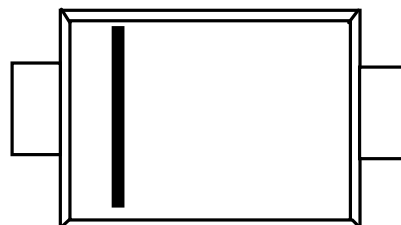


### »Features

- Low profile package.
- Low Zener impedance.
- High reliability chips
- Halogen free and RoHS compliant
- Lead-free finish



**SMB(DO-214AA)**

### »General Description

- CASE: SMB(DO-214AA) Molded Plastic
- Mounting Position: Any
- Polarity: cathode by color band
- Terminal: Solder plated

### » Maximum Ratings @T<sub>A</sub>=25°C unless otherwise noted

| Parameter                                  | Symbol           | Value      | Units |
|--------------------------------------------|------------------|------------|-------|
| Power Dissipation @T <sub>L</sub> =75°C    | PD               | 3          | W     |
| Thermal Resistance Junction To Ambient Air | R <sub>θJA</sub> | 100        | °C/W  |
| Thermal Resistance Junction To Leads       | R <sub>θJL</sub> | 25         | °C/W  |
| Storage Temperature Range                  | TSTG             | -55 to 150 | °C    |
| Max Forward Voltage @I <sub>F</sub> =200mA | V <sub>F</sub>   | 1.2        | V     |
| Operating Junction Temperature Range       | T <sub>J</sub>   | -55 to 150 | °C    |

**»Electrical Characteristics** @T<sub>A</sub>=25°C unless otherwise noted

| Part Number | Zener voltage        |                      | Test current    | Dynamic impedance | Knee current    | Knee impedance  | Reverse current        | Reverse voltage | Max. DC current |
|-------------|----------------------|----------------------|-----------------|-------------------|-----------------|-----------------|------------------------|-----------------|-----------------|
|             | V <sub>Z</sub> /V    |                      | I <sub>ZT</sub> | Z <sub>ZT</sub>   | I <sub>ZK</sub> | Z <sub>ZK</sub> | I <sub>R</sub> (Max. ) | V <sub>R</sub>  | I <sub>ZM</sub> |
|             | V <sub>Z</sub> (MIN) | V <sub>Z</sub> (MAX) | m A             | Ω                 | m A             | Ω               | μA <sub>dc</sub>       | V               | m A             |
| 1SMB5913B   | 3.135                | 3.465                | 113.6           | 10                | 1               | 500             | 100                    | 1               | 454             |
| 1SMB5914B   | 3.42                 | 3.78                 | 104.2           | 9                 | 1               | 500             | 75                     | 1               | 416             |
| 1SMB5915B   | 3.705                | 4.095                | 96.1            | 7.5               | 1               | 500             | 25                     | 1               | 384             |
| 1SMB5916B   | 4.085                | 4.515                | 87.2            | 6                 | 1               | 500             | 5                      | 1               | 348             |
| 1SMB5917B   | 4.465                | 4.935                | 79.8            | 5                 | 1               | 500             | 5                      | 1.5             | 319             |
| 1SMB5918B   | 4.845                | 5.355                | 73.5            | 4                 | 1               | 350             | 5                      | 2               | 294             |
| 1SMB5919B   | 5.32                 | 5.88                 | 66.9            | 2                 | 1               | 250             | 5                      | 3               | 267             |
| 1SMB5920B   | 5.89                 | 6.51                 | 60.5            | 2                 | 1               | 200             | 5                      | 4               | 241             |
| 1SMB5921B   | 6.46                 | 7.14                 | 55.1            | 2.5               | 1               | 200             | 5                      | 5.2             | 220             |
| 1SMB5922B   | 7.125                | 7.875                | 50              | 3                 | 0.5             | 400             | 5                      | 6               | 200             |
| 1SMB5923B   | 7.79                 | 8.61                 | 45.7            | 3.5               | 0.5             | 400             | 5                      | 6.5             | 182             |
| 1SMB5924B   | 8.645                | 9.555                | 41.2            | 4                 | 0.5             | 500             | 5                      | 7               | 164             |
| 1SMB5925B   | 9.5                  | 10.5                 | 37.5            | 4.5               | 0.25            | 500             | 5                      | 8               | 150             |
| 1SMB5926B   | 10.45                | 11.55                | 34.1            | 5.5               | 0.25            | 550             | 1                      | 8.4             | 136             |
| 1SMB5927B   | 11.4                 | 12.6                 | 31.2            | 6.5               | 0.25            | 550             | 1                      | 9.1             | 125             |
| 1SMB5928B   | 12.35                | 13.65                | 28.8            | 7                 | 0.25            | 550             | 1                      | 9.9             | 115             |
| 1SMB5929B   | 14.25                | 15.75                | 25              | 9                 | 0.25            | 600             | 1                      | 11.4            | 100             |
| 1SMB5930B   | 15.2                 | 16.8                 | 23.4            | 10                | 0.25            | 600             | 1                      | 12.2            | 93              |
| 1SMB5931B   | 17.1                 | 18.9                 | 20.8            | 12                | 0.25            | 650             | 1                      | 13.7            | 83              |
| 1SMB5932B   | 19                   | 21                   | 18.7            | 14                | 0.25            | 650             | 1                      | 15.2            | 75              |
| 1SMB5933B   | 20.9                 | 23.1                 | 17              | 17.5              | 0.25            | 650             | 1                      | 16.7            | 68              |
| 1SMB5934B   | 22.8                 | 25.2                 | 15.6            | 19                | 0.25            | 700             | 1                      | 18.2            | 62              |
| 1SMB5935B   | 25.65                | 28.35                | 13.9            | 23                | 0.25            | 700             | 1                      | 20.6            | 55              |
| 1SMB5936B   | 28.5                 | 31.5                 | 12.5            | 28                | 0.25            | 750             | 1                      | 22.8            | 50              |
| 1SMB5937B   | 31.35                | 34.65                | 11.4            | 33                | 0.25            | 800             | 1                      | 25.1            | 45              |
| 1SMB5938B   | 34.2                 | 37.8                 | 10.4            | 38                | 0.25            | 850             | 1                      | 27.4            | 41              |
| 1SMB5939B   | 37.05                | 40.95                | 9.6             | 45                | 0.25            | 900             | 1                      | 29.7            | 38              |
| 1SMB5940B   | 40.85                | 45.15                | 8.7             | 53                | 0.25            | 950             | 1                      | 32.7            | 34              |
| 1SMB5941B   | 44.65                | 49.35                | 8               | 67                | 0.25            | 1000            | 1                      | 35.8            | 31              |
| 1SMB5942B   | 48.45                | 53.55                | 7.3             | 70                | 0.25            | 1100            | 1                      | 38.8            | 29              |
| 1SMB5943B   | 53.2                 | 58.8                 | 6.7             | 86                | 0.25            | 1300            | 1                      | 42.6            | 26              |
| 1SMB5944B   | 58.9                 | 65.1                 | 6               | 100               | 0.25            | 1500            | 1                      | 47.1            | 24              |

**»Electrical Characteristics** @T<sub>A</sub>=25°C unless otherwise noted

| Part<br>Number | Zener voltage |          | Test<br>current | Dynamic<br>impedance | Knee<br>current | Knee<br>impedance | Reverse<br>current | Reverse<br>voltage | Max. DC<br>current |
|----------------|---------------|----------|-----------------|----------------------|-----------------|-------------------|--------------------|--------------------|--------------------|
|                | VZ /V         |          | IZT             | ZZT                  | IZK             | ZZK               | IR (Max. )         | VR                 | IZM                |
|                | Vz (MIN)      | Vz (MAX) | m A             | Ω                    | m A             | Ω                 | μA <sub>dc</sub>   | V                  | m A                |
| 1SMB5945B      | 64.6          | 71.4     | 5.5             | 120                  | 0.25            | 1700              | 1                  | 51.7               | 22                 |
| 1SMB5946B      | 71.25         | 78.8     | 5               | 140                  | 0.25            | 2000              | 1                  | 56                 | 20                 |
| 1SMB5947B      | 77.9          | 86.1     | 4.6             | 160                  | 0.25            | 2500              | 1                  | 62.2               | 18                 |
| 1SMB5948B      | 86.45         | 95.6     | 4.1             | 200                  | 0.25            | 3000              | 1                  | 69.2               | 16                 |
| 1SMB5949B      | 95            | 105      | 3.7             | 250                  | 0.25            | 3100              | 1                  | 76                 | 15                 |
| 1SMB5950B      | 104.5         | 115.5    | 3.4             | 300                  | 0.25            | 4000              | 1                  | 83.6               | 13                 |
| 1SMB5951B      | 114           | 126      | 3.1             | 380                  | 0.25            | 4500              | 1                  | 91.2               | 12                 |
| 1SMB5952B      | 123.5         | 136.5    | 2.9             | 450                  | 0.25            | 5000              | 1                  | 98.8               | 11                 |
| 1SMB5953B      | 142.5         | 157.5    | 2.5             | 600                  | 0.25            | 6000              | 1                  | 114                | 10                 |
| 1SMB5954B      | 152           | 168      | 2.3             | 700                  | 0.25            | 6500              | 1                  | 121.6              | 9                  |
| 1SMB5955B      | 171           | 189      | 2.1             | 900                  | 0.25            | 7000              | 1                  | 136.8              | 8                  |
| 1SMB5956B      | 190           | 210      | 1.9             | 1200                 | 0.25            | 8000              | 1                  | 152                | 7                  |

## »Typical Performance Characteristics (( $T_J = 25^\circ\text{C}$ , unless otherwise noted))

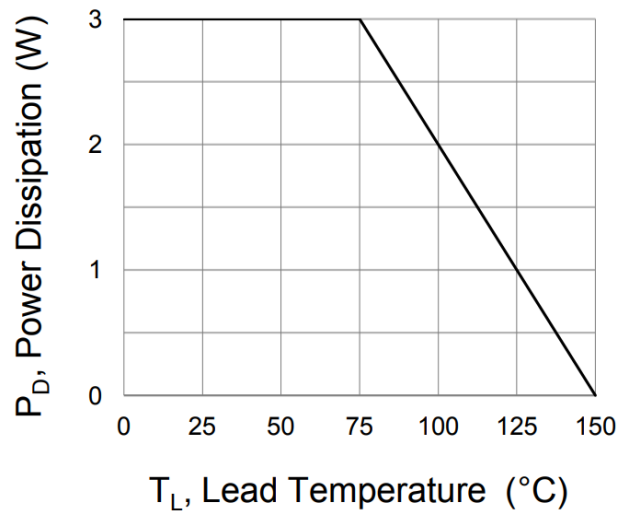


Figure 1 Steady State Power Derating

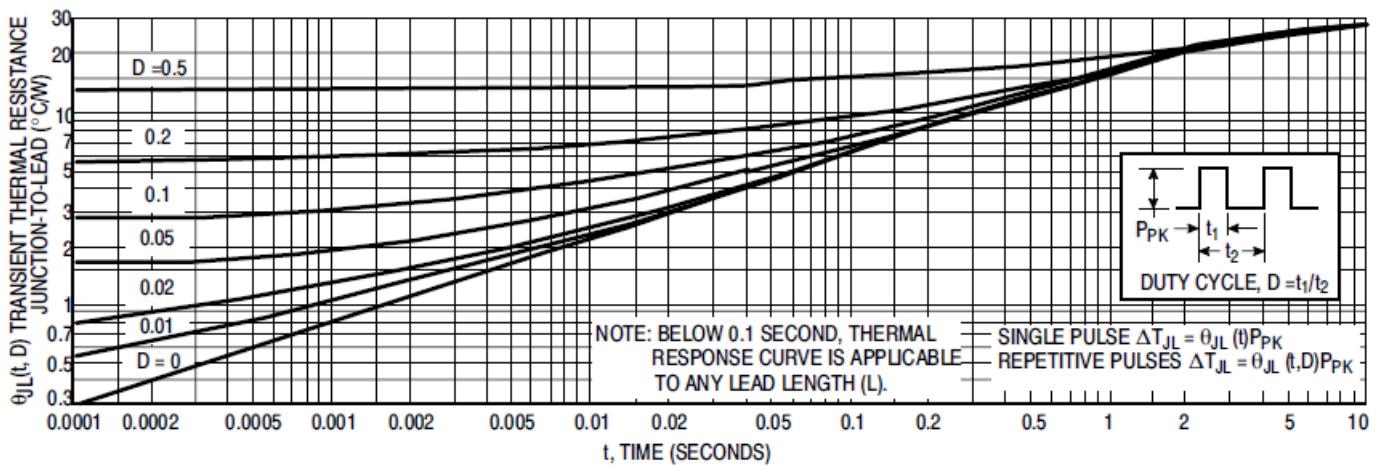


Figure 2. Typical Thermal Response L, Lead Length = 3/8 Inch

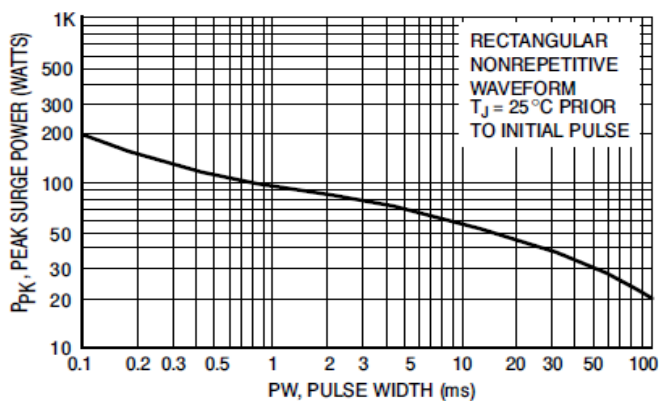


Figure 3. Maximum Surge Power

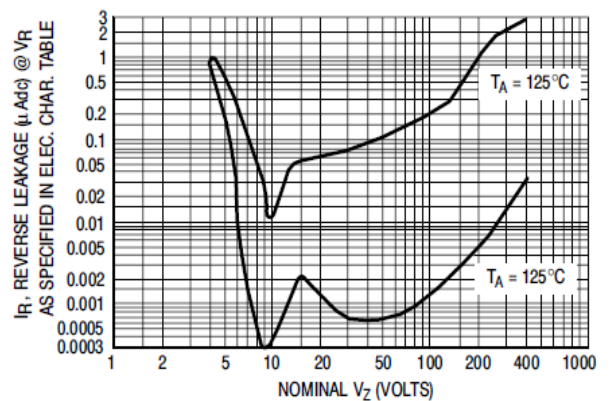
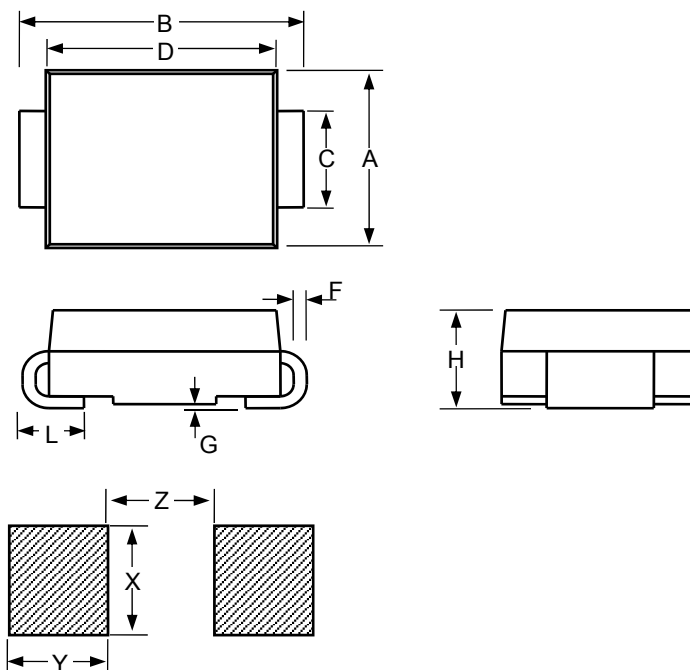


Figure 4. Typical Reverse Leakage

»Package Information

**SMB**



| SMB       |        |       |       |             |      |       |
|-----------|--------|-------|-------|-------------|------|-------|
| Dimension | Inches |       |       | Millimeters |      |       |
|           | MIN    | NOM   | MAX   | MIN         | NOM  | MAX   |
| A         | 0.134  | 0.144 | 0.155 | 3.4         | 3.67 | 3.94  |
| B         | 0.205  | 0.213 | 0.22  | 5.21        | 5.4  | 5.59  |
| C         | 0.075  | 0.079 | 0.083 | 1.9         | 2    | 2.1   |
| D         | 0.169  |       | 0.185 | 4.3         |      | 4.7   |
| F         | 0.006  |       | 0.012 | 0.152       |      | 0.305 |
| G         | -      |       | 0.008 | -           |      | 0.203 |
| H         | 0.085  | 0.091 | 0.096 | 2.15        | 2.3  | 2.45  |
| L         | 0.03   |       | 0.06  | 0.76        |      | 1.52  |
| X         |        | 0.11  |       |             | 2.8  |       |
| Y         |        | 0.079 |       |             | 2    |       |
| Z         |        | 0.079 |       |             | 2    |       |