



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

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 $T_A=50^\circ\text{C}$, Derate above 50°C (Note 1) | P_D | 1.0 6.67 | Watts mW/ $^\circ\text{C}$ |
| 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 | $^\circ\text{C}$ |

- 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 | Marking | V _Z @ I _{ZT} | | | Maximum Zener Impedance | | | | Maximum Leakage Current | | Package |
|------------------------------------|---------|----------------------------------|--------|--------|-----------------------------------|------|-----------------------------------|------|---------------------------------|-------|---------|
| | | | | | Z _{ZT} @ I _{ZT} | | Z _{ZK} @ I _{ZK} | | I _R @ V _R | | |
| | | Nom. V | Min. V | Max. V | Ω | mA | Ω | mA | μA | V | |
| 1.0 Watt ZENER Diodes -- continued | | | | | | | | | | | |
| 1SMA4728A | 728A | 3.3 | 3.1 | 3.5 | 10.0 | 76.0 | 400 | 1.00 | 100 | 1.0 | SMA |
| 1SMA4729A | 729A | 3.6 | 3.4 | 3.8 | 10.0 | 69.0 | 400 | 1.00 | 100 | 1.0 | SMA |
| 1SMA4730A | 730A | 3.9 | 3.7 | 4.1 | 9.0 | 64.0 | 400 | 1.00 | 50 | 1.0 | SMA |
| 1SMA4731A | 731A | 4.3 | 4.1 | 4.5 | 9.0 | 58.0 | 400 | 1.00 | 10 | 1.0 | SMA |
| 1SMA4732A | 732A | 4.7 | 4.5 | 4.9 | 8.0 | 53.0 | 500 | 1.00 | 10 | 1.0 | SMA |
| 1SMA4733A | 733A | 5.1 | 4.8 | 5.4 | 7.0 | 49.0 | 550 | 1.00 | 10 | 1.0 | SMA |
| 1SMA4734A | 734A | 5.6 | 5.3 | 5.9 | 5.0 | 45.0 | 600 | 1.00 | 10 | 2.0 | SMA |
| 1SMA4735A | 735A | 6.2 | 5.9 | 6.5 | 2.0 | 41.0 | 700 | 1.00 | 10 | 3.0 | SMA |
| 1SMA4736A | 736A | 6.8 | 6.5 | 7.1 | 3.5 | 37.0 | 700 | 1.00 | 10 | 4.0 | SMA |
| 1SMA4737A | 737A | 7.5 | 7.1 | 7.9 | 4.0 | 34.0 | 700 | 0.50 | 10 | 5.0 | SMA |
| 1SMA4738A | 738A | 8.2 | 7.8 | 8.6 | 4.5 | 31.0 | 700 | 0.50 | 10 | 6.0 | SMA |
| 1SAM4739A | 739A | 9.1 | 8.6 | 9.6 | 5.0 | 28.0 | 700 | 0.50 | 10 | 7.0 | SMA |
| 1SMA4740A | 740A | 10.0 | 9.5 | 10.5 | 7.0 | 25.0 | 700 | 0.25 | 10 | 7.6 | SMA |
| 1SMA4741A | 741A | 11.0 | 10.5 | 11.6 | 8.0 | 23.0 | 700 | 0.25 | 5.0 | 8.4 | SMA |
| 1SMA4742A | 742A | 12.0 | 11.4 | 12.6 | 9.0 | 21.0 | 700 | 0.25 | 5.0 | 9.1 | SMA |
| 1SMA4743A | 743A | 13.0 | 12.4 | 13.7 | 10.0 | 19.0 | 700 | 0.25 | 5.0 | 9.9 | SMA |
| 1SMA4744A | 744A | 15.0 | 14.3 | 15.8 | 14.0 | 17.0 | 700 | 0.25 | 5.0 | 11.4 | SMA |
| 1SMA4745A | 745A | 16.0 | 15.2 | 16.8 | 16.0 | 15.5 | 700 | 0.25 | 5.0 | 12.2 | SMA |
| 1SMA4746A | 746A | 18.0 | 17.1 | 18.9 | 20.0 | 14.0 | 750 | 0.25 | 5.0 | 13.7 | SMA |
| 1SMA4747A | 747A | 20.0 | 19.0 | 21.0 | 22.0 | 12.5 | 750 | 0.25 | 5.0 | 15.2 | SMA |
| 1SMA4748A | 748A | 22.0 | 20.9 | 23.1 | 23.0 | 11.5 | 750 | 0.25 | 5.0 | 16.7 | SMA |
| 1SMA4749A | 749A | 24.0 | 22.8 | 25.2 | 25.0 | 10.5 | 750 | 0.25 | 5.0 | 18.2 | SMA |
| 1SMA4750A | 750A | 27.0 | 25.7 | 28.4 | 35.0 | 9.5 | 750 | 0.25 | 5.0 | 20.6 | SMA |
| 1SMA4751A | 751A | 30.0 | 28.5 | 31.5 | 40.0 | 8.5 | 1000 | 0.25 | 5.0 | 22.8 | SMA |
| 1SMA4752A | 752A | 33.0 | 31.4 | 34.7 | 45.0 | 7.5 | 1000 | 0.25 | 5.0 | 25.1 | SMA |
| 1SMA4753A | 753A | 36.0 | 34.2 | 37.8 | 50.0 | 7.0 | 1000 | 0.25 | 5.0 | 27.4 | SMA |
| 1SMA4754A | 754A | 39.0 | 37.1 | 41 | 60.0 | 6.5 | 1000 | 0.25 | 5.0 | 29.7 | SMA |
| 1SMA4755A | 755A | 43.0 | 40.9 | 45.2 | 70.0 | 6.0 | 1500 | 0.25 | 5.0 | 32.7 | SMA |
| 1SMA4756A | 756A | 47.0 | 44.7 | 49.4 | 80.0 | 5.5 | 1500 | 0.25 | 5.0 | 35.8 | SMA |
| 1SMA4757A | 757A | 51.0 | 48.5 | 53.6 | 95.0 | 5.0 | 1500 | 0.25 | 5.0 | 38.8 | SMA |
| 1SMA4758A | 758A | 56.0 | 53.2 | 58.8 | 110 | 4.5 | 2000 | 0.25 | 5.0 | 42.6 | SMA |
| 1SMA4759A | 759A | 62.0 | 58.9 | 65.1 | 125 | 4.0 | 2000 | 0.25 | 5.0 | 47.1 | SMA |
| 1SMA4760A | 760A | 68.0 | 64.6 | 71.4 | 150 | 3.7 | 2000 | 0.25 | 5.0 | 51.7 | SMA |
| 1SMA4761A | 761A | 75.0 | 71.3 | 78.8 | 175 | 3.3 | 2000 | 0.25 | 5.0 | 56.0 | SMA |
| 1SMA4762A | 762A | 82.0 | 77.9 | 86.1 | 200 | 3.0 | 3000 | 0.25 | 5.0 | 62.2 | SMA |
| 1SMA4763A | 763A | 91.0 | 86.5 | 95.6 | 250 | 2.8 | 3000 | 0.25 | 5.0 | 69.2 | SMA |
| 1SMA4764A | 764A | 100 | 95.0 | 105 | 350 | 2.5 | 3000 | 0.25 | 5.0 | 76.0 | SMA |
| 1SMA110A | 110A | 110 | 104.5 | 115.5 | 450 | 2.3 | 4000 | 0.25 | 5.0 | 83.6 | SMA |
| 1SMA120A | 120A | 120 | 114 | 126 | 550 | 2.0 | 4500 | 0.25 | 5.0 | 91.2 | SMA |
| 1SMA130A | 130A | 130 | 123.5 | 136.5 | 700 | 1.9 | 5000 | 0.25 | 5.0 | 98.8 | SMA |
| 1SMA150A | 150A | 150 | 142.5 | 157.5 | 1000 | 1.7 | 6000 | 0.25 | 5.0 | 114.0 | SMA |
| 1SMA160A | 160A | 160 | 152 | 168 | 1100 | 1.6 | 6500 | 0.25 | 5.0 | 121.6 | SMA |
| 1SMA180A | 180A | 180 | 171 | 189 | 1200 | 1.4 | 7000 | 0.25 | 5.0 | 136.8 | SMA |
| 1SMA200A | 200A | 200 | 190 | 210 | 1500 | 1.2 | 8000 | 0.25 | 5.0 | 152.0 | SMA |

Notes :

- (1) Suffix " A " indicates ± 5.0% tolerance.
- (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

RATINGS AND CHARACTERISTIC CURVES(1SMA4728 THRU 1SMA200A)

FIG.1- POWER TEMPERATURE DERATING CURVE

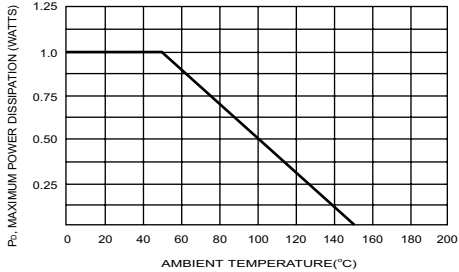


FIG.2- TYPICAL FORWARD CHARACTERISTICS

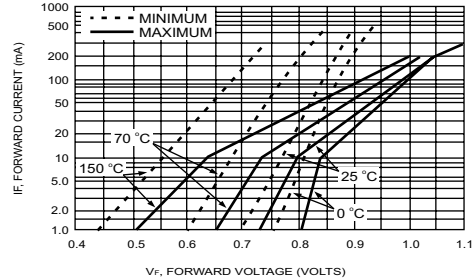


FIG.3- EFFECT OF ZENER CURRENT ON ZENER IMPEDANCE

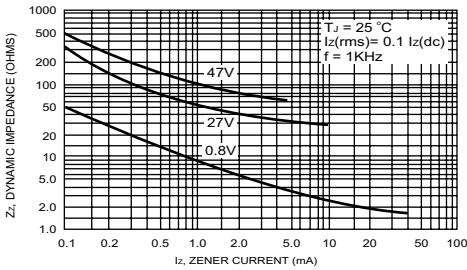


FIG.5- TYPICAL LEAKAGE CURRENT

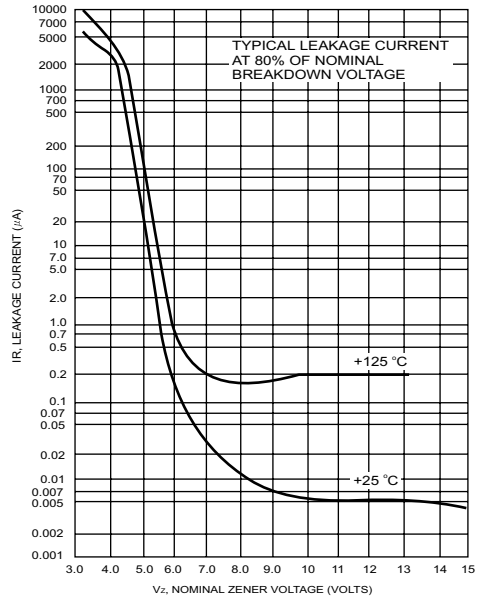


FIG.4- EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

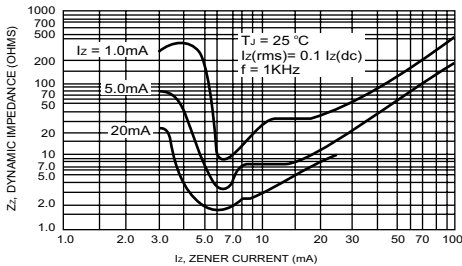


FIG.6- TYPICAL CAPACITANCE versus Vz

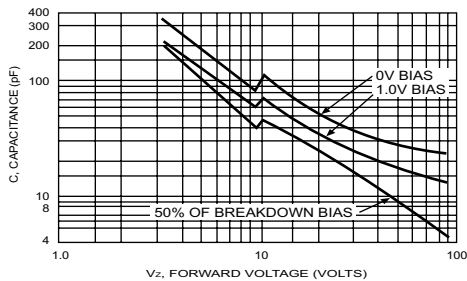
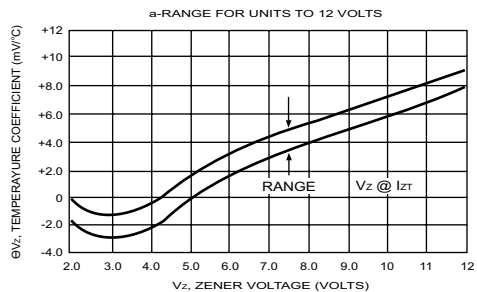


FIG.7- TEMPERATURE COEFFICIENTS



RATINGS AND CHARACTERISTIC CURVES(1SMA4728A THRU 1SMA200A)

FIG.7- TEMPERATURE COEFFICIENTS

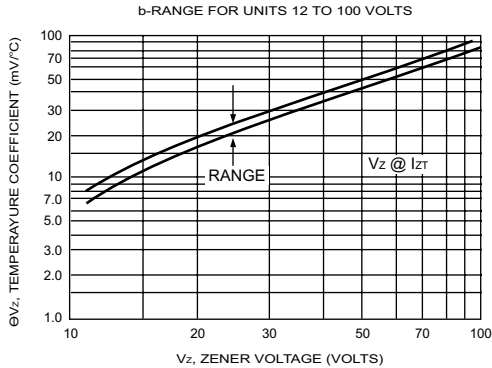


FIG.8- EFFECT OF ZENER CURRENT

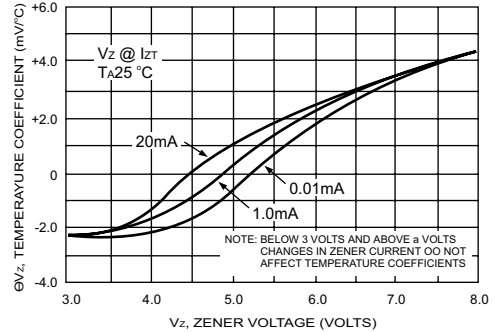
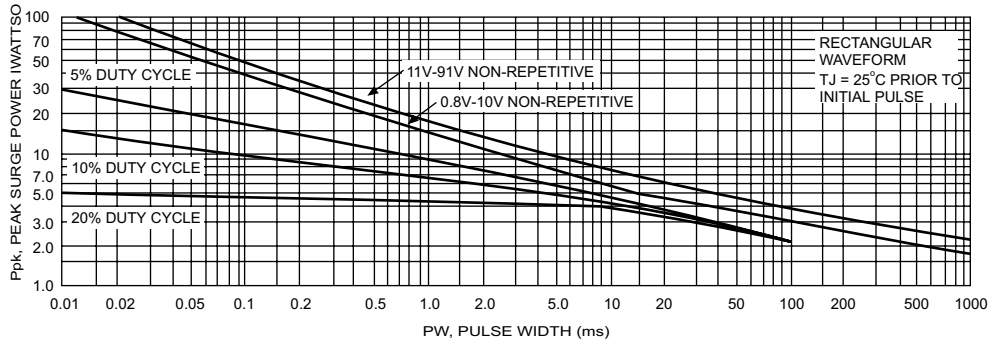


FIG.9- MAXIMUM SURGE POWER



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

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