



$V_Z$  : 3.3 to 330 V

$P_D$  : 1 W

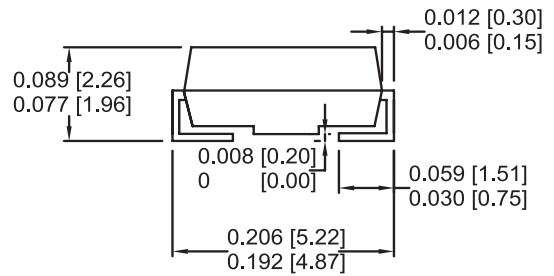
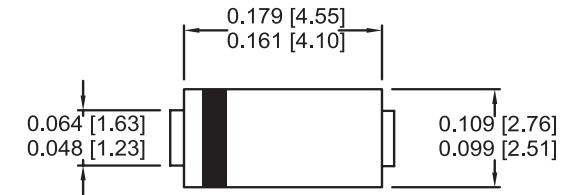
Surface Mount  
Zener Diodes

SMA/ DO-214AC

Zener  
1W SMD

## 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 circuits with high power rating



Dimensions:inch[mm]

## 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

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

| Parameter  | Symbol          | Value       | Unit                 |
|--|-----------------|-------------|----------------------|
| DC power dissipation at $T_L = 75^{\circ}\text{C}$ | $P_D$           | 1           | W                    |
| Maximum forward voltage at $I_F = 200\text{ mA}$   | $V_F$           | 1.2         | V                    |
| Maximum thermal resistance junction to ambient air | $R_{\theta JA}$ | 170         | $^{\circ}\text{C/W}$ |
| Junction temperature range                         | $T_J$           | -55 to +175 | $^{\circ}\text{C}$   |
| Storage temperature range                          | $T_{STG}$       | -55 to +175 | $^{\circ}\text{C}$   |



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

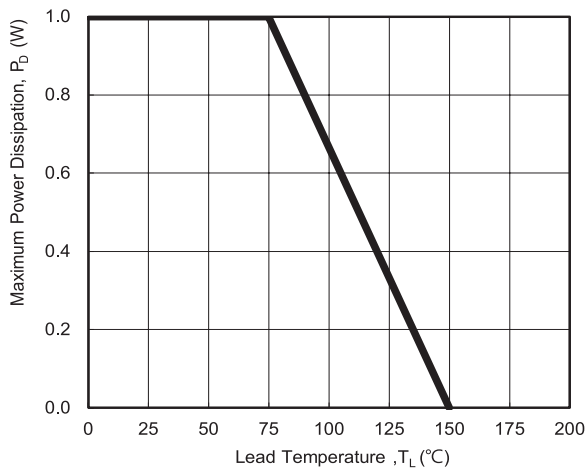


Fig. 1 - Power Temperature Derating Curve

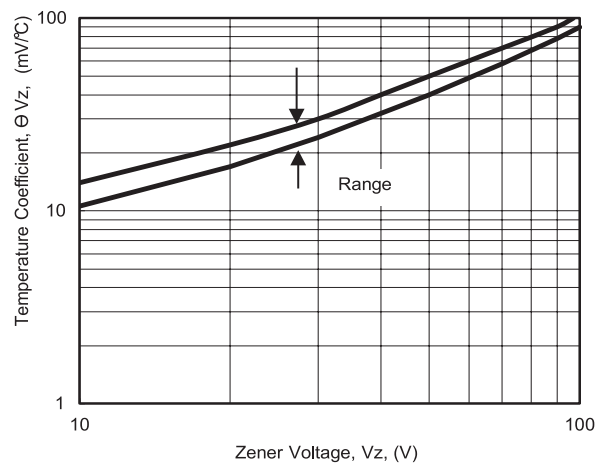


Fig. 2 - Temperature Coefficients v.s. Zener Voltage

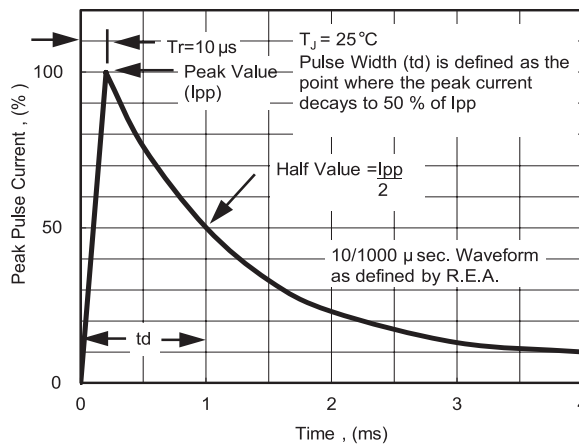


Fig. 3 - Pulse Waveform

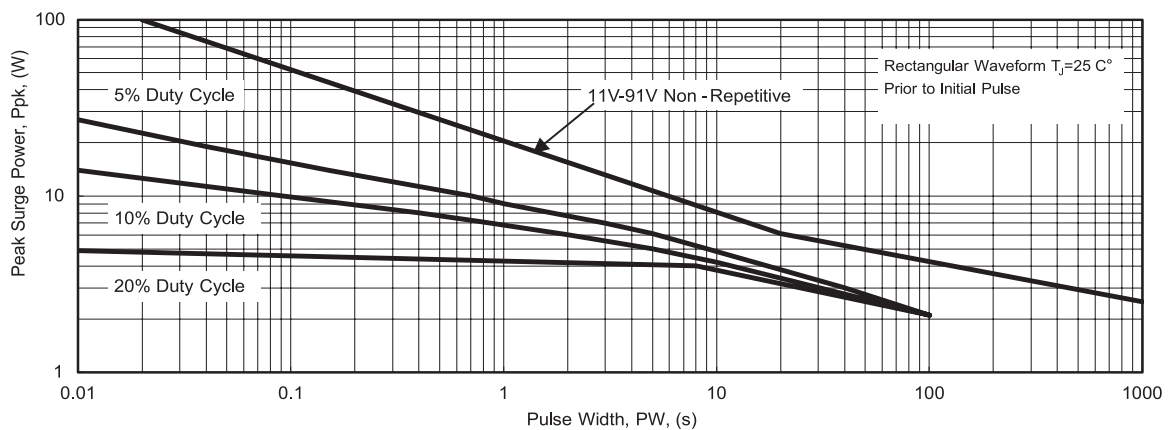


Fig. 4 - Maximum Surge Power



Electrical Characteristics( $T_A=25^{\circ}C$  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)     | ( $\Omega$ )            | ( $\Omega$ )      | (mA)     | ( $\mu A$ )                     | (V)   | (mA)                     | (mApk)                |
| SMA4728A    | 28A                 | 3.3                   | 76.0     | 10.0                    | 400               | 1.00     | 100.0                           | 1.0   | 274.0                    | 1370                  |
| SMA4729A    | 29A                 | 3.6                   | 69.0     | 10.0                    | 400               | 1.00     | 100.0                           | 1.0   | 251.0                    | 1255                  |
| SMA4730A    | 30A                 | 3.9                   | 64.0     | 9.0                     | 400               | 1.00     | 50.0                            | 1.0   | 232.0                    | 1160                  |
| SMA4731A    | 31A                 | 4.3                   | 58.0     | 9.0                     | 400               | 1.00     | 10.0                            | 1.0   | 210.0                    | 1050                  |
| SMA4732A    | 32A                 | 4.7                   | 53.0     | 8.0                     | 500               | 1.00     | 10.0                            | 1.0   | 192.0                    | 960                   |
| SMA4733A    | 33A                 | 5.1                   | 49.0     | 7.0                     | 550               | 1.00     | 10.0                            | 1.0   | 177.0                    | 885                   |
| SMA4734A    | 34A                 | 5.6                   | 45.0     | 5.0                     | 600               | 1.00     | 10.0                            | 2.0   | 161.0                    | 805                   |
| SMA4735A    | 35A                 | 6.2                   | 41.0     | 2.0                     | 700               | 1.00     | 10.0                            | 3.0   | 146.0                    | 730                   |
| SMA4736A    | 36A                 | 6.8                   | 37.0     | 3.5                     | 700               | 1.00     | 5.0                             | 4.0   | 133.0                    | 660                   |
| SMA4737A    | 37A                 | 7.5                   | 34.0     | 4.0                     | 700               | 0.50     | 5.0                             | 5.0   | 121.0                    | 605                   |
| SMA4738A    | 38A                 | 8.2                   | 31.0     | 4.5                     | 700               | 0.50     | 5.0                             | 6.0   | 110.0                    | 550                   |
| SMA4739A    | 39A                 | 9.1                   | 28.0     | 5.0                     | 700               | 0.50     | 0.5                             | 7.0   | 100.0                    | 500                   |
| SMA4740A    | 40A                 | 10.0                  | 25.0     | 7.0                     | 700               | 0.25     | 0.5                             | 7.6   | 91.0                     | 454                   |
| SMA4741A    | 41A                 | 11.0                  | 23.0     | 8.0                     | 700               | 0.25     | 0.1                             | 8.4   | 83.0                     | 414                   |
| SMA4742A    | 42A                 | 12.0                  | 21.0     | 9.0                     | 700               | 0.25     | 0.1                             | 9.1   | 76.0                     | 380                   |
| SMA4743A    | 43A                 | 13.0                  | 19.0     | 10.0                    | 700               | 0.25     | 0.1                             | 9.9   | 69.0                     | 344                   |
| SMA4744A    | 44A                 | 15.0                  | 17.0     | 14.0                    | 700               | 0.25     | 0.1                             | 11.4  | 61.0                     | 305                   |
| SMA4745A    | 45A                 | 16.0                  | 15.5     | 16.0                    | 700               | 0.25     | 0.1                             | 12.2  | 57.0                     | 285                   |
| SMA4746A    | 46A                 | 18.0                  | 14.0     | 20.0                    | 750               | 0.25     | 0.1                             | 13.7  | 50.0                     | 250                   |
| SMA4747A    | 47A                 | 20.0                  | 12.5     | 22.0                    | 750               | 0.25     | 0.1                             | 15.2  | 45.0                     | 225                   |
| SMA4748A    | 48A                 | 22.0                  | 11.5     | 23.0                    | 750               | 0.25     | 0.1                             | 16.7  | 41.0                     | 205                   |
| SMA4749A    | 49A                 | 24.0                  | 10.5     | 25.0                    | 750               | 0.25     | 0.1                             | 18.2  | 38.0                     | 190                   |
| SMA4750A    | 50A                 | 27.0                  | 9.5      | 35.0                    | 750               | 0.25     | 0.1                             | 20.6  | 34.0                     | 170                   |
| SMA4751A    | 51A                 | 30.0                  | 8.5      | 40.0                    | 1000              | 0.25     | 0.1                             | 22.8  | 30.0                     | 150                   |
| SMA4752A    | 52A                 | 33.0                  | 7.5      | 45.0                    | 1000              | 0.25     | 0.1                             | 25.1  | 27.0                     | 135                   |
| SMA4753A    | 53A                 | 36.0                  | 7.0      | 50.0                    | 1000              | 0.25     | 0.1                             | 27.4  | 25.0                     | 125                   |
| SMA4754A    | 54A                 | 39.0                  | 6.5      | 60.0                    | 1000              | 0.25     | 0.1                             | 29.7  | 23.0                     | 115                   |
| SMA4755A    | 55A                 | 43.0                  | 6.0      | 70.0                    | 1500              | 0.25     | 0.1                             | 32.7  | 22.0                     | 110                   |
| SMA4756A    | 56A                 | 47.0                  | 5.5      | 80.0                    | 1500              | 0.25     | 0.1                             | 35.8  | 19.0                     | 95                    |
| SMA4757A    | 57A                 | 51.0                  | 5.0      | 95.0                    | 1500              | 0.25     | 0.1                             | 38.8  | 18.0                     | 90                    |
| SMA4758A    | 58A                 | 56.0                  | 4.5      | 110.0                   | 2000              | 0.25     | 0.1                             | 42.6  | 16.0                     | 80                    |
| SMA4759A    | 59A                 | 62.0                  | 4.0      | 125.0                   | 2000              | 0.25     | 0.1                             | 47.1  | 14.0                     | 70                    |
| SMA4760A    | 60A                 | 68.0                  | 3.7      | 150.0                   | 2000              | 0.25     | 0.1                             | 51.7  | 13.0                     | 65                    |
| SMA4761A    | 61A                 | 75.0                  | 3.3      | 175.0                   | 2000              | 0.25     | 0.1                             | 56.0  | 12.0                     | 60                    |
| SMA4762A    | 62A                 | 82.0                  | 3.0      | 200.0                   | 3000              | 0.25     | 0.1                             | 62.2  | 11.0                     | 55                    |
| SMA4763A    | 63A                 | 91.0                  | 2.8      | 250.0                   | 3000              | 0.25     | 0.1                             | 69.2  | 10.0                     | 50                    |
| SMA4764A    | 64A                 | 100.0                 | 2.5      | 350.0                   | 3000              | 0.25     | 0.1                             | 76.0  | 9.0                      | 45                    |
| SZ1110A     | 11Z                 | 110.0                 | 2.3      | 450.0                   | 4000              | 0.25     | 0.1                             | 83.6  | 8.6                      | 40                    |
| SZ1120A     | 12Z                 | 120.0                 | 2.0      | 550.0                   | 4500              | 0.25     | 0.1                             | 91.2  | 7.8                      | 37                    |
| SZ1130A     | 13Z                 | 130.0                 | 1.9      | 700.0                   | 5000              | 0.25     | 0.1                             | 98.8  | 7.0                      | 34                    |
| SZ1150A     | 15Z                 | 150.0                 | 1.7      | 1000.0                  | 6000              | 0.25     | 0.1                             | 114.0 | 6.4                      | 30                    |
| SZ1160A     | 16Z                 | 160.0                 | 1.6      | 1100.0                  | 6500              | 0.25     | 0.1                             | 121.6 | 5.8                      | 28                    |
| SZ1180A     | 18Z                 | 180.0                 | 1.4      | 1200.0                  | 7000              | 0.25     | 0.1                             | 136.8 | 5.2                      | 25                    |
| SZ1200A     | 20Z                 | 200.0                 | 1.2      | 1900.0                  | 9990              | 0.25     | 0.1                             | 152.0 | 4.7                      | 22                    |
| SZ1220A     | 22Z                 | 220.0                 | 1.0      | 1600.0                  | 8000              | 0.25     | 0.1                             | 167.2 | 4.0                      | 20                    |
| SZ1240A     | 24Z                 | 240.0                 | 0.9      | 1800.0                  | 8500              | 0.25     | 0.1                             | 182.4 | 3.8                      | 19                    |
| SZ1250A     | 25Z                 | 250.0                 | 0.9      | 2000.0                  | 9000              | 0.25     | 0.1                             | 190.0 | 3.6                      | 18                    |
| SZ1270A     | 27Z                 | 270.0                 | 0.8      | 2100.0                  | 9000              | 0.25     | 0.1                             | 205.0 | 3.3                      | 16                    |
| SZ1300A     | 30Z                 | 300.0                 | 0.8      | 2300.0                  | 9500              | 0.25     | 0.1                             | 228.0 | 3.0                      | 15                    |
| SZ1330A     | 33Z                 | 330.0                 | 0.7      | 2500.0                  | 9500              | 0.25     | 0.1                             | 250.2 | 2.7                      | 13                    |

Note:

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 Method

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