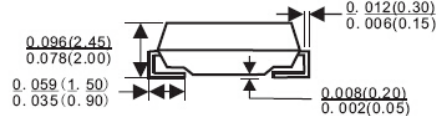
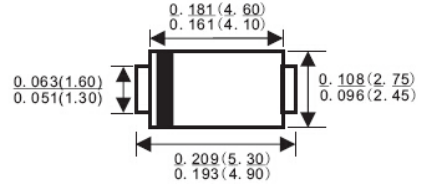




## FEATURE

- ◆ 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°C / 10 seconds at terminals
- ◆ Plastic package has Underwriters Laboratory  
Flammability Classification 94V-0

## SMA/DO-214AC



Dimensions in inches and (millimeters)

## MECHANICAL DATA

**Case:** Molded plastic over passivated junction

**Terminals:** Plated leads, solderable per MIL-STD 750,  
method 2025

**Polarity:** Color band denotes cathode end

**Standard packaging:** 12mm tape (EIA-481)

**Weight:** 0.002 ounce, 0.07 gram

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

| MDD Catalog Number                                                                                                | SYMBOLS        | VALUE        | UNITS                   |
|-------------------------------------------------------------------------------------------------------------------|----------------|--------------|-------------------------|
| Peak Power Dissipation at $T_A=50^\circ C$ ,<br>Derate above $50^\circ C$ (Note 1)                                | $P_D$          | 1.0<br>6.67  | Watts<br>mW/ $^\circ C$ |
| Peak Forward Surge Current, 8.3 ms Single Half<br>Sine-wave Superimposed on Rated Load<br>(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.

| ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted) VF=1.2V max, IF=200mA for all types. |                                  |        |        |                                   |      |                                   |      |                                 |       |         |
|--------------------------------------------------------------------------------------------------|----------------------------------|--------|--------|-----------------------------------|------|-----------------------------------|------|---------------------------------|-------|---------|
| Part Number                                                                                      | V <sub>Z</sub> @ I <sub>ZT</sub> |        |        | Maximum Zener Impedance           |      |                                   |      | Maximum Leakage Current         |       | Package |
|                                                                                                  |                                  |        |        | Z <sub>ZT</sub> @ I <sub>ZT</sub> |      | Z <sub>ZK</sub> @ I <sub>ZK</sub> |      | I <sub>R</sub> @ V <sub>R</sub> |       |         |
|                                                                                                  | Nom. V                           | Min. V | Max. V | Ω                                 | mA   | Ω                                 | mA   | μA                              | V     |         |
| 1.0 Watt ZENER Diodes -- continued                                                               |                                  |        |        |                                   |      |                                   |      |                                 |       |         |
| 1SMA4728A                                                                                        | 3.3                              | 3.1    | 3.5    | 10.0                              | 76.0 | 400                               | 1.00 | 100                             | 1.0   | SMA     |
| 1SMA4729A                                                                                        | 3.6                              | 3.4    | 3.8    | 10.0                              | 69.0 | 400                               | 1.00 | 100                             | 1.0   | SMA     |
| 1SMA4730A                                                                                        | 3.9                              | 3.7    | 4.1    | 9.0                               | 64.0 | 400                               | 1.00 | 50                              | 1.0   | SMA     |
| 1SMA4731A                                                                                        | 4.3                              | 4.1    | 4.5    | 9.0                               | 58.0 | 400                               | 1.00 | 10                              | 1.0   | SMA     |
| 1SMA4732A                                                                                        | 4.7                              | 4.5    | 4.9    | 8.0                               | 53.0 | 500                               | 1.00 | 10                              | 1.0   | SMA     |
| 1SMA4733A                                                                                        | 5.1                              | 4.8    | 5.4    | 7.0                               | 49.0 | 550                               | 1.00 | 10                              | 1.0   | SMA     |
| 1SMA4734A                                                                                        | 5.6                              | 5.3    | 5.9    | 5.0                               | 45.0 | 600                               | 1.00 | 10                              | 2.0   | SMA     |
| 1SMA4735A                                                                                        | 6.2                              | 5.9    | 6.5    | 2.0                               | 41.0 | 700                               | 1.00 | 10                              | 3.0   | SMA     |
| 1SMA4736A                                                                                        | 6.8                              | 6.5    | 7.1    | 3.5                               | 37.0 | 700                               | 1.00 | 10                              | 4.0   | SMA     |
| 1SMA4737A                                                                                        | 7.5                              | 7.1    | 7.9    | 4.0                               | 34.0 | 700                               | 0.50 | 10                              | 5.0   | SMA     |
| 1SMA4738A                                                                                        | 8.2                              | 7.8    | 8.6    | 4.5                               | 31.0 | 700                               | 0.50 | 10                              | 6.0   | SMA     |
| 1SAM4739A                                                                                        | 9.1                              | 8.6    | 9.6    | 5.0                               | 28.0 | 700                               | 0.50 | 10                              | 7.0   | SMA     |
| 1SMA4740A                                                                                        | 10.0                             | 9.5    | 10.5   | 7.0                               | 25.0 | 700                               | 0.25 | 10                              | 7.6   | SMA     |
| 1SMA4741A                                                                                        | 11.0                             | 10.5   | 11.6   | 8.0                               | 23.0 | 700                               | 0.25 | 5.0                             | 8.4   | SMA     |
| 1SMA4742A                                                                                        | 12.0                             | 11.4   | 12.6   | 9.0                               | 21.0 | 700                               | 0.25 | 5.0                             | 9.1   | SMA     |
| 1SMA4743A                                                                                        | 13.0                             | 12.4   | 13.7   | 10.0                              | 19.0 | 700                               | 0.25 | 5.0                             | 9.9   | SMA     |
| 1SMA4744A                                                                                        | 15.0                             | 14.3   | 15.8   | 14.0                              | 17.0 | 700                               | 0.25 | 5.0                             | 11.4  | SMA     |
| 1SMA4745A                                                                                        | 16.0                             | 15.2   | 16.8   | 16.0                              | 15.5 | 700                               | 0.25 | 5.0                             | 12.2  | SMA     |
| 1SMA4746A                                                                                        | 18.0                             | 17.1   | 18.9   | 20.0                              | 14.0 | 750                               | 0.25 | 5.0                             | 13.7  | SMA     |
| 1SMA4747A                                                                                        | 20.0                             | 19.0   | 21.0   | 22.0                              | 12.5 | 750                               | 0.25 | 5.0                             | 15.2  | SMA     |
| 1SMA4748A                                                                                        | 22.0                             | 20.9   | 23.1   | 23.0                              | 11.5 | 750                               | 0.25 | 5.0                             | 16.7  | SMA     |
| 1SMA4749A                                                                                        | 24.0                             | 22.8   | 25.2   | 25.0                              | 10.5 | 750                               | 0.25 | 5.0                             | 18.2  | SMA     |
| 1SMA4750A                                                                                        | 27.0                             | 25.7   | 28.4   | 35.0                              | 9.5  | 750                               | 0.25 | 5.0                             | 20.6  | SMA     |
| 1SMA4751A                                                                                        | 30.0                             | 28.5   | 31.5   | 40.0                              | 8.5  | 1000                              | 0.25 | 5.0                             | 22.8  | SMA     |
| 1SMA4752A                                                                                        | 33.0                             | 31.4   | 34.7   | 45.0                              | 7.5  | 1000                              | 0.25 | 5.0                             | 25.1  | SMA     |
| 1SMA4753A                                                                                        | 36.0                             | 34.2   | 37.8   | 50.0                              | 7.0  | 1000                              | 0.25 | 5.0                             | 27.4  | SMA     |
| 1SMA4754A                                                                                        | 39.0                             | 37.1   | 41     | 60.0                              | 6.5  | 1000                              | 0.25 | 5.0                             | 29.7  | SMA     |
| 1SMA4755A                                                                                        | 43.0                             | 40.9   | 45.2   | 70.0                              | 6.0  | 1500                              | 0.25 | 5.0                             | 32.7  | SMA     |
| 1SMA4756A                                                                                        | 47.0                             | 44.7   | 49.4   | 80.0                              | 5.5  | 1500                              | 0.25 | 5.0                             | 35.8  | SMA     |
| 1SMA4757A                                                                                        | 51.0                             | 48.5   | 53.6   | 95.0                              | 5.0  | 1500                              | 0.25 | 5.0                             | 38.8  | SMA     |
| 1SMA4758A                                                                                        | 56.0                             | 53.2   | 58.8   | 110                               | 4.5  | 2000                              | 0.25 | 5.0                             | 42.6  | SMA     |
| 1SMA4759A                                                                                        | 62.0                             | 58.9   | 65.1   | 125                               | 4.0  | 2000                              | 0.25 | 5.0                             | 47.1  | SMA     |
| 1SMA4760A                                                                                        | 68.0                             | 64.6   | 71.4   | 150                               | 3.7  | 2000                              | 0.25 | 5.0                             | 51.7  | SMA     |
| 1SMA4761A                                                                                        | 75.0                             | 71.3   | 78.8   | 175                               | 3.3  | 2000                              | 0.25 | 5.0                             | 56.0  | SMA     |
| 1SMA4762A                                                                                        | 82.0                             | 77.9   | 86.1   | 200                               | 3.0  | 3000                              | 0.25 | 5.0                             | 62.2  | SMA     |
| 1SMA4763A                                                                                        | 91.0                             | 86.5   | 95.6   | 250                               | 2.8  | 3000                              | 0.25 | 5.0                             | 69.2  | SMA     |
| 1SMA4764A                                                                                        | 100                              | 95.0   | 105    | 350                               | 2.5  | 3000                              | 0.25 | 5.0                             | 76.0  | SMA     |
| 1SMA110A                                                                                         | 110                              | 104.5  | 115.5  | 450                               | 2.3  | 4000                              | 0.25 | 5.0                             | 83.6  | SMA     |
| 1SMA120A                                                                                         | 120                              | 114    | 126    | 550                               | 2.0  | 4500                              | 0.25 | 5.0                             | 91.2  | SMA     |
| 1SMA130A                                                                                         | 130                              | 123.5  | 136.5  | 700                               | 1.9  | 5000                              | 0.25 | 5.0                             | 98.8  | SMA     |
| 1SMA150A                                                                                         | 150                              | 142.5  | 157.5  | 1000                              | 1.7  | 6000                              | 0.25 | 5.0                             | 114.0 | SMA     |
| 1SMA160A                                                                                         | 160                              | 152    | 168    | 1100                              | 1.6  | 6500                              | 0.25 | 5.0                             | 121.6 | SMA     |
| 1SMA180A                                                                                         | 180                              | 171    | 189    | 1200                              | 1.4  | 7000                              | 0.25 | 5.0                             | 136.8 | SMA     |
| 1SMA200A                                                                                         | 200                              | 190    | 210    | 1500                              | 1.2  | 8000                              | 0.25 | 5.0                             | 152.0 | SMA     |

**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<sub>ZT</sub> per JEDEC Method

### RATINGS AND CHARACTERISTIC CURVES( 1SMA4728 THRU 1SMA200A)

FIG.1- POWER TEMPERATURE DERATING CURVE

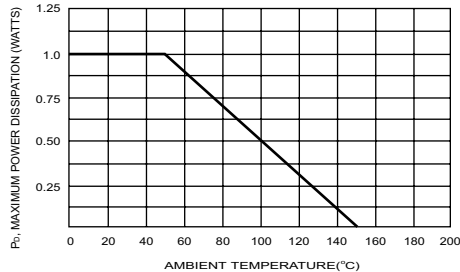


FIG.2- TYPICAL FORWARD CHARACTERISTICS

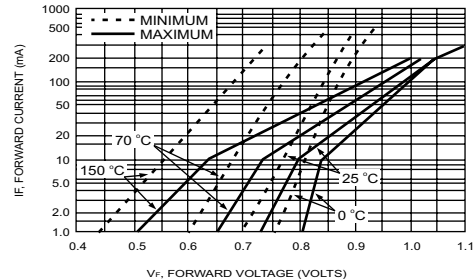


FIG.3- EFFECT OF ZENER CURRENT ON ZENER IMPEDANCE

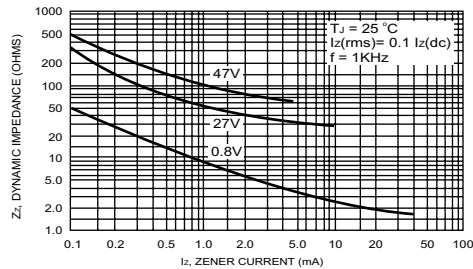


FIG.4- EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

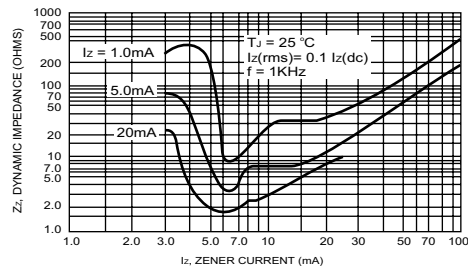


FIG.5- TYPICAL LEAKAGE CURRENT

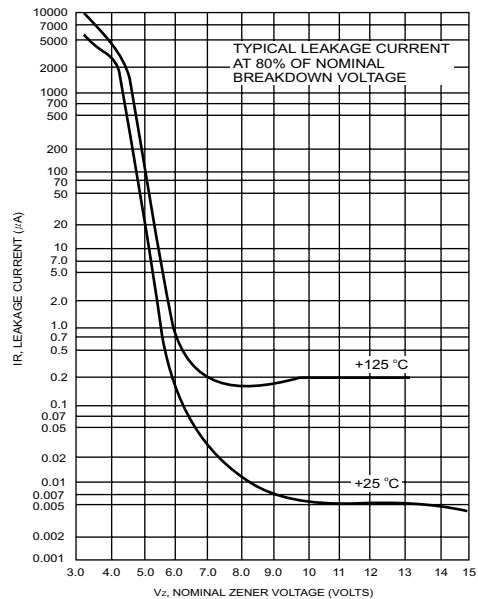


FIG.6- TYPICAL CAPACITANCE versus  $V_Z$

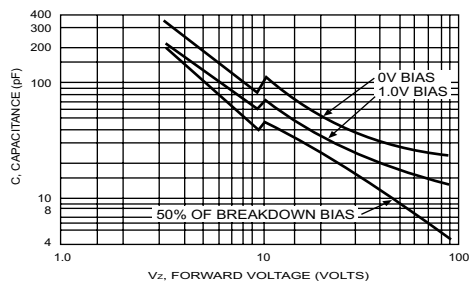
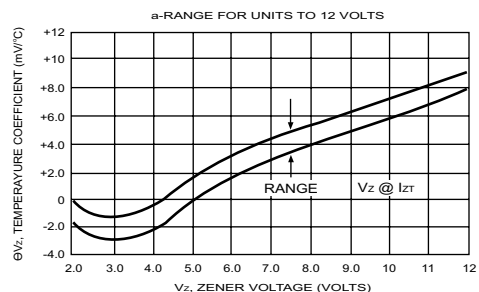


FIG.7- TEMPERATURE COEFFICIENTS



### RATINGS AND CHARACTERISTIC CURVES( 1SMA4728 THRU 1SMA200A)

FIG.7- TEMPERATURE COEFFICIENTS

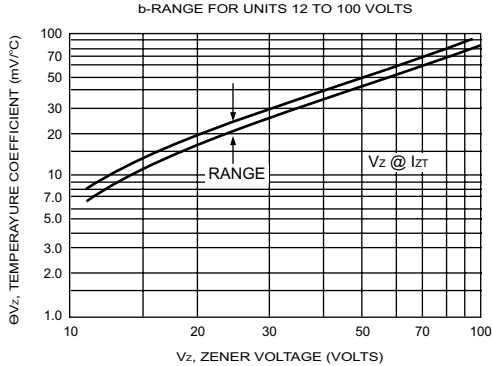


FIG.8- EFFECT OF ZENER CURRENT

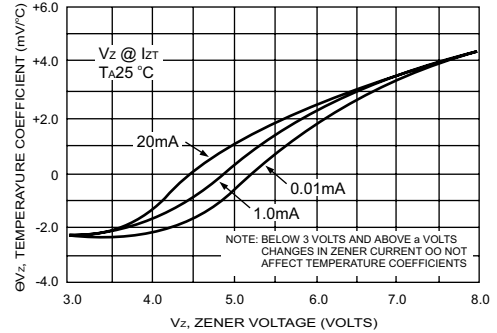
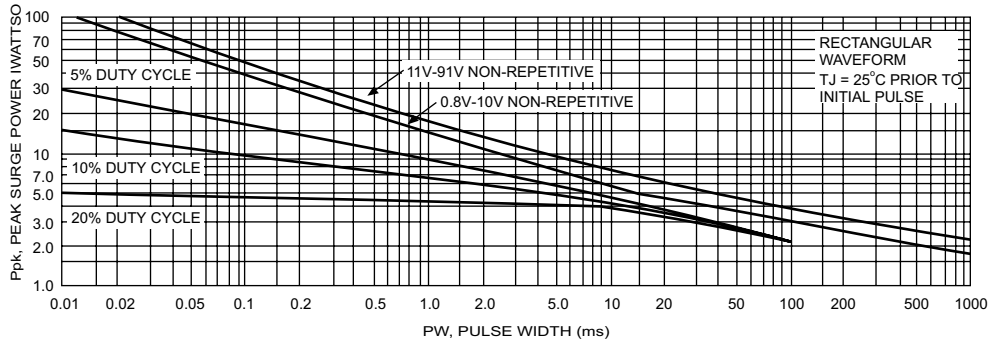


FIG.9- MAXIMUM SURGE POWER



| PACKAGE | SPQ/PCS   | CARTON<br>SPQ/PCS | CARTON<br>SIZE/CM | CARTON<br>GW/KG | CARTON<br>NW/KG |
|---------|-----------|-------------------|-------------------|-----------------|-----------------|
| SMA     | 5000/REEL | 80000             | 36X30.6X31        | 12.00           | 11.00           |