

$V_Z$ : 5.6 to 200 V

$P_D$ : 3 W

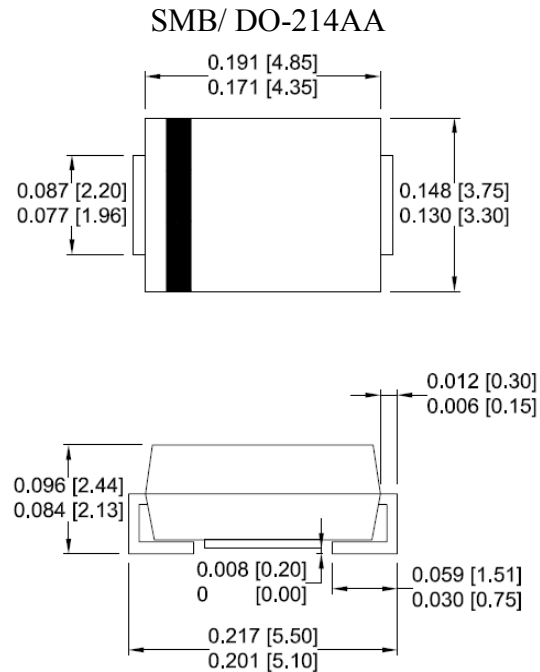
## Surface Mount Zener Diodes

### Features

- Glass passivated chip
- Low leakage
- Built-in strain relief
- Low inductance
- High peak reverse power dissipation
- For use in stabilizing and clipping circuits with high power rating
- RoHS compliant

### Mechanical Data

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



Dimensions: inch[mm]

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

| Parameter  | Symbol    | Value         | Unit             |
|--|-----------|---------------|------------------|
| DC power dissipation at $T_L = 75^\circ\text{C}$ | $P_D$     | 3             | W                |
| Maximum forward voltage at $I_F = 200\text{ mA}$ | $V_F$     | 1.5           | V                |
| Junction temperature range                       | $T_J$     | - 55 to + 150 | $^\circ\text{C}$ |
| Storage temperature range                        | $T_{STG}$ | - 55 to + 150 | $^\circ\text{C}$ |



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

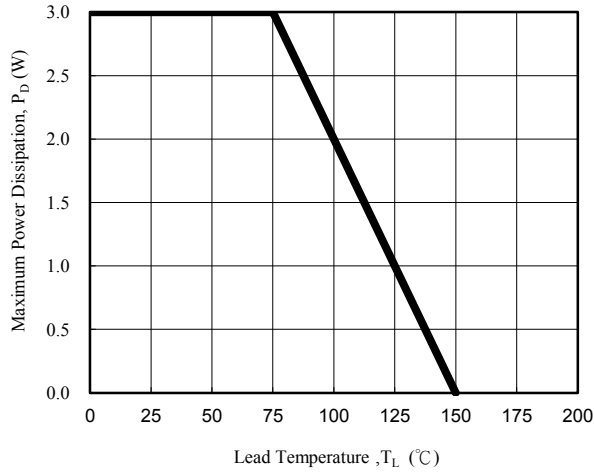


Fig. 1 - Power Temperature Derating Curve

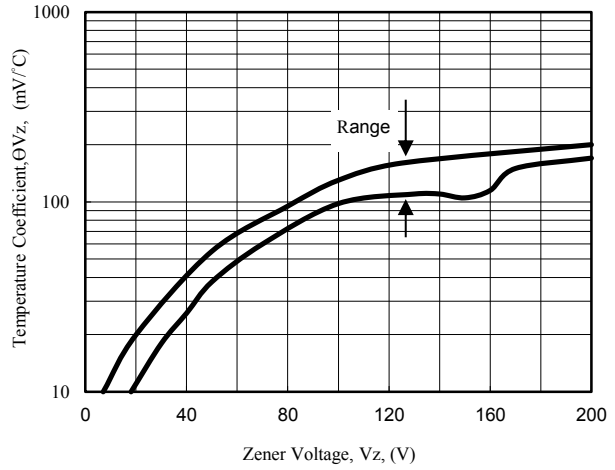


Fig. 2 - Temperature Coefficients v.s. Zener Voltage

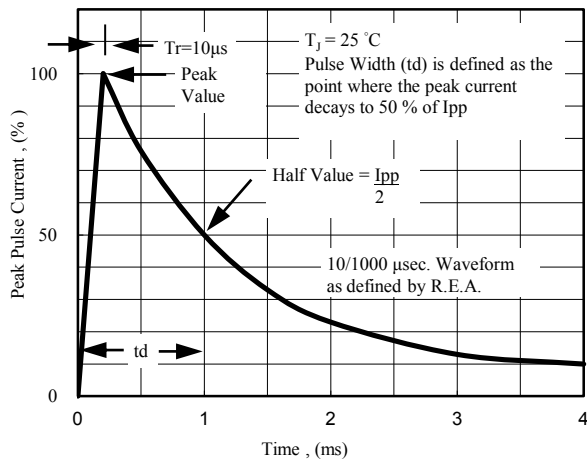


Fig. 3 - Pulse Waveform

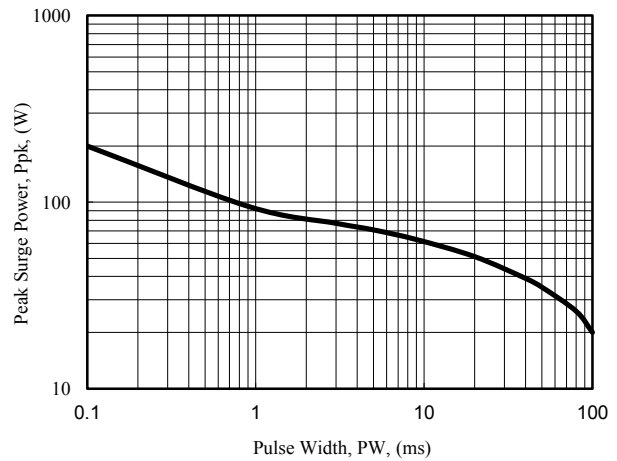


Fig. 4 - Maximum Surge Power

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

| Part Number | Device Marking Code | Nominal Zener Voltage |          | Maximum Zener Impedance |                   |          | Maximum Reverse Leakage Current |       | Maximum DC Zener Current |
|-------------|---------------------|-----------------------|----------|-------------------------|-------------------|----------|---------------------------------|-------|--------------------------|
|             |                     | $V_Z @ I_{ZT}$        | $I_{ZT}$ | $Z_{ZT} @ I_{ZT}$       | $Z_{ZK} @ I_{ZK}$ | $I_{ZK}$ | $I_R @ V_R$                     |       | $I_{ZM}$                 |
|             |                     | (V)                   | (mA)     | ( $\Omega$ )            | ( $\Omega$ )      | (mA)     | ( $\mu\text{A}$ )               | (V)   | (mA)                     |
| SMB3EZ5.6D5 | 3H6                 | 5.6                   | 134.0    | 2.5                     | 600               | 1.00     | 5.0                             | 2.0   | 481                      |
| SMB3EZ6.2D5 | 3A0                 | 6.2                   | 121.0    | 1.5                     | 700               | 1.00     | 5.0                             | 3.0   | 435                      |
| SMB3EZ6.8D5 | 3A1                 | 6.8                   | 110.0    | 2.0                     | 700               | 1.00     | 5.0                             | 4.0   | 393                      |
| SMB3EZ7.5D5 | 3A2                 | 7.5                   | 100.0    | 2.0                     | 700               | 0.50     | 5.0                             | 5.0   | 360                      |
| SMB3EZ8.2D5 | 3A3                 | 8.2                   | 91.0     | 2.3                     | 700               | 0.50     | 5.0                             | 6.0   | 330                      |
| SMB3EZ9.1D5 | 3A4                 | 9.1                   | 82.0     | 2.5                     | 700               | 0.50     | 3.0                             | 7.0   | 297                      |
| SMB3EZ10D5  | 3A5                 | 10.0                  | 75.0     | 3.5                     | 700               | 0.25     | 3.0                             | 7.6   | 270                      |
| SMB3EZ11D5  | 3A6                 | 11.0                  | 68.0     | 4.0                     | 700               | 0.25     | 1.0                             | 8.4   | 225                      |
| SMB3EZ12D5  | 3A7                 | 12.0                  | 63.0     | 4.5                     | 700               | 0.25     | 1.0                             | 9.1   | 246                      |
| SMB3EZ13D5  | 3A8                 | 13.0                  | 58.0     | 4.5                     | 700               | 0.25     | 0.5                             | 9.9   | 208                      |
| SMB3EZ14D5  | 3A9                 | 14.0                  | 53.0     | 5.0                     | 700               | 0.25     | 0.5                             | 10.6  | 193                      |
| SMB3EZ15D5  | 3B0                 | 15.0                  | 50.0     | 5.5                     | 700               | 0.25     | 0.5                             | 11.4  | 180                      |
| SMB3EZ16D5  | 3B1                 | 16.0                  | 47.0     | 5.5                     | 700               | 0.25     | 0.5                             | 12.2  | 169                      |
| SMB3EZ17D5  | 3B2                 | 17.0                  | 44.0     | 6.0                     | 750               | 0.25     | 0.5                             | 13.0  | 159                      |
| SMB3EZ18D5  | 3B3                 | 18.0                  | 42.0     | 6.0                     | 750               | 0.25     | 0.5                             | 13.7  | 150                      |
| SMB3EZ19D5  | 3B4                 | 19.0                  | 40.0     | 7.0                     | 750               | 0.25     | 0.5                             | 14.4  | 142                      |
| SMB3EZ20D5  | 3B5                 | 20.0                  | 37.0     | 7.0                     | 750               | 0.25     | 0.5                             | 15.2  | 135                      |
| SMB3EZ22D5  | 3B6                 | 22.0                  | 34.0     | 8.0                     | 750               | 0.25     | 0.5                             | 16.7  | 123                      |
| SMB3EZ24D5  | 3B7                 | 24.0                  | 31.0     | 9.0                     | 750               | 0.25     | 0.5                             | 18.2  | 112                      |
| SMB3EZ27D5  | 3B8                 | 27.0                  | 28.0     | 10.0                    | 750               | 0.25     | 0.5                             | 20.6  | 100                      |
| SMB3EZ28D5  | 3B9                 | 28.0                  | 27.0     | 12.0                    | 750               | 0.25     | 0.5                             | 21.0  | 96                       |
| SMB3EZ30D5  | 3C0                 | 30.0                  | 25.0     | 16.0                    | 1000              | 0.25     | 0.5                             | 22.5  | 90                       |
| SMB3EZ33D5  | 3C1                 | 33.0                  | 23.0     | 20.0                    | 1000              | 0.25     | 0.5                             | 25.1  | 82                       |
| SMB3EZ36D5  | 3C2                 | 36.0                  | 21.0     | 22.0                    | 1000              | 0.25     | 0.5                             | 27.4  | 75                       |
| SMB3EZ39D5  | 3C3                 | 39.0                  | 19.0     | 28.0                    | 1000              | 0.25     | 0.5                             | 29.7  | 69                       |
| SMB3EZ43D5  | 3C4                 | 43.0                  | 17.0     | 33.0                    | 1500              | 0.25     | 0.5                             | 32.7  | 63                       |
| SMB3EZ47D5  | 3C5                 | 47.0                  | 16.0     | 38.0                    | 1500              | 0.25     | 0.5                             | 35.6  | 57                       |
| SMB3EZ51D5  | 3C6                 | 51.0                  | 15.0     | 45.0                    | 1500              | 0.25     | 0.5                             | 38.8  | 53                       |
| SMB3EZ56D5  | 3C7                 | 56.0                  | 13.0     | 50.0                    | 2000              | 0.25     | 0.5                             | 42.6  | 48                       |
| SMB3EZ62D5  | 3C8                 | 62.0                  | 12.0     | 55.0                    | 2000              | 0.25     | 0.5                             | 47.1  | 44                       |
| SMB3EZ68D5  | 3C9                 | 68.0                  | 11.0     | 70.0                    | 2000              | 0.25     | 0.5                             | 51.7  | 40                       |
| SMB3EZ75D5  | 3F0                 | 75.0                  | 10.0     | 85.0                    | 2000              | 0.25     | 0.5                             | 56.0  | 36                       |
| SMB3EZ82D5  | 3F1                 | 82.0                  | 9.1      | 95.0                    | 3000              | 0.25     | 0.5                             | 62.2  | 33                       |
| SMB3EZ91D5  | 3F2                 | 91.0                  | 8.2      | 115                     | 3000              | 0.25     | 0.5                             | 69.2  | 30                       |
| SMB3EZ100D5 | 3F3                 | 100                   | 7.5      | 160                     | 3000              | 0.25     | 0.5                             | 76.0  | 27                       |
| SMB3EZ110D5 | 3F4                 | 110                   | 6.8      | 225                     | 4000              | 0.25     | 0.5                             | 83.6  | 25                       |
| SMB3EZ120D5 | 3F5                 | 120                   | 6.3      | 300                     | 4500              | 0.25     | 0.5                             | 91.2  | 22                       |
| SMB3EZ130D5 | 3F6                 | 130                   | 5.8      | 375                     | 5000              | 0.25     | 0.5                             | 98.8  | 21                       |
| SMB3EZ140D5 | 3F7                 | 140                   | 5.3      | 475                     | 5000              | 0.25     | 0.5                             | 106.4 | 19                       |
| SMB3EZ150D5 | 3F8                 | 150                   | 5.0      | 550                     | 6000              | 0.25     | 0.5                             | 114.0 | 18                       |
| SMB3EZ160D5 | 3F9                 | 160                   | 4.7      | 625                     | 6500              | 0.25     | 0.5                             | 121.6 | 17                       |
| SMB3EZ170D5 | 3G1                 | 170                   | 4.4      | 650                     | 7000              | 0.25     | 0.5                             | 130.4 | 16                       |
| SMB3EZ180D5 | 3G2                 | 180                   | 4.2      | 700                     | 7000              | 0.25     | 0.5                             | 136.8 | 15                       |
| SMB3EZ190D5 | 3G3                 | 190                   | 4.0      | 800                     | 8000              | 0.25     | 0.5                             | 144.8 | 14                       |
| SMB3EZ200D5 | 3G4                 | 200                   | 3.7      | 875                     | 8000              | 0.25     | 0.5                             | 152.0 | 13                       |

**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 method