

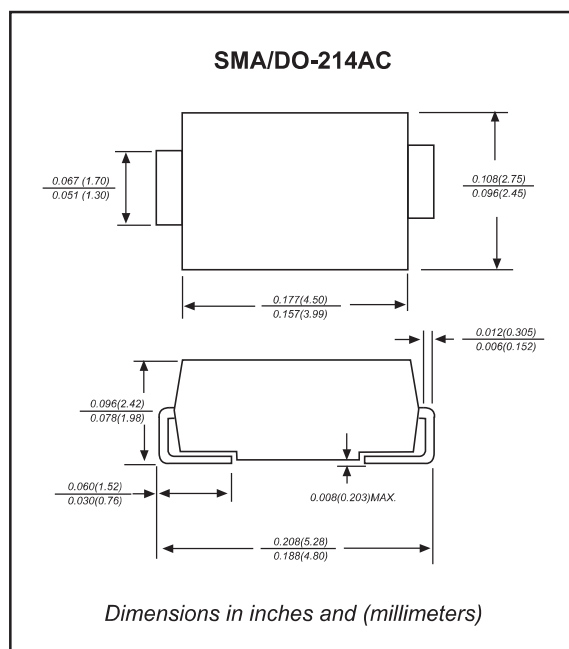
### Features

- Batch process design, excellent power dissipation offers better reverse leakage current and thermal resistance.
- Wide zener reverse voltage range 3.3V to 200V.
- Small package size for high density applications.
- Ideally suited for automated assembly processes.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228
- Compliant to Halogen-free

### Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, DO-214AC/ SMA
- Terminals :Plated terminals, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any

### Package outline



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

| PARAMETER                            | CONDITIONS               | Symbol    | MIN. | TYP. | MAX. | UNIT             |
|--------------------------------------|--------------------------|-----------|------|------|------|------------------|
| Forward voltage                      | $I_F = 200 \text{ mA}$   | $V_F$     |      |      | 1.20 | V                |
| Power dissipation                    | $T_L = 50^\circ\text{C}$ | $P_D$     |      |      | 3.0  | W                |
| Operating junction temperature range |                          | $T_J$     | -55  |      | +150 | $^\circ\text{C}$ |
| Storage temperature range            |                          | $T_{STG}$ | -65  |      | +175 | $^\circ\text{C}$ |

### Electrical characteristics (at T<sub>A</sub>=25°C unless otherwise noted)

| TYPE   | Marking Code | Nominal Zener Voltage            |                 | Maximum Zener Impedance           |                                   |                 | Maximum Reverse Leakage Current |       | Maximum DC Zener Current |
|--------|--------------|----------------------------------|-----------------|-----------------------------------|-----------------------------------|-----------------|---------------------------------|-------|--------------------------|
|        |              | V <sub>Z</sub> @ I <sub>ZT</sub> | I <sub>ZT</sub> | Z <sub>zT</sub> @ I <sub>ZT</sub> | Z <sub>zK</sub> @ I <sub>ZK</sub> | I <sub>ZK</sub> | I <sub>R</sub> @ V <sub>R</sub> |       | I <sub>ZM</sub>          |
|        |              | (V)                              | (mA)            | (Ω)                               | (Ω)                               | (mA)            | (μA)                            | (V)   | (mA)                     |
| SZ553D | 553D         | 3.3                              | 227.3           | 10.0                              | 500                               | 1.0             | 100                             | 1.0   | 817                      |
| SZ553G | 553G         | 3.6                              | 208.3           | 9.0                               | 500                               | 1.0             | 100                             | 1.0   | 749                      |
| SZ553J | 553J         | 3.9                              | 192             | 4.5                               | 400                               | 1.0             | 80                              | 1.0   | 630                      |
| SZ554D | 554D         | 4.3                              | 174             | 4.5                               | 400                               | 1.0             | 30                              | 1.0   | 590                      |
| SZ554H | 554H         | 4.7                              | 160             | 4.0                               | 500                               | 1.0             | 20                              | 1.0   | 550                      |
| SZ555B | 555B         | 5.1                              | 147             | 3.5                               | 550                               | 1.0             | 5.0                             | 1.0   | 520                      |
| SZ555G | 555G         | 5.6                              | 134             | 2.5                               | 600                               | 1.0             | 5.0                             | 2.0   | 480                      |
| SZ556C | 556C         | 6.2                              | 121             | 1.5                               | 700                               | 1.0             | 5.0                             | 3.0   | 435                      |
| SZ556I | 556I         | 6.8                              | 110             | 2.0                               | 700                               | 1.0             | 50                              | 4.0   | 393                      |
| SZ557F | 557F         | 7.5                              | 100             | 2.0                               | 700                               | 0.5             | 50                              | 5.0   | 360                      |
| SZ558C | 558C         | 8.2                              | 91              | 2.3                               | 700                               | 0.5             | 50                              | 6.0   | 330                      |
| SZ559B | 559B         | 9.1                              | 82              | 2.5                               | 700                               | 0.5             | 50                              | 7.0   | 297                      |
| SZ5510 | 5510         | 10                               | 75              | 3.5                               | 700                               | 0.3             | 50                              | 7.6   | 270                      |
| SZ5511 | 5511         | 11                               | 68              | 4.0                               | 700                               | 0.25            | 50                              | 8.4   | 225                      |
| SZ5512 | 5512         | 12                               | 63              | 4.5                               | 700                               | 0.25            | 1.0                             | 9.1   | 246                      |
| SZ5513 | 5513         | 13                               | 58              | 4.5                               | 700                               | 0.25            | 0.5                             | 9.1   | 208                      |
| SZ5514 | 5514         | 14                               | 53              | 5.0                               | 700                               | 0.25            | 0.5                             | 10.6  | 193                      |
| SZ5515 | 5515         | 15                               | 50              | 5.5                               | 700                               | 0.25            | 0.5                             | 11.4  | 180                      |
| SZ5516 | 5516         | 16                               | 47              | 5.5                               | 700                               | 0.25            | 0.5                             | 12.2  | 169                      |
| SZ5517 | 5517         | 17                               | 44              | 6.0                               | 750                               | 0.25            | 0.5                             | 13.0  | 159                      |
| SZ5518 | 5518         | 18                               | 42              | 6.0                               | 750                               | 0.25            | 0.5                             | 13.7  | 150                      |
| SZ5519 | 5519         | 19                               | 40              | 7.0                               | 750                               | 0.25            | 0.5                             | 14.4  | 142                      |
| SZ5520 | 5520         | 20                               | 37              | 7.0                               | 750                               | 0.25            | 0.5                             | 15.2  | 135                      |
| SZ5522 | 5522         | 22                               | 34              | 8.0                               | 750                               | 0.25            | 0.5                             | 16.7  | 123                      |
| SZ5524 | 5524         | 24                               | 31              | 9.0                               | 750                               | 0.25            | 0.5                             | 18.2  | 112                      |
| SZ5527 | 5527         | 27                               | 28              | 10                                | 750                               | 0.25            | 0.5                             | 20.6  | 100                      |
| SZ5528 | 5528         | 28                               | 27              | 12                                | 750                               | 0.25            | 0.5                             | 21.0  | 96                       |
| SZ5530 | 5530         | 30                               | 25              | 16                                | 1000                              | 0.25            | 0.5                             | 22.5  | 90                       |
| SZ5533 | 5533         | 33                               | 23              | 20                                | 1000                              | 0.25            | 0.5                             | 25.1  | 82                       |
| SZ5536 | 5536         | 36                               | 21              | 22                                | 1000                              | 0.25            | 0.5                             | 27.4  | 75                       |
| SZ5539 | 5539         | 39                               | 19              | 28                                | 1000                              | 0.25            | 0.5                             | 29.7  | 69                       |
| SZ5543 | 5543         | 43                               | 17              | 33                                | 1500                              | 0.25            | 0.5                             | 32.7  | 63                       |
| SZ5547 | 5547         | 47                               | 16              | 38                                | 1500                              | 0.25            | 0.5                             | 35.6  | 57                       |
| SZ5551 | 5551         | 51                               | 15              | 45                                | 1500                              | 0.25            | 0.5                             | 38.8  | 53                       |
| SZ5556 | 5556         | 56                               | 13              | 50                                | 2000                              | 0.25            | 0.5                             | 42.6  | 48                       |
| SZ5562 | 5562         | 62                               | 12              | 55                                | 2000                              | 0.25            | 0.5                             | 47.1  | 44                       |
| SZ5568 | 5568         | 68                               | 11              | 70                                | 2000                              | 0.25            | 0.5                             | 51.7  | 40                       |
| SZ5575 | 5575         | 75                               | 10              | 85                                | 2000                              | 0.25            | 0.5                             | 56.0  | 36                       |
| SZ5582 | 5582         | 82                               | 9.1             | 95                                | 3000                              | 0.25            | 0.5                             | 62.2  | 33                       |
| SZ5591 | 5591         | 91                               | 8.2             | 115                               | 3000                              | 0.25            | 0.5                             | 69.2  | 30                       |
| SZ55B0 | 55B0         | 100                              | 7.5             | 160                               | 3000                              | 0.25            | 0.5                             | 76.0  | 27                       |
| SZ55B1 | 55B1         | 110                              | 6.8             | 225                               | 4000                              | 0.25            | 0.5                             | 83.6  | 25                       |
| SZ55B2 | 55B2         | 120                              | 6.3             | 300                               | 4500                              | 0.25            | 0.5                             | 91.2  | 22                       |
| SZ55B3 | 55B3         | 130                              | 5.8             | 375                               | 5000                              | 0.25            | 0.5                             | 98.8  | 21                       |
| SZ55B4 | 55B4         | 140                              | 5.3             | 475                               | 5000                              | 0.25            | 0.5                             | 106.4 | 19                       |
| SZ55B5 | 55B5         | 150                              | 5.0             | 550                               | 6000                              | 0.25            | 0.5                             | 114.0 | 18                       |
| SZ55B6 | 55B6         | 160                              | 4.7             | 625                               | 6500                              | 0.25            | 0.5                             | 121.6 | 17                       |
| SZ55B7 | 55B7         | 170                              | 4.4             | 650                               | 7000                              | 0.25            | 0.5                             | 130.4 | 16                       |
| SZ55B8 | 55B8         | 180                              | 4.2             | 700                               | 7000                              | 0.25            | 0.5                             | 136.8 | 15                       |
| SZ55B9 | 55B9         | 190                              | 4.0             | 800                               | 8000                              | 0.25            | 0.5                             | 144.8 | 14                       |
| SZ55D0 | 55D0         | 200                              | 3.7             | 875                               | 8000                              | 0.25            | 0.5                             | 152.0 | 13                       |

**Note:**

- (1) The type number listed have a standard tolerance on the nominal zener voltage of  $\pm 5.0\%$ , altered the fourth number of type from "5" for  $\pm 5.0\%$  tolerance to be "0" for  $\pm 10\%$  tolerance.

### Rating and characteristic curves

FIG.1 Typical Thermal Response L

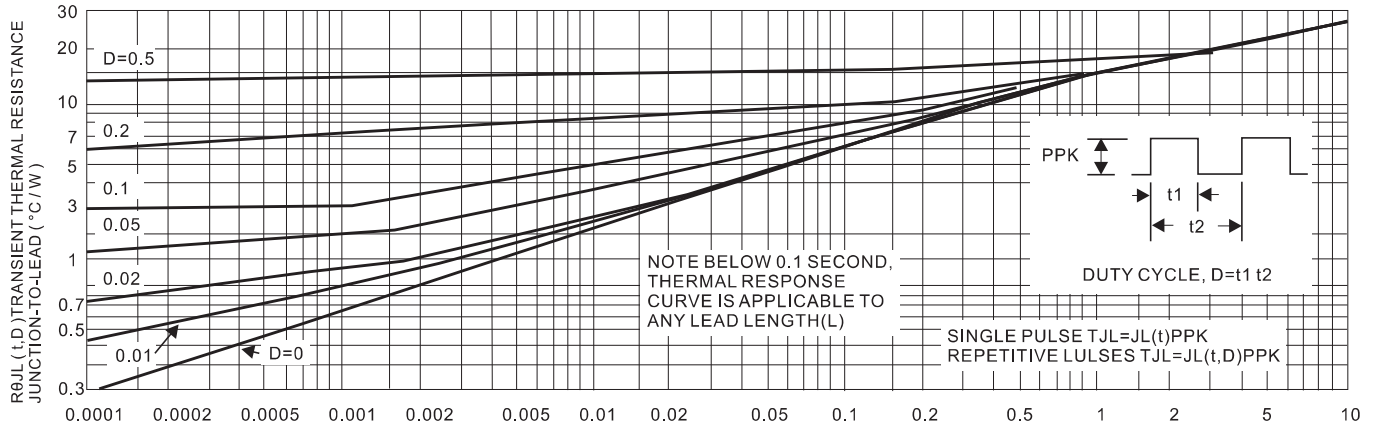


FIG. 2 Maximum Surge Power

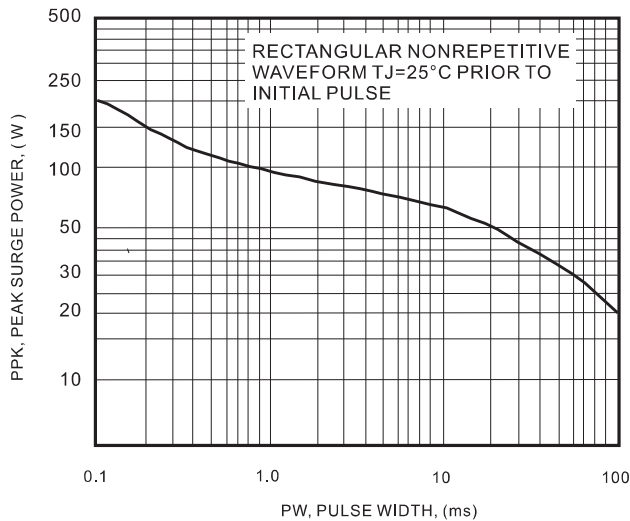


FIG. 3 Maximum Surge Power

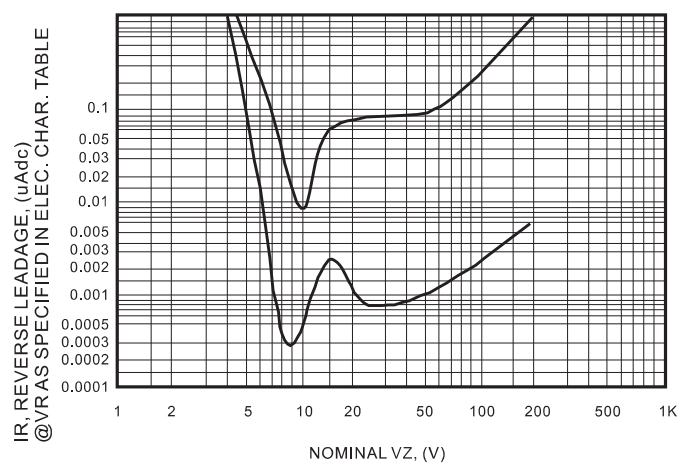


FIG.4 Units To 12 Volts

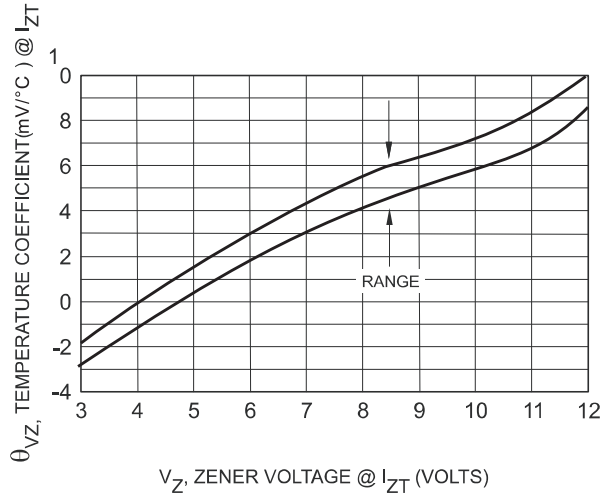
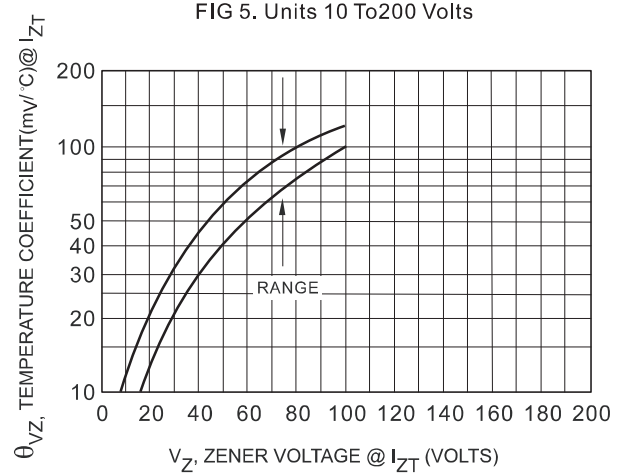


FIG 5. Units 10 To200 Volts



## Rating and characteristic curves

FIG.6 To 10 Volts

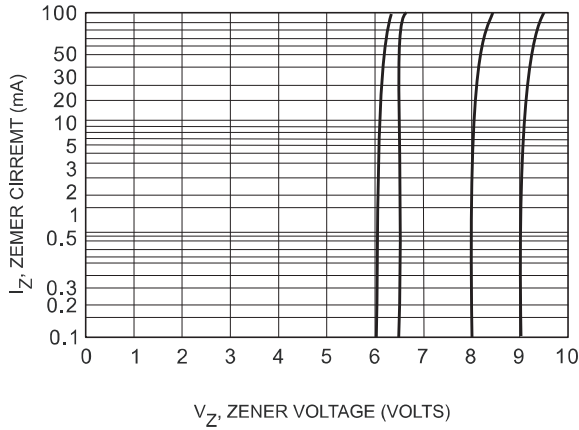


FIG.7  $V_Z = 12$  Thru 82 Volts

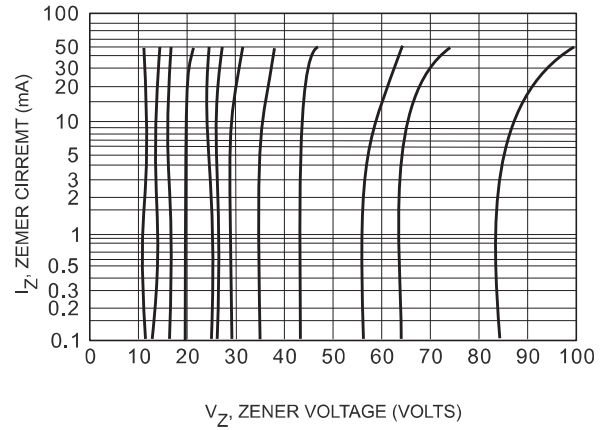


FIG. 8 Typical Thermal Resistance

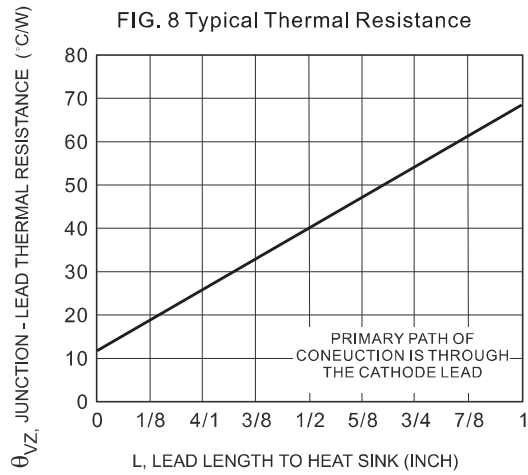
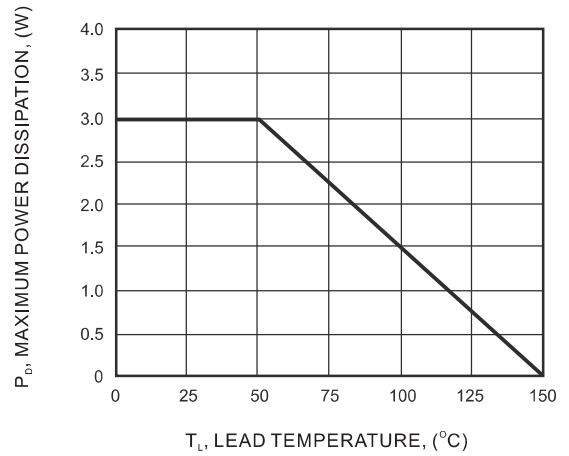


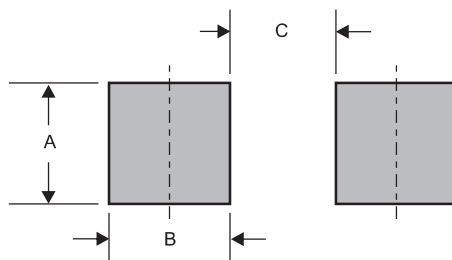
FIG.9 STEADY STATE POWER DERATING



## Pinning information

| Pin                        | Simplified outline                                                                | Symbol                                                                              |
|----------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Pin1 cathode<br>Pin2 anode |  |  |

## Suggested solder pad layout



Dimensions in inches and (millimeters)

| PACKAGE | A            | B            | C            |
|---------|--------------|--------------|--------------|
| SMA     | 0.110 (2.80) | 0.063 (1.60) | 0.087 (2.20) |