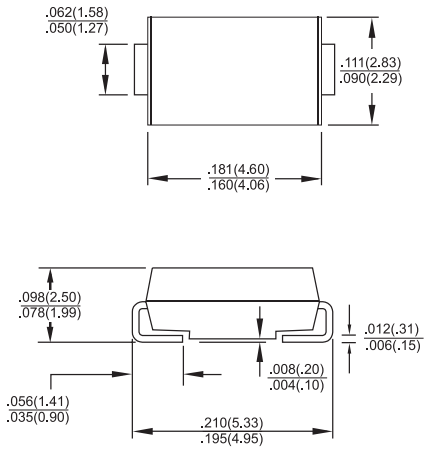
TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

1SMA5926 - 1SMA5956

1.5 Watts Surface Mount Silicon Zener Diode

SMA/DO-214AC



Dimensions in inches and (millimeters)

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 0.5μA above 11V
- ✧ High temperature soldering guaranteed: 260°C / 10 seconds at terminals
- ✧ Plastic package has Underwriters Laboratory Flammability Classification 94V-0

Mechanical Data

- ✧ Case: Molded plastic over passivated junction
- ✧ Terminals: Pure tin plated lead free,, solderable per MIL-STD-750, Method 2026
- ✧ Polarity: Color Band denotes positive end (cathode)
- ✧ Standard packaging: 12mm tape (EIA-481)
- ✧ Weight: 0.002 ounces, 0.064 gram

Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Type Number	Symbol	Value	Units
DC Power Dissipation at T_L=75°C, measure at Zero Lead Length (Note 1) Derate above 75 °C	P_D	1.5 20	Watts mW/ °C
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (Note 1, 2)	I_{FSM}	10.0	Amps
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	°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.

ELECTRICAL CHARACTERISTICS

(TA=25°C unless otherwise noted) V_F=1.5V max, I_F=200mA for all types.

Device (Note 1)	Device Marking Code	Nominal Zener Voltage V_Z @ I_{zt}			Test Current I_{ZT}	Zener Impedance			Leakage Current		Maximum DC Zener Current I_{ZM}
		Min	Nom	Max		Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}		I_R @ V_R		
		V	V(Notes 2)	V	mA	Ohms	Ohms	mA	uA	Volts	mA (dc)
1SMA5926	926A	10.45	11	11.55	34.1	5.5	550	0.25	0.5	8.4	136
1SMA5927	927A	11.40	12	12.60	31.2	6.5	550	0.25	0.5	9.1	125
1SMA5928	928A	12.35	13	13.65	28.8	7.0	550	0.25	0.5	9.9	115
1SMA5929	929A	14.25	15	15.75	25.0	9.0	600	0.25	0.5	11.4	100
1SMA5930	930A	15.20	16	16.80	23.4	10.0	600	0.25	0.5	12.2	94
1SMA5931	931A	17.10	18	18.90	20.8	12	650	0.25	0.5	13.7	83
1SMA5932	932A	19.00	20	21.00	18.7	14	650	0.25	0.5	15.2	75
1SMA5933	933A	20.90	22	23.10	17.0	17.5	650	0.25	0.5	16.7	68
1SMA5934	934A	22.80	24	25.20	15.6	19	700	0.25	0.5	18.2	63
1SMA5935	935A	25.65	27	28.35	13.9	23	700	0.25	0.5	20.6	56
1SMA5936	936A	28.50	30	31.50	12.5	26	750	0.25	0.5	22.8	50
1SMA5937	937A	31.35	33	34.65	11.4	33	800	0.25	0.5	25.1	45
1SMA5938	938A	34.20	36	37.80	10.4	38	850	0.25	0.5	27.4	42
1SMA5939	939A	37.05	39	40.95	9.6	45	900	0.25	0.5	29.7	38
1SMA5940	940A	40.85	43	45.15	8.7	53	950	0.25	0.5	32.7	35
1SMA5941	941A	44.65	47	49.35	8.0	67	1000	0.25	0.5	35.8	32
1SMA5942	942A	48.45	51	53.55	7.3	70	1100	0.25	0.5	38.8	29
1SMA5943	943A	53.20	56	58.80	6.7	86	1300	0.25	0.5	42.6	27
1SMA5944	944A	58.90	62	65.10	6.0	100	1500	0.25	0.5	47.1	24
1SMA5945	945A	64.60	68	71.40	5.5	120	1700	0.25	0.5	51.7	22
1SMA5946	946A	71.25	75	78.75	5.0	140	2000	0.25	0.5	56.0	20
1SMA5947	947A	77.90	82	86.10	4.6	160	2500	0.25	0.5	62.2	18
1SMA5948	948A	86.45	91	95.55	4.1	200	300	0.25	0.5	69.2	16
1SMA5949	949A	95.00	100	105.00	3.7	250	3100	0.25	0.5	76.0	15
1SMA5950	950A	104.5	110	115.50	3.4	300	4000	0.25	0.5	83.6	13
1SMA5951	951A	114.0	120	126.00	3.1	360	4500	0.25	0.5	91.2	12
1SMA5952	952A	123.5	130	136.50	2.9	450	5000	0.25	0.5	98.8	11
1SMA5953	953A	142.5	150	157.50	2.5	600	6000	0.25	0.5	114.0	10
1SMA5954	954A	152.0	160	168.00	2.3	700	6500	0.25	0.5	121.6	9
1SMA5955	955A	171.0	180	189.00	2.1	900	7000	0.25	0.5	136.8	8
1SMA5956	956A	190.0	200	210.00	1.9	1200	8000	0.25	0.5	152.0	7

Notes:

1. **Tolerance and Voltage Regulation Designation - the type number listed indicates a tolerance of ±5%.**
2. **VZ limits are to be guaranteed at thermal equilibrium.**

RATINGS AND CHARACTERISTIC CURVES (1SMA5926 THRU 1SMA5956)

FIG.1- STEADY STATE POWER DERATING

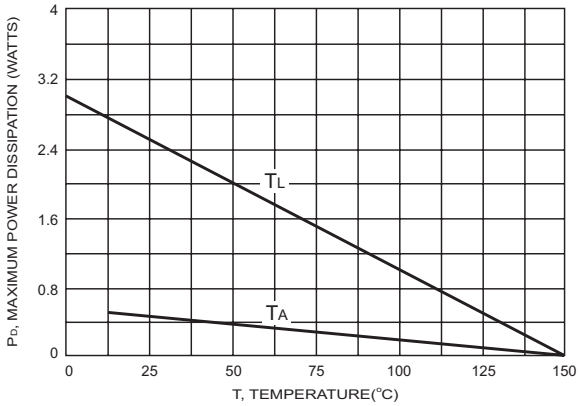


FIG.2- VZ = 12 THRU 68 VOLTS

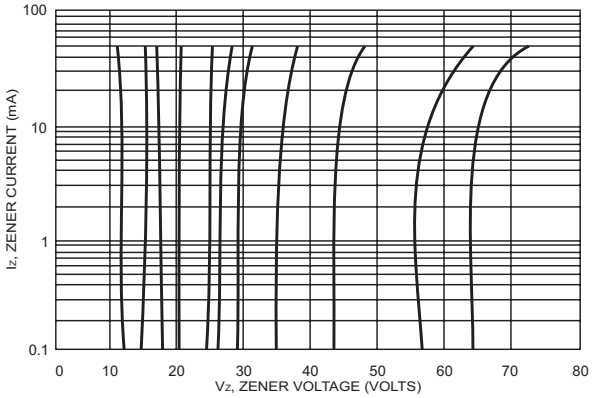


FIG.3- ZENER VOLTAGE - 14 TO 68 VOLTS

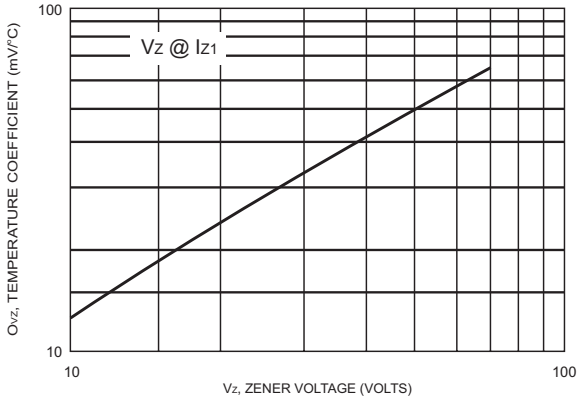


FIG.4- EFFECT OF ZENER VOLTAGE

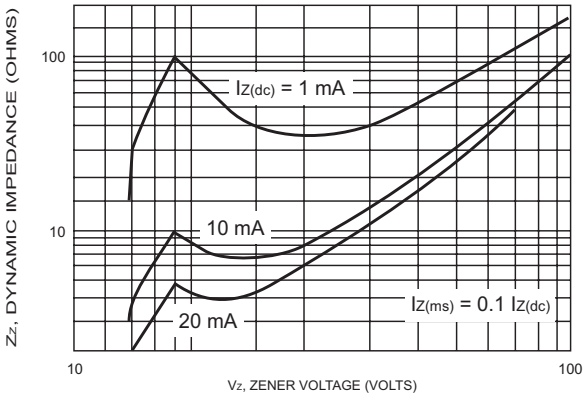


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FIG.5- CAPACITANCE CURVE

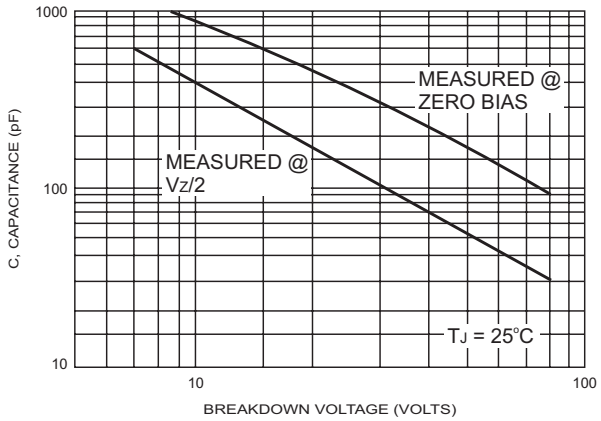

FIG.6- TYPICAL PULSE RATING CURVE

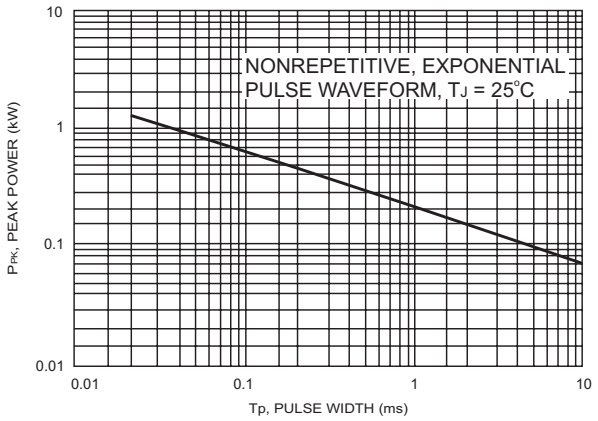

FIG.7- PULSE WAVEFORM

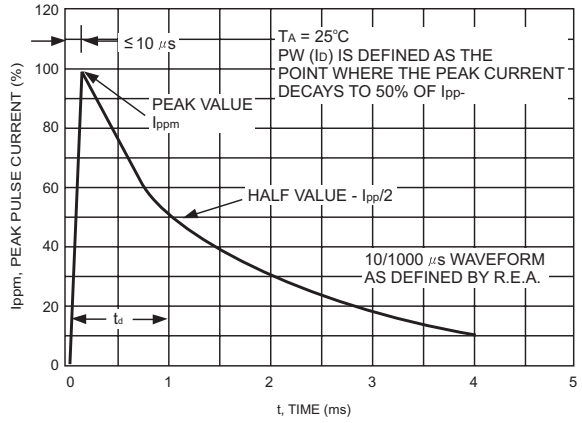

FIG.8- PULSE WAVEFORM