



1SMA5926 THRU 1SMA5945

Surface Mount Silicon Zener Diode



Voltage Range
11 to 68 Volts
1.5 Watts Peak Power

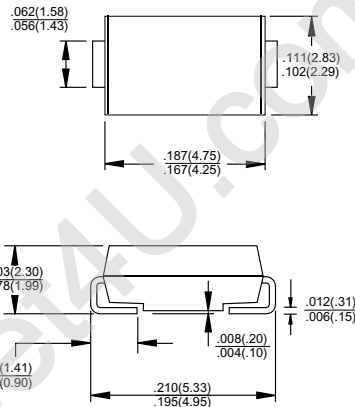
Features

- ✧ 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 $0.5 \mu A$ 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: Solder plated, 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

SMA/DO-214AC



Dimensions in inches and (millimeters)

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

| Type Number | Symbol | Value | Units |
|--|----------------|--------------|-------------------------|
| DC Power Dissipation at $T_L=75^\circ C$, measure at Zero Lead Length (Note 1) Derate above $75^\circ C$ | P_D | 1.5 20 | Watts mW/ $^\circ C$ |
| 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 | $^\circ C$ |

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.

ELECTRICAL CHARACTERISTICS

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

| Device (Note 1) | Device Marking Code | Nominal Zener Voltage Vz @ Izt Voltage (Notes 2) | Test Current IZT mA | Zener Impedance | | | Leakage Current | | Maximum DC Zener Current IZM mA (dc) |
|--------------------|---------------------------|--|------------------------------|-----------------|-----------|------|-----------------|-------|--|
| | | | | ZZT @ IZT | ZZK @ IZK | | IR @ VR | | |
| | | | | Ohms | Ohms | mA | uA | Volts | |
| 1SMA5926 | 926A | 11 | 34.1 | 5.5 | 550 | 0.25 | 0.5 | 8.4 | 136 |
| 1SMA5927 | 927A | 12 | 31.2 | 6.5 | 550 | 0.25 | 0.5 | 9.1 | 125 |
| 1SMA5928 | 928A | 13 | 28.8 | 7.0 | 550 | 0.25 | 0.5 | 9.9 | 115 |
| 1SMA5929 | 929A | 15 | 25.0 | 9.0 | 600 | 0.25 | 0.5 | 11.4 | 100 |
| 1SMA5930 | 930A | 16 | 23.4 | 10.0 | 600 | 0.25 | 0.5 | 12.2 | 94 |
| 1SMA5931 | 931A | 18 | 20.8 | 12 | 650 | 0.25 | 0.5 | 13.7 | 83 |
| 1SMA5932 | 932A | 20 | 18.7 | 14 | 650 | 0.25 | 0.5 | 15.2 | 75 |
| 1SMA5933 | 933A | 22 | 17.0 | 17.5 | 650 | 0.25 | 0.5 | 16.7 | 68 |
| 1SMA5934 | 934A | 24 | 15.6 | 19 | 700 | 0.25 | 0.5 | 18.2 | 63 |
| 1SMA5935 | 935A | 27 | 13.9 | 23 | 700 | 0.25 | 0.5 | 20.6 | 56 |
| 1SMA5936 | 936A | 30 | 12.5 | 26 | 750 | 0.25 | 0.5 | 22.8 | 50 |
| 1SMA5937 | 937A | 33 | 11.4 | 33 | 800 | 0.25 | 0.5 | 25.1 | 45 |
| 1SMA5938 | 938A | 36 | 10.4 | 38 | 850 | 0.25 | 0.5 | 27.4 | 42 |
| 1SMA5939 | 939A | 39 | 9.6 | 45 | 900 | 0.25 | 0.5 | 29.7 | 38 |
| 1SMA5940 | 940A | 43 | 8.7 | 53 | 950 | 0.25 | 0.5 | 32.7 | 35 |
| 1SMA5941 | 941A | 47 | 8.0 | 67 | 1000 | 0.25 | 0.5 | 35.8 | 32 |
| 1SMA5942 | 942A | 51 | 7.3 | 70 | 1100 | 0.25 | 0.5 | 38.8 | 29 |
| 1SMA5943 | 943A | 56 | 6.7 | 86 | 1300 | 0.25 | 0.5 | 42.6 | 27 |
| 1SMA5944 | 944A | 62 | 6.0 | 100 | 1500 | 0.25 | 0.5 | 47.1 | 24 |
| 1SMA5945 | 945A | 68 | 5.5 | 120.0 | 1700 | 0.25 | 0.5 | 51.7 | 22 |

Notes: 1: Tolerance and Voltage Regulation Designation - the type number listed indicates a tolerance of $\pm 5\%$.

2: VZ limits are to be guaranteed at thermal equilibrium.

RATINGS AND CHARACTERISTIC CURVES (1SMA5926 THRU 1SMA5945)

FIG.1- STEADY STATE POWER DERATING

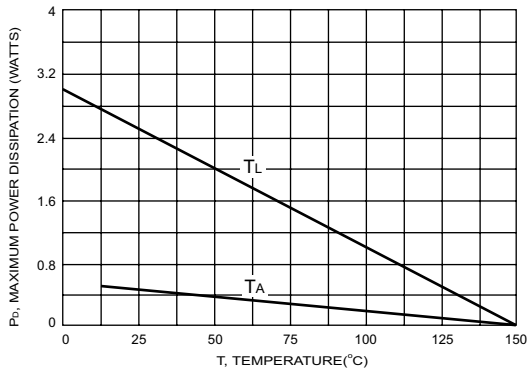


FIG.2- $V_Z = 12$ THRU 68 VOLTS

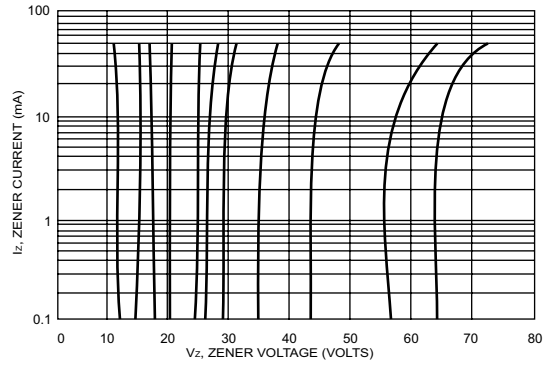


FIG.3- ZENER VOLTAGE - 14 TO 68 VOLTS

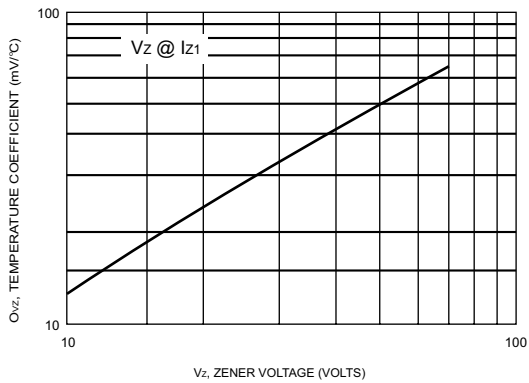
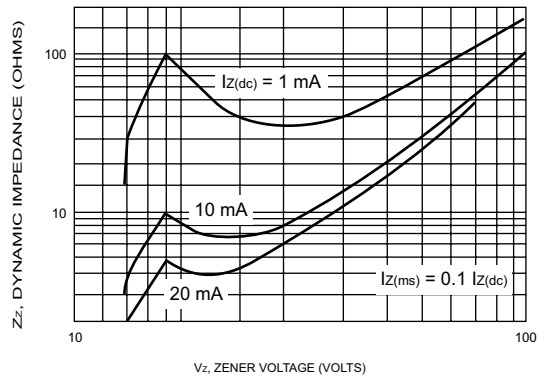


FIG.4- EFFECT OF ZENER VOLTAGE



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FIG.5- CAPACITANCE CURVE

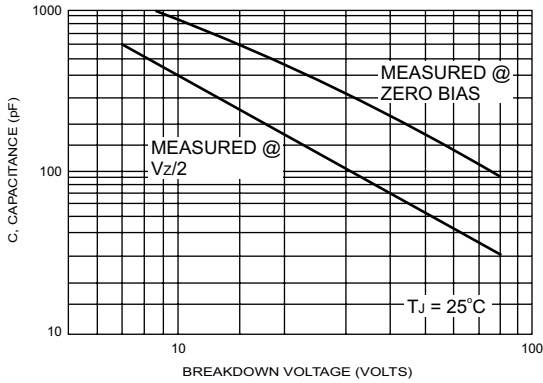


FIG.6- TYPICAL PULSE RATING CURVE

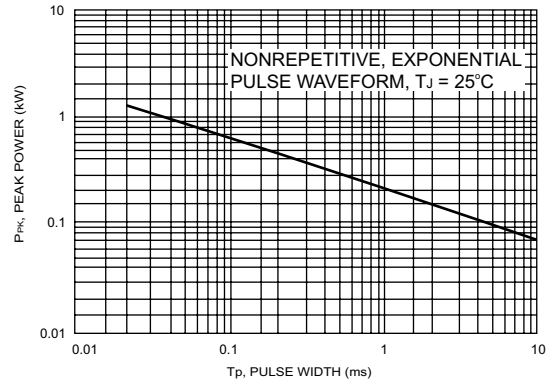


FIG.7- PULSE WAVEFORM

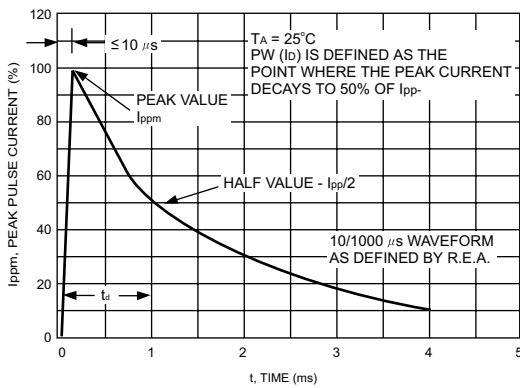


FIG.8- PULSE WAVEFORM

