

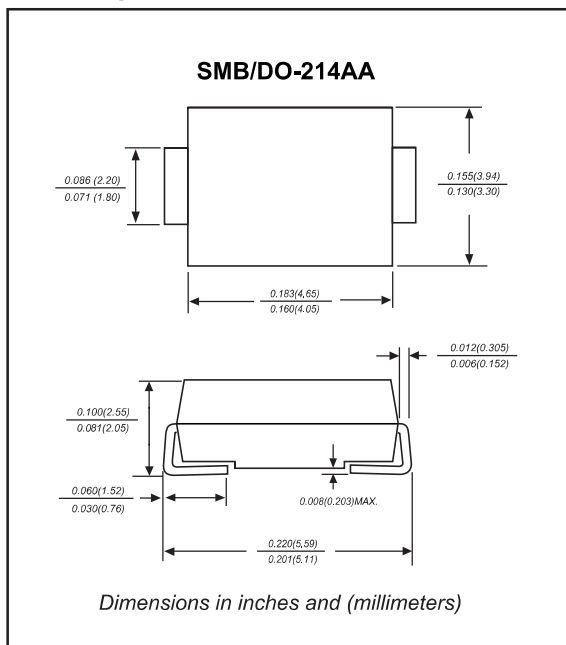
### Features

- 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-214AA/ SMB
- 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)                     |
| SMBJ5913B | 5913         | 3.3                              | 113.6           | 10                                | 500                               | 1.0             | 100                             | 1.0   | 454                      |
| SMBJ5914B | 5914         | 3.6                              | 104.2           | 9.0                               | 500                               | 1.0             | 75                              | 1.0   | 416                      |
| SMBJ5915B | 5915         | 3.9                              | 96.1            | 7.5                               | 500                               | 1.0             | 25                              | 1.0   | 384                      |
| SMBJ5916B | 5916         | 4.3                              | 87.2            | 6.0                               | 500                               | 1.0             | 5.0                             | 1.0   | 348                      |
| SMBJ5917B | 5917         | 4.7                              | 79.8            | 5.0                               | 500                               | 1.0             | 5.0                             | 1.5   | 319                      |
| SMBJ5918B | 5918         | 5.1                              | 73.5            | 4.0                               | 500                               | 1.0             | 5.0                             | 2.0   | 294                      |
| SMBJ5919B | 5919         | 5.6                              | 66.9            | 2.0                               | 250                               | 1.0             | 5.0                             | 3.0   | 267                      |
| SMBJ5920B | 5920         | 6.2                              | 60.5            | 2.0                               | 200                               | 1.0             | 5.0                             | 4.0   | 241                      |
| SMBJ5921B | 5921         | 6.8                              | 55.1            | 2.5                               | 200                               | 1.0             | 50                              | 5.2   | 220                      |
| SMBJ5922B | 5922         | 7.5                              | 50.0            | 3.0                               | 400                               | 0.5             | 50                              | 6.0   | 200                      |
| SMBJ5923B | 5923         | 8.2                              | 45.7            | 3.5                               | 400                               | 0.5             | 50                              | 6.5   | 182                      |
| SMBJ5924B | 5924         | 9.1                              | 41.2            | 4.0                               | 500                               | 0.5             | 50                              | 7.0   | 164                      |
| SMBJ5925B | 5925         | 10                               | 37.5            | 4.5                               | 500                               | 0.25            | 50                              | 8.0   | 150                      |
| SMBJ5926B | 5926         | 11                               | 34.1            | 5.5                               | 550                               | 0.25            | 50                              | 8.4   | 136                      |
| SMBJ5927B | 5927         | 12                               | 31.2            | 6.5                               | 550                               | 0.25            | 1.0                             | 9.1   | 125                      |
| SMBJ5928B | 5928         | 13                               | 28.8            | 7.0                               | 550                               | 0.25            | 1.0                             | 9.9   | 115                      |
| SMBJ5929B | 5929         | 15                               | 25.0            | 9.0                               | 600                               | 0.25            | 1.0                             | 11.4  | 100                      |
| SMBJ5930B | 5930         | 16                               | 23.4            | 10                                | 600                               | 0.25            | 1.0                             | 12.2  | 93                       |
| SMBJ5931B | 5931         | 18                               | 20.8            | 12                                | 650                               | 0.25            | 1.0                             | 13.7  | 83                       |
| SMBJ5932B | 5932         | 20                               | 18.7            | 14                                | 650                               | 0.25            | 1.0                             | 15.2  | 75                       |
| SMBJ5933B | 5933         | 22                               | 17.0            | 17.5                              | 650                               | 0.25            | 1.0                             | 16.7  | 68                       |
| SMBJ5934B | 5934         | 24                               | 15.6            | 19                                | 700                               | 0.25            | 1.0                             | 18.2  | 62                       |
| SMBJ5935B | 5935         | 27                               | 13.9            | 23                                | 700                               | 0.25            | 1.0                             | 20.6  | 55                       |
| SMBJ5936B | 5936         | 30                               | 12.5            | 26                                | 750                               | 0.25            | 1.0                             | 22.8  | 50                       |
| SMBJ5937B | 5937         | 33                               | 11.4            | 33                                | 800                               | 0.25            | 1.0                             | 25.1  | 45                       |
| SMBJ5938B | 5938         | 36                               | 10.4            | 38                                | 850                               | 0.25            | 1.0                             | 27.4  | 41                       |
| SMBJ5939B | 5939         | 39                               | 9.6             | 45                                | 900                               | 0.25            | 1.0                             | 29.7  | 38                       |
| SMBJ5940B | 5940         | 43                               | 8.7             | 53                                | 950                               | 0.25            | 1.0                             | 32.7  | 34                       |
| SMBJ5941B | 5941         | 47                               | 8.0             | 67                                | 1000                              | 0.25            | 1.0                             | 35.8  | 31                       |
| SMBJ5942B | 5942         | 51                               | 7.3             | 70                                | 1100                              | 0.25            | 1.0                             | 38.8  | 29                       |
| SMBJ5943B | 5943         | 56                               | 6.7             | 86                                | 1300                              | 0.25            | 1.0                             | 42.6  | 26                       |
| SMBJ5944B | 5944         | 62                               | 6.0             | 100                               | 1500                              | 0.25            | 1.0                             | 47.1  | 24                       |
| SMBJ5945B | 5945         | 68                               | 5.5             | 120                               | 1700                              | 0.25            | 1.0                             | 51.7  | 22                       |
| SMBJ5946B | 5946         | 75                               | 5.0             | 140                               | 2000                              | 0.25            | 1.0                             | 56.0  | 20                       |
| SMBJ5947B | 5947         | 82                               | 4.6             | 160                               | 2500                              | 0.25            | 1.0                             | 62.2  | 18                       |
| SMBJ5948B | 5948         | 91                               | 4.1             | 200                               | 3000                              | 0.25            | 1.0                             | 69.2  | 16                       |
| SMBJ5949B | 5949         | 100                              | 3.7             | 250                               | 3100                              | 0.25            | 1.0                             | 76.0  | 15                       |
| SMBJ5950B | 5950         | 110                              | 3.4             | 300                               | 4000                              | 0.25            | 1.0                             | 83.6  | 13                       |
| SMBJ5951B | 5951         | 120                              | 3.1             | 380                               | 4500                              | 0.25            | 1.0                             | 91.2  | 12                       |
| SMBJ5952B | 5952         | 130                              | 2.9             | 450                               | 5000                              | 0.25            | 1.0                             | 98.8  | 11                       |
| SMBJ5953B | 5953         | 150                              | 2.5             | 600                               | 6000                              | 0.25            | 1.0                             | 114.0 | 10                       |
| SMBJ5954B | 5954         | 160                              | 2.3             | 700                               | 6500                              | 0.25            | 1.0                             | 121.6 | 9.0                      |
| SMBJ5955B | 5955         | 180                              | 2.1             | 900                               | 7000                              | 0.25            | 1.0                             | 136.8 | 8.0                      |
| SMBJ5956B | 5956         | 200                              | 1.9             | 1200                              | 8000                              | 0.25            | 1.0                             | 152.0 | 7.0                      |

#### Note :

( 1 ) Suffix " A " indicates ± 10% tolerance, suffix " B " indicates ± 5.0% tolerance.

## Rating and characteristic curves

FIG.1 Typical Thermal Response L

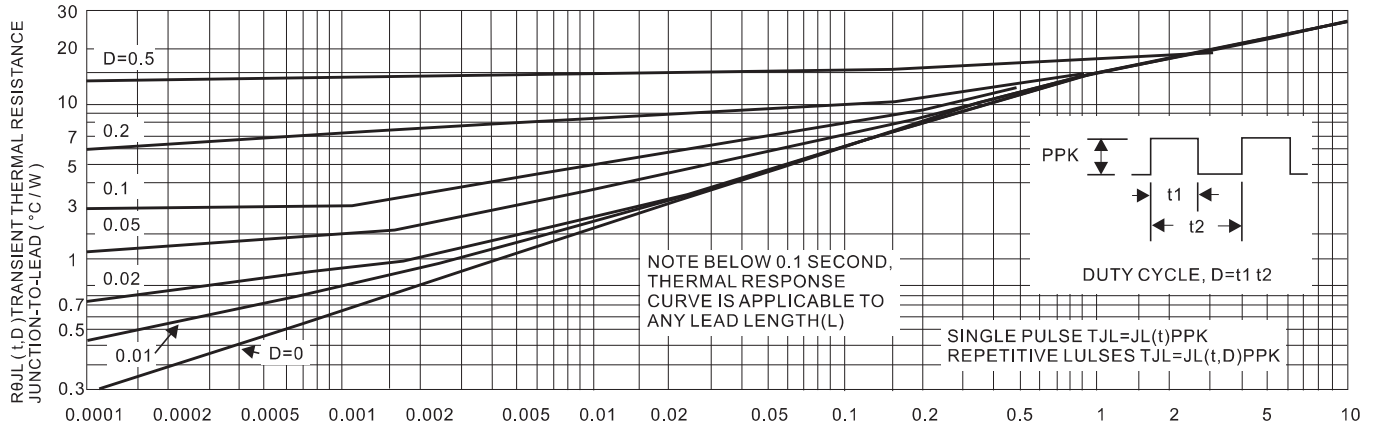


FIG. 2 Maximum Surge Power

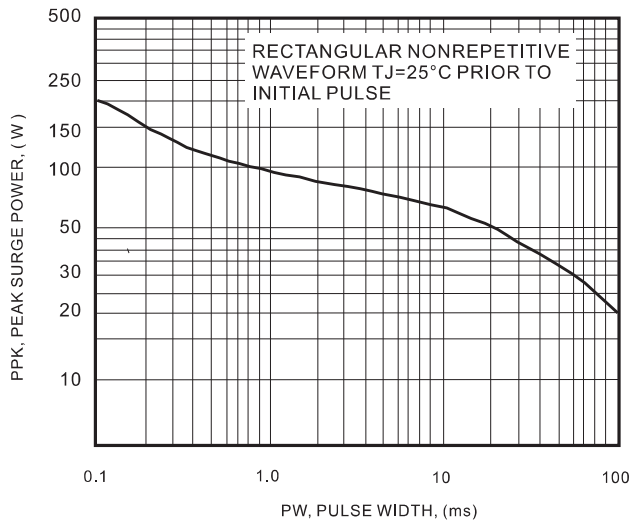


FIG. 3 Maximum Surge Power

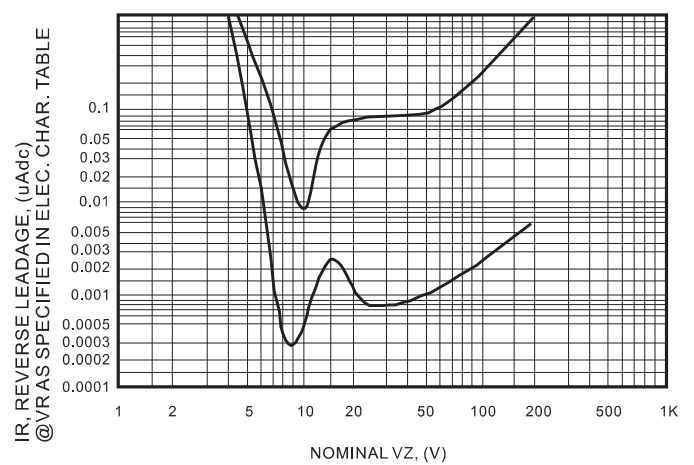


FIG.4 Units To 12 Volts

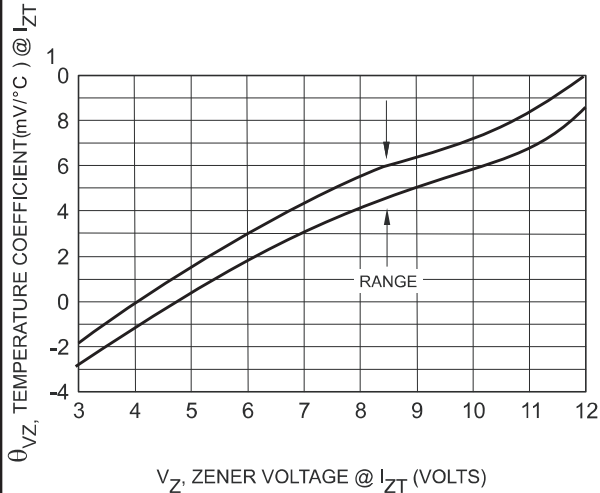
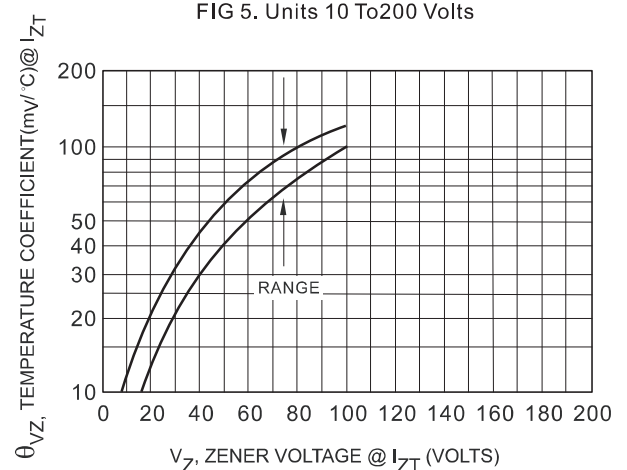


FIG 5. Units 10 To200 Volts



## Rating and characteristic curves

FIG.6 To 10 Volts

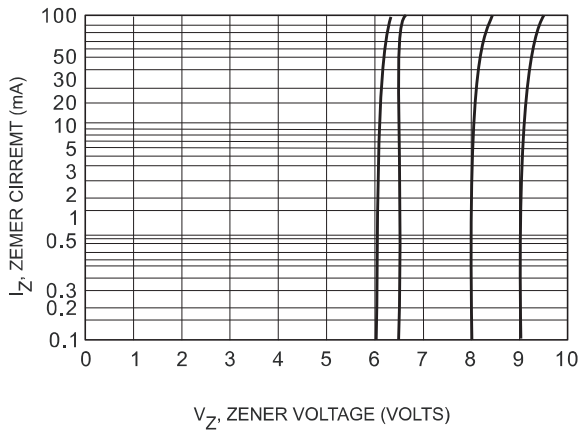


FIG.7  $V_Z = 12$  Thru 82 Volts

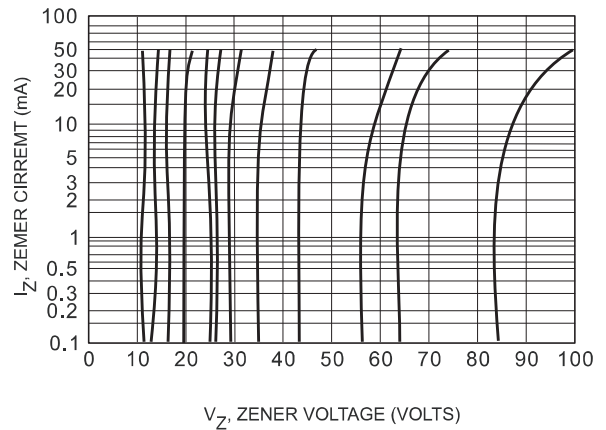


FIG. 8 Typical Thermal Resistance

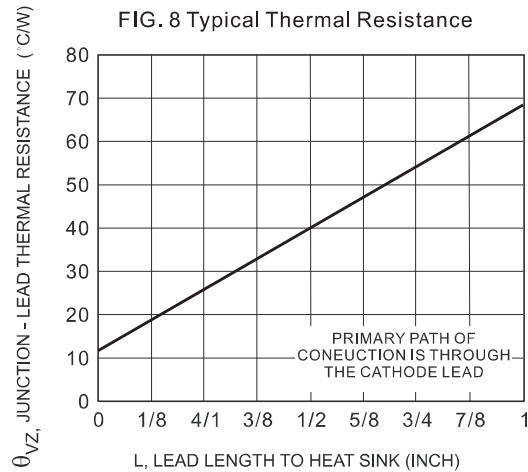


FIG.9 STEADY STATE POWER DERATING

