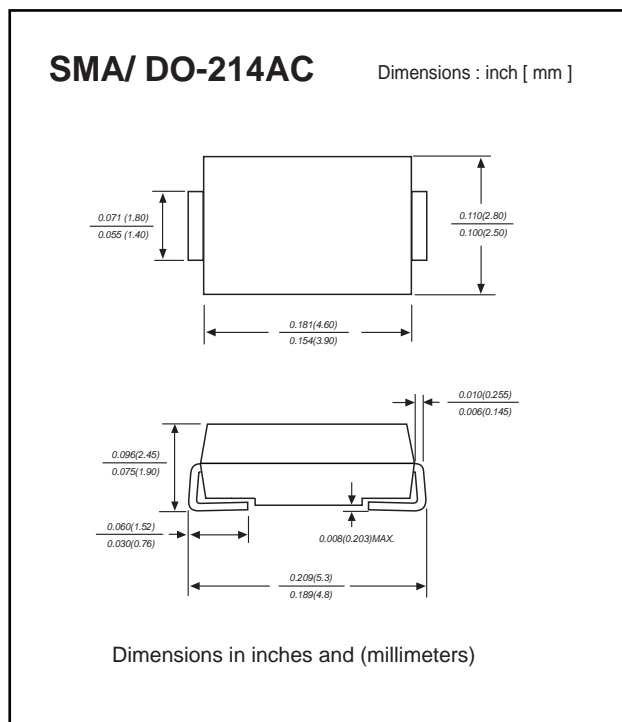


SURFACE MOUNT SILICON ZENER DIODES

Vz : 3.0 – 300 Volts, Pd : 1 Watts



Features

- Glass passivated chip
- Low leakage
- Built-in strain relief
- Low inductance
- High peak reverse power dissipation
- Lead (Pb)-free component
- For use in stabilizing and clipping with high power rating

Mechanical Data

- Case: Molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end
- Mounting position: Any
- Weight: 0.0025 ounce, 0.07gram

Maximum Ratings($T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Parameter | Symbol | Value | Units |
|---|-----------------|---------------|--------------------|
| DC power dissipation at $T_L = 50^{\circ}\text{C}$ ⁽¹⁾ | P_D | 1 | W |
| Maximum forward voltage at $I_F = 200\text{ mA}$ | V_F | 1.2 | V |
| Maximum thermal resistance junction to ambient air ⁽²⁾ | $R_{\theta JA}$ | 170 | K/W |
| Junction temperature range | T_J | - 55 to + 150 | $^{\circ}\text{C}$ |
| Storage temperature range | T_{STG} | - 55 to + 150 | $^{\circ}\text{C}$ |

Note:

(1) T_L = Lead temperature at 3/8 " (9.5mm) from body

(2) Valid provided that leads are kept at ambient temperature at a distance of 10 mm from case



1SMA4727A ~ 1SZ1300A

Ratings and Characteristics Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

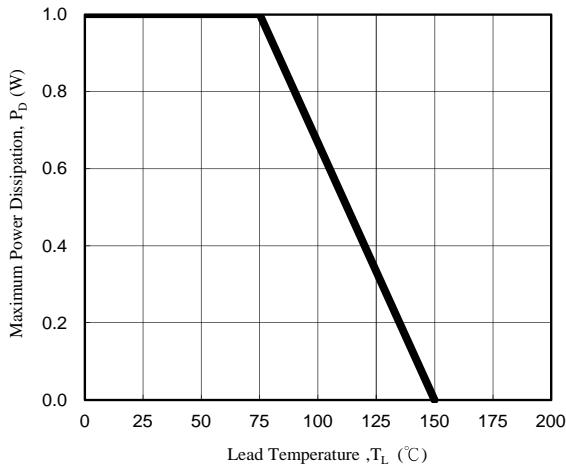


Fig. 1 - Power Temperature Derating Curve

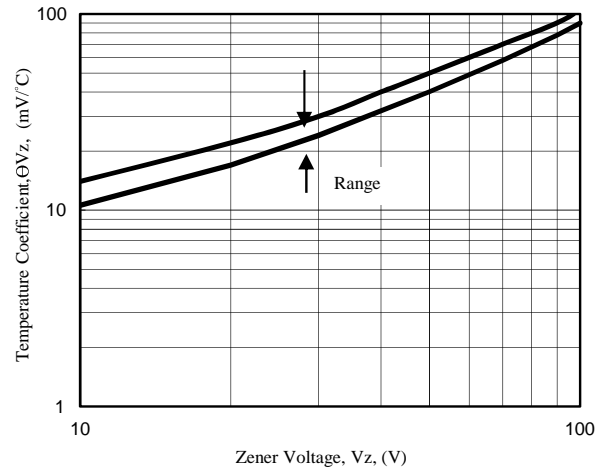


Fig. 2 - Temperature Coefficients v.s. Zener Voltage

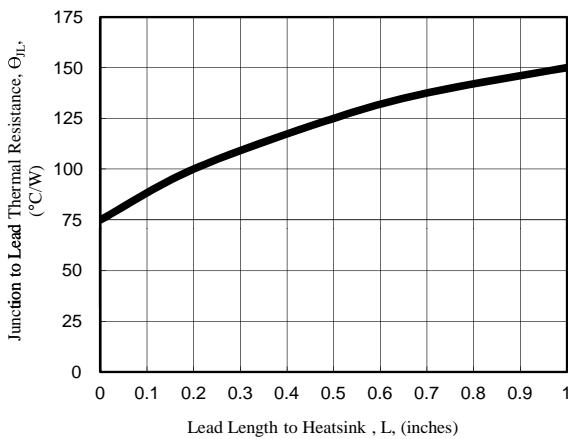


Fig. 3 - Typical Thermal Resistance v.s. Lead Length

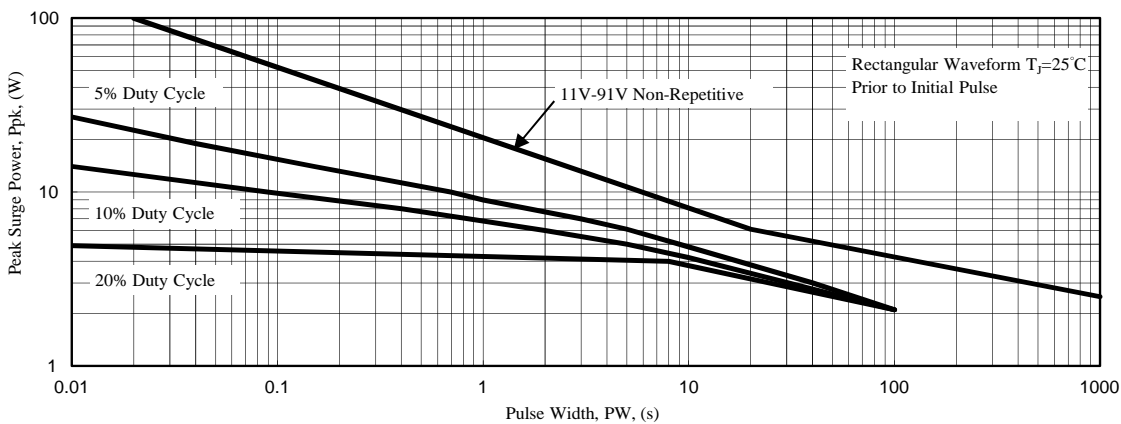


Fig. 4 - Maximum Surge Power



1SMA4727A ~ 1SZ1300A

Electrical Characteristics($T_A=25^\circ\text{C}$ unless otherwise noted)

| Part Number | Device Marking Code | Nominal Zener Voltage | | Maximum Zener Impedance | | | Maximum Reverse Leakage Current | | Maximum DC Zener Current | Maximum Surge Current |
|-------------|---------------------|-----------------------|----------|-------------------------|-------------------|----------|---------------------------------|-------|--------------------------|-----------------------|
| | | $V_Z @ I_{ZT}$ | I_{ZT} | $Z_{ZT} @ I_{ZT}$ | $Z_{ZK} @ I_{ZK}$ | I_{ZK} | $I_R @ V_R$ | | I_{ZM} | I_{RM} |
| | | (V) | (mA) | (Ω) | (Ω) | (mA) | (μA) | (V) | (mA) | (mApk) |
| 1SMA4727A | 27A | 3.0 | 86.0 | 10.0 | 400 | 1.00 | 150.0 | 1.0 | 274.0 | 1370 |
| 1SMA4728A | 28A | 3.3 | 76.0 | 10.0 | 400 | 1.00 | 100.0 | 1.0 | 274.0 | 1370 |
| 1SMA4729A | 29A | 3.6 | 69.0 | 10.0 | 400 | 1.00 | 100.0 | 1.0 | 251.0 | 1255 |
| 1SMA4730A | 30A | 3.9 | 64.0 | 9.0 | 400 | 1.00 | 50.0 | 1.0 | 232.0 | 1160 |
| 1SMA4731A | 31A | 4.3 | 58.0 | 9.0 | 400 | 1.00 | 20.0 | 1.0 | 210.0 | 1050 |
| 1SMA4732A | 32A | 4.7 | 53.0 | 8.0 | 500 | 1.00 | 10.0 | 1.0 | 192.0 | 960 |
| 1SMA4733A | 33A | 5.1 | 49.0 | 7.0 | 550 | 1.00 | 10.0 | 1.0 | 177.0 | 885 |
| 1SMA4734A | 34A | 5.6 | 45.0 | 5.0 | 600 | 1.00 | 10.0 | 2.0 | 161.0 | 805 |
| 1SMA4735A | 35A | 6.2 | 41.0 | 2.0 | 700 | 1.00 | 10.0 | 3.0 | 146.0 | 730 |
| 1SMA4736A | 36A | 6.8 | 37.0 | 3.5 | 700 | 1.00 | 5.0 | 4.0 | 133.0 | 660 |
| 1SMA4737A | 37A | 7.5 | 34.0 | 4.0 | 700 | 0.50 | 5.0 | 5.0 | 121.0 | 605 |
| 1SMA4738A | 38A | 8.2 | 31.0 | 4.5 | 700 | 0.50 | 5.0 | 6.0 | 110.0 | 550 |
| 1SMA4739A | 39A | 9.1 | 28.0 | 5.0 | 700 | 0.50 | 0.5 | 7.0 | 100.0 | 500 |
| 1SMA4740A | 40A | 10.0 | 25.0 | 7.0 | 700 | 0.25 | 0.5 | 7.6 | 91.0 | 454 |
| 1SMA4741A | 41A | 11.0 | 23.0 | 8.0 | 700 | 0.25 | 0.1 | 8.4 | 83.0 | 414 |
| 1SMA4742A | 42A | 12.0 | 21.0 | 9.0 | 700 | 0.25 | 0.1 | 9.1 | 76.0 | 380 |
| 1SMA4743A | 43A | 13.0 | 19.0 | 10.0 | 700 | 0.25 | 0.1 | 9.9 | 69.0 | 344 |
| 1SMA4744A | 44A | 15.0 | 17.0 | 14.0 | 700 | 0.25 | 0.1 | 11.4 | 61.0 | 305 |
| 1SMA4745A | 45A | 16.0 | 15.5 | 16.0 | 700 | 0.25 | 0.1 | 12.2 | 57.0 | 285 |
| 1SMA4746A | 46A | 18.0 | 14.0 | 20.0 | 750 | 0.25 | 0.1 | 13.7 | 50.0 | 250 |
| 1SMA4747A | 47A | 20.0 | 12.5 | 22.0 | 750 | 0.25 | 0.1 | 15.2 | 45.0 | 225 |
| 1SMA4748A | 48A | 22.0 | 11.5 | 23.0 | 750 | 0.25 | 0.1 | 16.7 | 41.0 | 205 |
| 1SMA4749A | 49A | 24.0 | 10.5 | 25.0 | 750 | 0.25 | 0.1 | 18.2 | 38.0 | 190 |
| 1SMA4750A | 50A | 27.0 | 9.5 | 35.0 | 750 | 0.25 | 0.1 | 20.6 | 34.0 | 170 |
| 1SMA4751A | 51A | 30.0 | 8.5 | 40.0 | 1000 | 0.25 | 0.1 | 22.8 | 30.0 | 150 |
| 1SMA4752A | 52A | 33.0 | 7.5 | 45.0 | 1000 | 0.25 | 0.1 | 25.1 | 27.0 | 135 |
| 1SMA4753A | 53A | 36.0 | 7.0 | 50.0 | 1000 | 0.25 | 0.1 | 27.4 | 25.0 | 125 |
| 1SMA4754A | 54A | 39.0 | 6.5 | 60.0 | 1000 | 0.25 | 0.1 | 29.7 | 23.0 | 115 |
| 1SMA4755A | 55A | 43.0 | 6.0 | 70.0 | 1500 | 0.25 | 0.1 | 32.7 | 22.0 | 110 |
| 1SMA4756A | 56A | 47.0 | 5.5 | 80.0 | 1500 | 0.25 | 0.1 | 35.8 | 19.0 | 95 |
| 1SMA4757A | 57A | 51.0 | 5.0 | 95.0 | 1500 | 0.25 | 0.1 | 38.8 | 18.0 | 90 |
| 1SMA4758A | 58A | 56.0 | 4.5 | 110.0 | 2000 | 0.25 | 0.1 | 42.6 | 16.0 | 80 |
| 1SMA4759A | 59A | 62.0 | 4.0 | 125.0 | 2000 | 0.25 | 0.1 | 47.1 | 14.0 | 70 |
| 1SMA4760A | 60A | 68.0 | 3.7 | 150.0 | 2000 | 0.25 | 0.1 | 51.7 | 13.0 | 65 |
| 1SMA4761A | 61A | 75.0 | 3.3 | 175.0 | 2000 | 0.25 | 0.1 | 56.0 | 12.0 | 60 |
| 1SMA4762A | 62A | 82.0 | 3.0 | 200.0 | 3000 | 0.25 | 0.1 | 62.2 | 11.0 | 55 |
| 1SMA4763A | 63A | 91.0 | 2.8 | 250.0 | 3000 | 0.25 | 0.1 | 69.2 | 10.0 | 50 |
| 1SMA4764A | 64A | 100.0 | 2.5 | 350.0 | 3000 | 0.25 | 0.1 | 76.0 | 9.0 | 45 |
| 1SZ110A | 110A | 110.0 | 2.3 | 450.0 | 4000 | 0.25 | 0.1 | 83.6 | 8.6 | 40 |
| 1SZ1120A | 120A | 120.0 | 2.0 | 550.0 | 4500 | 0.25 | 0.1 | 91.2 | 7.8 | 37 |
| 1SZ1130A | 130A | 130.0 | 1.9 | 700.0 | 5000 | 0.25 | 0.1 | 98.8 | 7.0 | 34 |
| 1SZ1150A | 150A | 150.0 | 1.7 | 1000.0 | 6000 | 0.25 | 0.1 | 114.0 | 6.4 | 30 |
| 1SZ1160A | 160A | 160.0 | 1.6 | 1100.0 | 6500 | 0.25 | 0.1 | 121.6 | 5.8 | 28 |
| 1SZ1180A | 180A | 180.0 | 1.4 | 1200.0 | 7000 | 0.25 | 0.1 | 136.8 | 5.2 | 25 |
| 1SZ1200A | 200A | 200.0 | 1.2 | 1900.0 | 9990 | 0.25 | 0.1 | 152.0 | 4.7 | 22 |
| 1SZ1220A | 220A | 220.0 | 1.0 | 1600.0 | 8000 | 0.25 | 0.1 | 167.2 | 4.0 | 20 |
| 1SZ1240A | 240A | 240.0 | 0.9 | 1800.0 | 8500 | 0.25 | 0.1 | 182.4 | 3.8 | 19 |
| 1SZ1250A | 250A | 250.0 | 0.9 | 2000.0 | 9000 | 0.25 | 0.1 | 190.0 | 3.6 | 18 |
| 1SZ1270A | 270A | 270.0 | 0.8 | 2100.0 | 9000 | 0.25 | 0.1 | 205.0 | 3.3 | 16 |
| 1SZ1300A | 300A | 300.0 | 0.8 | 2300.0 | 9500 | 0.25 | 0.1 | 228.0 | 3.0 | 15 |

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_{ZT} per JEDEC

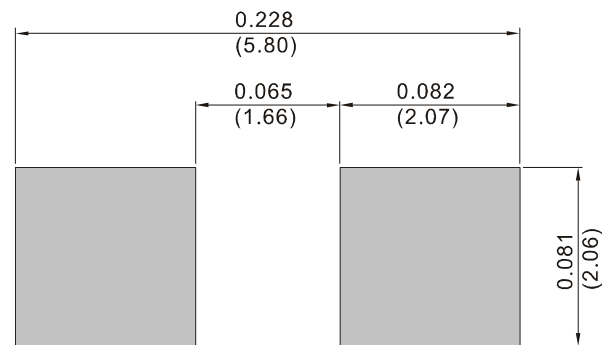


1SMA4727A ~ 1SZ1300A

Mounting Pad Layout

SMA/ DO-214AC

Dimensions : inch [mm]



ORDER INFORMATION

- Packing information
 - T/R - 5/7.5K per 13" plastic Reel
 - T/R - 2K per 7" plastic Reel