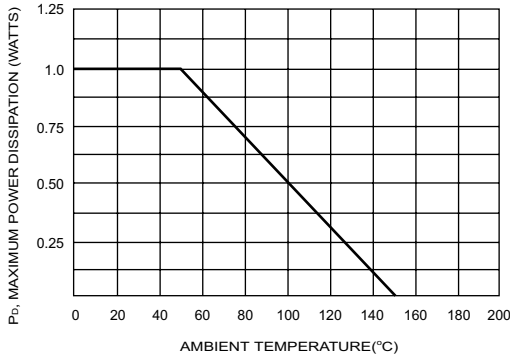


FIG.2- TYPICAL FORWARD CHARACTERISTICS

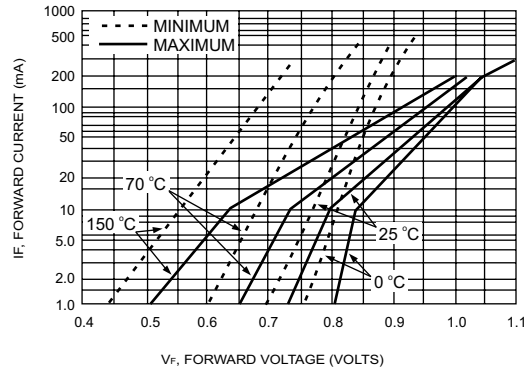


FIG.3- EFFECT OF ZENER CURRENT ON ZENER IMPEDANCE

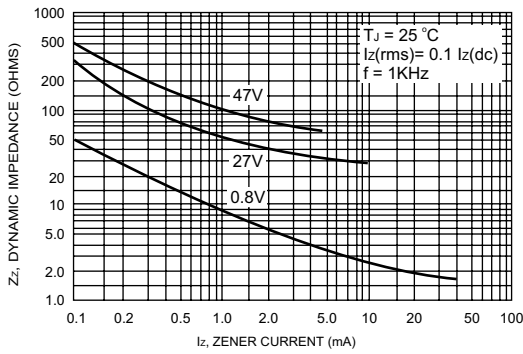


FIG.5- TYPICAL LEAKAGE CURRENT

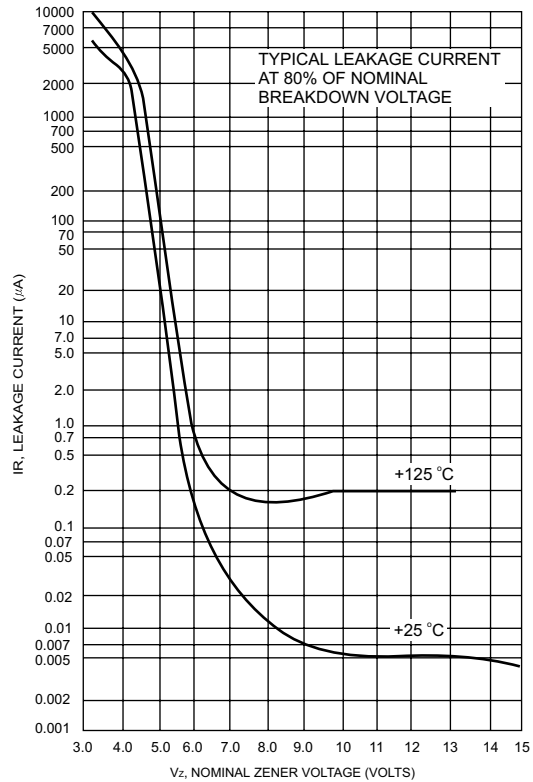
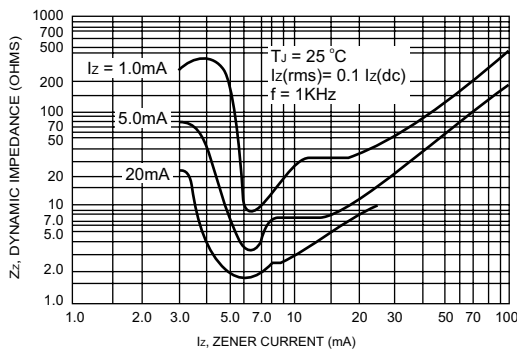


FIG.4- EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE



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FIG.6- TYPICAL CAPACITANCE versus V_z

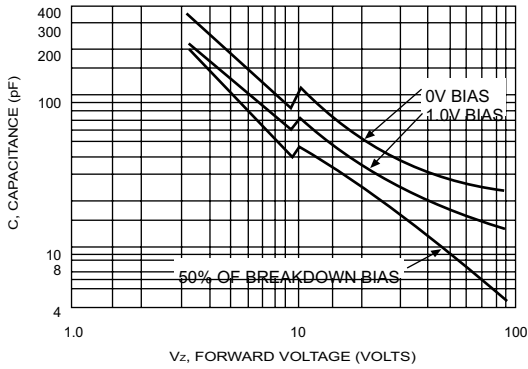


FIG.7- TEMPERATURE COEFFICIENTS

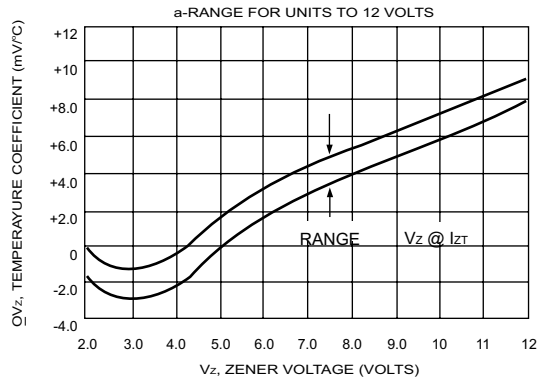


FIG.8- TEMPERATURE COEFFICIENTS

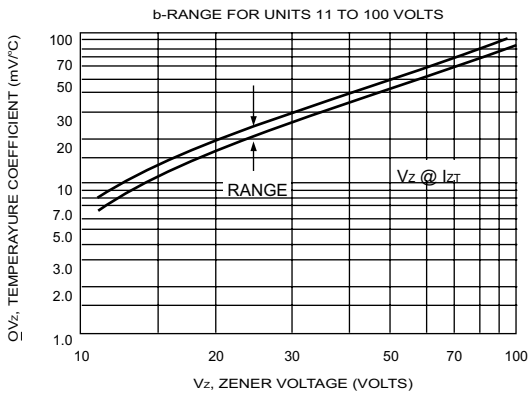


FIG.9- EFFECT OF ZENER CURRENT

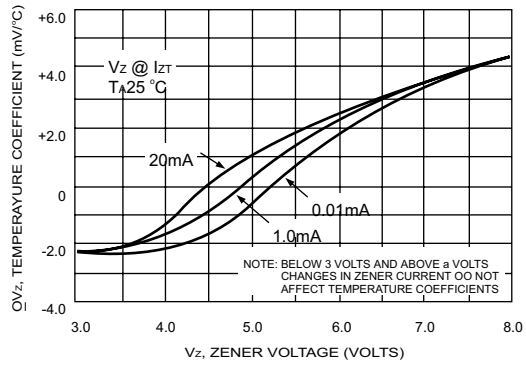


FIG.10- MAXIMUM SURGE POWER

