

IV. Zener Diode

SMD Zener Diode (1.0 Watt) 1SMA4728~1SMA200A

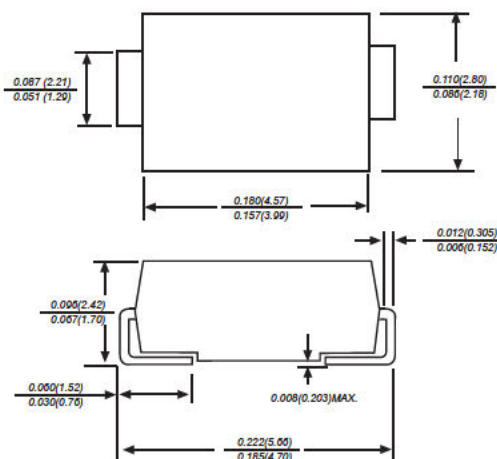
(Package: SMA (DO-214AC))

FEATURES

- For surface mounted applications in order to optimize board space.
- 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 2026
- Polarity : Color band denotes cathode
- Weight : 0.058 grams



Case: SMA
Dimensions in inches and (millimeters)

Ratings & Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.			
Rating	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, 8.3ms single half sine-wave superimposed on rated load (JEDEC method) (Note 2)	I_{FSM}	10.0	Amps
Maximum forward voltage at $I_F = 200mA$	V_F	1.2	Volts
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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Type Number	Marking Code	V _Z @ I _{ZT}			Maximum Zener Impedance				Maximum Leakage Current	
					Z _{ZT} @ I _{ZT}		Z _{ZK} @ I _{ZK}		I _R @ V _R	
		Nom. V	Min. V	Max. V	Ohms	mA	Ohms	mA	µA	Volts
1SMA4728	728A	3.3	3.1	3.5	10.0	76.0	400	1.00	100	1.0
1SMA4729	729A	3.6	3.4	3.8	10.0	69.0	400	1.00	100	1.0
1SMA4730	730A	3.9	3.7	4.1	9.0	64.0	400	1.00	50	1.0
1SMA4731	731A	4.3	4.1	4.5	9.0	58.0	400	1.00	10	1.0
1SMA4732	732A	4.7	4.5	4.9	8.0	53.0	500	1.00	10	1.0
1SMA4733	733A	5.1	4.8	5.4	7.0	49.0	550	1.00	10	1.0
1SMA4734	734A	5.6	5.3	5.9	5.0	45.0	600	1.00	10	2.0
1SMA4735	735A	6.2	5.9	6.5	2.0	41.0	700	1.00	10	3.0
1SMA4736	736A	6.8	6.5	7.1	3.5	37.0	700	1.00	10	4.0
1SMA4737	737A	7.5	7.1	7.9	4.0	34.0	700	0.50	10	5.0
1SMA4738	738A	8.2	7.8	8.6	4.5	31.0	700	0.50	10	6.0
1SMA4739	739A	9.1	8.6	9.6	5.0	28.0	700	0.50	10	7.0
1SMA4740	740A	10.0	9.5	10.5	7.0	25.0	700	0.25	10	7.6
1SMA4741	741A	11.0	10.5	11.6	8.0	23.0	700	0.25	5.0	8.4
1SMA4742	742A	12.0	11.4	12.6	9.0	21.0	700	0.25	5.0	9.1
1SMA4743	743A	13.0	12.4	13.7	10.0	19.0	700	0.25	5.0	9.9
1SMA4744	744A	15.0	14.3	15.8	14.0	17.0	700	0.25	5.0	11.4
1SMA4745	745A	16.0	15.2	16.8	16.0	15.5	700	0.25	5.0	12.2
1SMA4746	746A	18.0	17.1	18.9	20.0	14.0	750	0.25	5.0	13.7
1SMA4747	747A	20.0	19.0	21.0	22.0	12.5	750	0.25	5.0	15.2
1SMA4748	748A	22.0	20.9	23.1	23.0	11.5	750	0.25	5.0	16.7
1SMA4749	749A	24.0	22.8	25.2	25.0	10.5	750	0.25	5.0	18.2
1SMA4750	750A	27.0	25.7	28.4	35.0	9.5	750	0.25	5.0	20.6
1SMA4751	751A	30.0	28.5	31.5	40.0	8.5	1000	0.25	5.0	22.8
1SMA4752	752A	33.0	31.4	34.7	45.0	7.5	1000	0.25	5.0	25.1
1SMA4753	753A	36.0	34.2	37.8	50.0	7.0	1000	0.25	5.0	27.4
1SMA4754	754A	39.0	37.1	41.0	60.0	6.5	1000	0.25	5.0	29.7
1SMA4755	755A	43.0	40.9	45.2	70.0	6.0	1500	0.25	5.0	32.7
1SMA4756	756A	47.0	44.7	49.4	80.0	5.5	1500	0.25	5.0	35.8
1SMA4757	757A	51.0	48.5	53.6	95.0	5.0	1500	0.25	5.0	38.8
1SMA4758	758A	56.0	53.2	58.8	110	4.5	2000	0.25	5.0	42.6
1SMA4759	759A	62.0	58.9	65.1	125	4.0	2000	0.25	5.0	47.1
1SMA4760	760A	68.0	64.6	71.4	150	3.7	2000	0.25	5.0	51.7
1SMA4761	761A	75.0	71.3	78.8	175	3.3	2000	0.25	5.0	56.0
1SMA4762	762A	82.0	77.9	86.1	200	3.0	3000	0.25	5.0	62.2
1SMA4763	763A	91.0	86.5	95.6	250	2.8	3000	0.25	5.0	69.2
1SMA4764	764A	100	95.0	105.0	350	2.5	3000	0.25	5.0	76.0
1SMA110A	110A	110	104.5	115.5	450	2.3	4000	0.25	5.0	83.6
1SMA120A	120A	120	114.0	126.0	550	2.0	4500	0.25	5.0	91.2
1SMA130A	130A	130	123.5	136.5	700	1.9	5000	0.25	5.0	98.8
1SMA150A	150A	150	142.5	157.5	1000	1.7	6000	0.25	5.0	114.0
1SMA160A	160A	160	152.0	168.0	1100	1.6	6500	0.25	5.0	121.6
1SMA180A	180A	180	171.0	189.0	1200	1.4	7000	0.25	5.0	136.8
1SMA200A	200A	200	190.0	210.0	1500	1.2	8000	0.25	5.0	152.0

Ratings and Characteristic Curves of 1SMA4728~1SMA200A

FIG.1 POWER TEMPERATURE DERATING CURVE

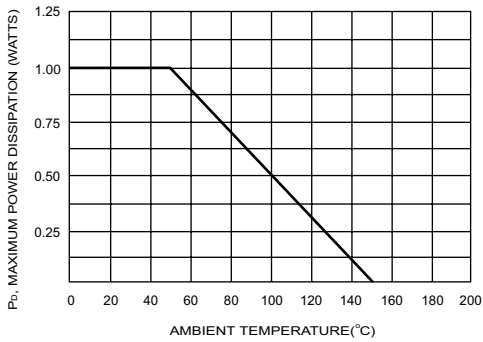


FIG.2 TYPICAL FORWARD CHARACTERISTICS

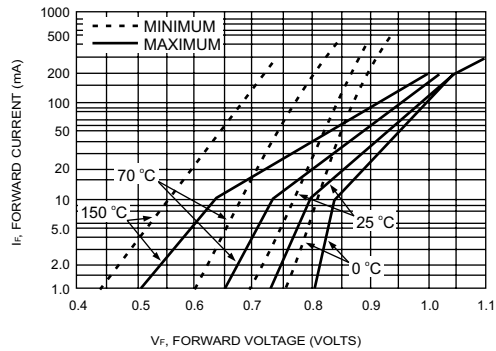


FIG.3 EFFECT OF ZENER CURRENT ON ZENER IMPEDANCE

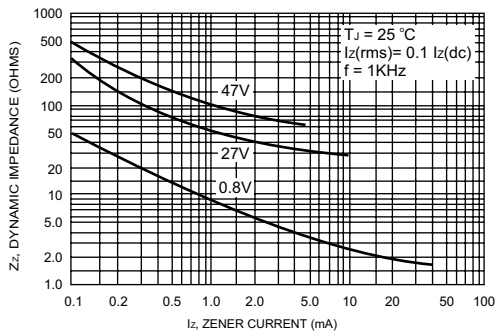


FIG.5 TYPICAL LEAKAGE CURRENT

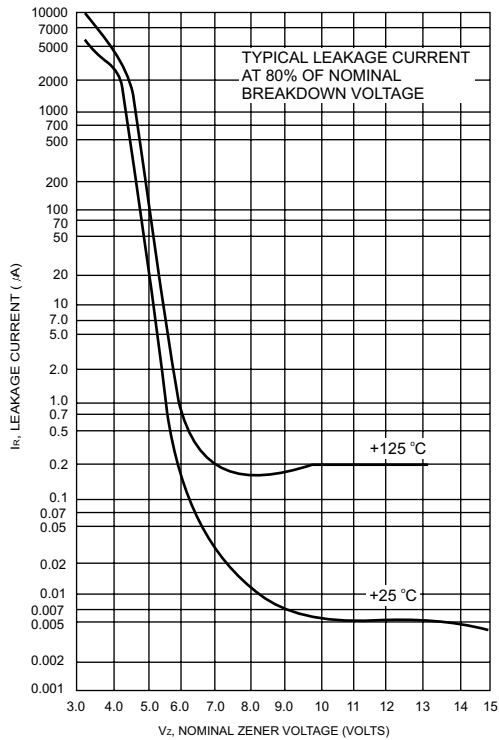


FIG.4 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

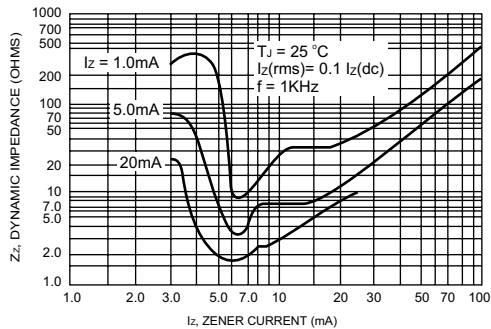


FIG.6 TYPICAL CAPACITANCE versus Vz

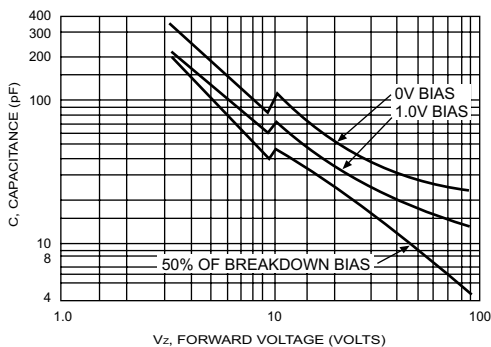


FIG.7 TEMPERATURE COEFFICIENTS

